Labour-based Technology
A Review of Current Practice

Volume I: Proceedings of the Eighth Regional Seminar

Theme of the seminar:

The New Millennium — Challenges for Employment Intensive Investments

Compiled by
Catherine Allen, Scott Wilson UK

Edited by
The ASIST Team

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**Abbreviations and acronyms**

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune-Deficiency Syndrome</td>
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<td>ANE</td>
<td>National Road Administration, Mozambique</td>
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<tr>
<td>ASIST</td>
<td>Advisory Support, Information Services, and Training</td>
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<tr>
<td>CBO</td>
<td>Community-Based Organisation</td>
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<tr>
<td>DANIDA</td>
<td>Danish International Development Agency</td>
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<td>DCP</td>
<td>Dynamic Cone Penetrometer</td>
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<tr>
<td>DfID</td>
<td>Department for International Development, UK</td>
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<tr>
<td>DM</td>
<td>Deuchmark (unit of German currency)</td>
</tr>
<tr>
<td>EIIP</td>
<td>Employment Intensive Investment Programme (ILO)</td>
</tr>
<tr>
<td>FIDIC</td>
<td>International Federation of Consulting Engineers</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GTZ</td>
<td>German Development Cooperation</td>
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<tr>
<td>HIV</td>
<td>Human Immuno-deficiency Virus</td>
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<tr>
<td>IFP</td>
<td>InFocus Programme (ILO)</td>
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<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
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<tr>
<td>IMT</td>
<td>Intermediate Means of Transport</td>
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<tr>
<td>IRAP</td>
<td>Integrated Rural Accessibility Planning</td>
</tr>
<tr>
<td>KfW</td>
<td>German Development Bank</td>
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<tr>
<td>LB</td>
<td>Labour-Based</td>
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<td>LBES</td>
<td>Labour-Based Equipment-Supported</td>
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<td>LBT</td>
<td>Labour-Based Technology</td>
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<tr>
<td>LCU</td>
<td>Labour Construction Unit, Lesotho</td>
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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>MRD</td>
<td>Ministry of Rural Development, Cambodia</td>
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<td>MWTC</td>
<td>Ministry of Works, Transport and Communication, Namibia</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>NORAD</td>
<td>Norwegian Agency for International Development</td>
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<td>PWP</td>
<td>Public Works Programme, Egypt</td>
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<td>SFD</td>
<td>Social Fund for Development, Egypt</td>
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<td>Sida</td>
<td>Swedish International Development Cooperation Agency</td>
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<tr>
<td>SMC</td>
<td>Small and Medium Contracting organisations</td>
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<tr>
<td>SPP</td>
<td>Sulphonated Petroleum Products</td>
</tr>
<tr>
<td>SWK</td>
<td>Scott Wilson Kirkpatrick, United Kingdom</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNHCR</td>
<td>United Nations High Commission for Refugees</td>
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<td>UNV</td>
<td>United Nations Volunteers</td>
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1 Introduction

1.1 Background to the Seminar

The Eighth Regional Seminar for Labour-based Practitioners took place over a five-day period, from 15 – 19 October 2000, in Cairo, Egypt. It was hosted and organised by The Egyptian Social Fund for Development (SFD), in collaboration with the ILO’s Advisory Support, Information Services, and Training Programme in Africa (ASIST). The theme of the seminar was The New Millennium – Challenges for Employment Intensive Investment.

ILO/ASIST has previously initiated seven successful regional seminars, where labour-based practitioners from Sub-Saharan Africa, and beyond, have met to review developments in labour-based technology. Previous seminars have been held in the following countries:

1st Mbeya, Tanzania, 26 – 28 February 1990
Topics covered: low cost structures, haulage, training, road maintenance, labour management

2nd Mohales Hoek, Lesotho, 2 – 6 March 1992
Topics covered: road maintenance, contracting, compacting, labour standards

3rd Harare, Zimbabwe, 27 September – 1 October 1993
Topics covered: tools and equipment, small-scale contractor development, involvement of women in labour-based roadworks, ASIST Technical Enquiry Service

4th Johannesburg, South Africa, 16 – 20 January 1995
Themes: urban infrastructure development, education and training

5th Accra, Ghana, 22 – 26 April 1996
Theme: labour-based contracting

6th Jinja, Uganda, 29 September – 3 October 1997
Theme: the right tool for the job – a review of tools and equipment for labour-based infrastructure works

7th Lusaka, Zambia, 3 – 7 May 1999
Theme: contracting in employment-intensive works
1.2 OUTCOMES FROM THE 7TH REGIONAL SEMINAR, LUSAKA

The 7th Regional Seminar in Lusaka focused on contracting in employment-intensive investments. However, the conclusions and recommendations drawn from four days of discussion covered important issues that went beyond this theme. Many of these issues were raised again during the Cairo Seminar, suggesting that considerable work was still needed to address key constraints into the new millennium. Issues raised included:

- Greater commitment from donors is required to reduce poverty; and partnerships will be required to develop comprehensive strategies to achieve this
- A conducive economic environment is required, supported by an appropriate legal framework
- Employment-intensive programmes should be based on priorities developed by communities
- NGOs were identified as a powerful pressure group, and improved communication with these organisations was recommended
- Local consultants and contractors are perceived to have no depth of experience, no technical support and no financial backing. Training and capacity building is therefore a specific need
- The resistance by technocrats and professional engineers to labour-based construction will need to be addressed at policy and training levels.

The findings of the Lusaka Seminar included points on:

- Investment levels and training programmes, where it was felt there was a need to make equipment available for contractors because no equipment is available locally. Finance for training and training materials was needed, and support for this should come from government, private sector, and beneficiaries. Universities, technical colleges, and tertiary training institutions should introduce labour-based construction into their curricula and courses
- New contractors often did not have access to credit and lease facilities with which to equip themselves
- Emerging contractors had difficulty dealing with tendering procedures, and would require assistance to compete successfully. It is difficult to estimate labour-based inputs for infrastructure works other than roads
- Contractual documents could be made more supportive of labour-based activities by the introduction of specific clauses
- Supportive national and regional policies and strategies need to be developed
- There should be access to basic social and economic services, and all stakeholders should be included in the planning process
Governments and client bodies should take responsibility for creating an enabling environment for small, emerging consultants.

Clients should be involved in contractor development and should guarantee work being made available.

Immediate and long-term interventions need to be identified to facilitate the entry of small contractors into the open market.

Independent labour-based contractor and consultant associations could be formed (or one association for all contractors and one association for all consultants), coordinated by a national council.

The status of informal settlements should be recognised.

Over the last seven seminars, much progress has been made in developing labour-based technology, but many of the same issues continue to be raised each time. With the coming of the new millennium and the eighth regional seminar, it is appropriate to consolidate the lessons learned over the last 30 years and to look to a future of new opportunities. There is a wider application for labour-based technology than in the roads sector, including community-managed infrastructure (including informal settlements), waste management, and water supply. There are also experiences from Asia to be considered. The eighth regional seminar provides labour-based practitioners with a timely forum to consider recurring issues, new opportunities, and to focus their energies during this new century.

1.3 STRUCTURE OF THE REPORT

The proceedings of the seminar are documented in two separate volumes:


This volume contains a summary of the papers presented in the plenary and parallel workshops, along with the facilitated discussions that followed. The report is structured in five Chapters:

**Chapter 1** gives the background to the seminar.

**Chapter 2** gives the seminar objectives, methodology, and a summary of the evaluation.

**Chapter 3** presents a summary of the plenary sessions of the Opening Day, and includes the opening session, scene-setting papers on the theme of the seminar, and the highlights of the ensuing discussions.

**Chapter 4** presents an overview of the parallel workshops, the group discussions highlights, and the cross-cutting issues discussed in plenary sessions.
Chapter 5 presents an overview of the field visits.

Chapter 6 presents a summary of the seminar as agreed by the delegates on Day 5.

The seminar programme, opening speeches, evaluation, and a list of delegates are provided in the annexes.

Volume I is provided free of charge to all registered seminar participants.


Volume II provides the full text of all papers that were available for distribution at the seminar. Volume II was distributed amongst the participants in Cairo. Extra copies can be ordered from ILO/ASIST or from the Employment Intensive Investment Branch of the ILO in Geneva (refer to the Copyright page for full details).
2 Seminar proceedings

2.1 Seminar objectives

The objectives of the seminar were:

- To provide a forum for practitioners in labour-based and employment-intensive infrastructure works to exchange experiences
- To update participants on employment intensive activities in Africa and Asia
- To specifically investigate the use of labour-based technology in the sectors of rural roads, rural transport, and rural and urban infrastructure
- To promote cost-effective and sound engineering practices for labour-based methods
- To promote the generation of local employment opportunities and minimise the foreign capital drain implicit in the use of equipment-intensive methods
- To identify how labour-based technology can be further promoted across the various sectors of infrastructure, both in urban and rural settings, and which key-issues should be tackled to pursue that process.

The first two objectives were common to all previous regional seminars.

2.2 Seminar structure

The seminar was held in the Cairo Sheraton Hotel, on the bank of the river Nile.

The seminar was structured for both plenary and parallel working group sessions to provide the opportunity for stakeholders in labour-based infrastructure works to share their experiences and to debate specific issues and problems related to the theme of the seminar. The outcomes of the plenary and working group discussion sessions were summarised in the form of recommendations and conclusions for agreement by delegates on the final day of the seminar.

It was felt that participants should be encouraged to explore the new areas of focus being covered during the eighth seminar. Therefore the group discussions were organised in a two-by-two format (two themes per session and two papers per theme) so that participants would have greater opportunity to take part in novel debate, rather than stay within their own disciplinary area.
Exhibition space was also available for use by participants, and included exhibitions of IMTs, and an ASIST book stand among others.

The seminar was hosted and organised by the SFD in Egypt, collaborating with the ILO/ASIST programme in Africa. A small group comprising Hany Attalla and Mohamed Aziz from SFD, and Jan Sakko and David Mason from ILO/ASIST, coordinated the seminar programme, the invitation of keynote speakers and paper presenters, and the appointment and briefing of the seminar moderators. The Public Works Programme (PWP) of SFD was responsible for the operational management and logistics of the seminar, while the administration was handled by the Department of International Cooperation of SFD. The UK-based firm Scott Wilson was appointed as principal moderator and teamed up with Chemonics from Egypt. Scott Wilson also reviewed the invited papers, in collaboration with ILO/ASIST and SFD.

The full programme for the seminar can be found in Annex 1.

2.2.1 Plenary Sessions

Plenary sessions were held on Days 1, 2, 4 and 5 of the seminar. On the opening day the plenary session comprised formal presentations and questions for clarification related to the seminar theme. Plenary sessions were also held after a series of up to three parallel workshop sessions on each subsequent day, meant to communicate key-issues arising from the parallel workshop sessions to all participants. In the final plenary session on the last seminar day conclusions and recommendations were drawn up in interaction with the audience, based upon the discussions of the previous day. During plenary sessions two methods of moderation were used:

**Summary presentation**

This describes the presentation of material from group sessions in a summary form by either a group rapporteur or by the moderator.

**Open market**

This describes the presentation of key issues from each group session in visual form, i.e. as flip charts, and displayed in a ‘market stall’ style. The paper presenter and moderator from each group session manned the ‘stall’ and participants were encouraged to walk around and discuss issues of interest.

Plenary sessions were organised in the following way:

**Day 1**

Plenary 1: Opening speeches and keynote address
Plenary 2: Summary presentations (Parallel Workshop 1)
Day 2
Plenary 3: Open Market (Parallel Workshops 2 – 4)
Plenary 4: Discussion on key points (Workshops 2 – 4)

Day 4
Plenary 5: Open Market (Parallel Workshops 5 – 7)
Plenary 6: Discussion on key points (Workshops 5 – 7)

Day 5
Plenary 7: Overall Conclusions
Plenary 8: Closing remarks.

2.2.2 Parallel Workshops
Parallel Workshops were used to allow for specific topics to be discussed in greater detail. The topics were:

Day 1
Parallel Workshop 1: Urban communities and socio-economic issues

Day 2
Parallel Workshop 2: Policy and rural issues
Parallel Workshop 3: Policy and implementation
Parallel Workshop 4: Capacity building and rural travel and transport

Day 4
Parallel Workshop 5: Rural issues and implementation
Parallel Workshop 6: Urban issues and capacity building
Parallel Workshop 7: Papers by invitation.

It was considered that by sharing two themes per workshop session, participants would be encouraged to participate in discussions on topics that may be new to them. In this way, considerable cross learning could be facilitated and participants could gain new perspectives on old problems.

Parallel workshop sessions began with the paper presentation, followed by a few minutes for questions of clarification. Participants were then asked to express the relevance of the paper to their own situation on cards. The presenter was then asked to bring two key issues for discussion, and participants were encouraged to add to these issues. In view of the time constraints, often only two to three issues were discussed. The output from the discussion was captured on flip charts that, during the ‘open market’ in the plenaries, were displayed for other participants to see. The charts and cards were
then incorporated into the ‘Summary of discussion’ of each parallel workshop session.

2.2.3 Field visit

The field visit was organised for Day 3 of the seminar, and was located around projects within the greater Cairo area. Further details relating to the site visits are given in Chapter 5.

2.3 Seminar participants

The seminar was attended by 173 registered delegates from stakeholders in the public and private sectors (in addition, there were 31 organisers). They represented a range of organisations such as government ministries, non-governmental organisations, donors, research organisations, universities, consultants, contractor organisations and suppliers. A total of 27 countries were represented: Botswana, Brazil, Cambodia, Egypt, Ethiopia, Ghana, Indonesia, Jordan, Kenya, Laos, Lesotho, Malawi, Mozambique, Namibia, Nepal, Norway, the Philippines, South Africa, Sudan, Sweden, Switzerland, Tanzania, Thailand, Uganda, United Kingdom, Zambia, and Zimbabwe.

Unlike the previous Regional Seminars held on the African continent, participants from Asia were more substantially represented and delegates participated in all parts of the seminar programme. Hence, the ASIST Regional Seminar is increasingly becoming an international global event.

2.4 The host

The Egyptian Social Fund for Development was the seminar host. The SFD was established in 1991 by presidential decree and began work in 1992. It was created in response to the economic reforms and structural adjustment programme adopted by the Egyptian Government and sponsored by the World Bank. The programmes developed by the SFD have proven to be an effective channel for providing social and economic infrastructure in unserved areas in need of development.

SFD runs five key programmes:
- Small Enterprise Development
- Community Development
- Public Works Programme
- Human Resource Development
- Institutional Development.
In addition to the Egyptian Government, SFD receives funds from 17 donors either through bilateral or multilateral agreements. SFD underwent two phases of funding and operation. The second phase is close to completion, and a bridging phase is about to start that will take them to 2003. It is intended that at the end of the bridging phase, SFD would have become the leading development organisation in this area with the primary goal to develop social capital.

SFD has achieved considerable success in bringing labour-based technology into mainstream infrastructure development, while contributing to the social and economic development of the country.

2.5 **THE MODERATORS**

Moderation of the seminar was carried out by representatives of Scott Wilson (SWK) and Chemonics Egypt, with SWK appointed as the principal moderator.

Scott Wilson is an independent consultancy firm based in the UK. They are ‘ Consultants in Sustainable Development’ and bring a multidisciplinary approach to infrastructure development in many countries, having worked for most major donors.

Chemonics Egypt have been heavily involved in the SFD Contractor Training Programme and other labour-based works within the SFD programmes. They have considerable experience of labour-based technology and have been at the forefront of bringing this approach into mainstream construction.

The Moderators were responsible for putting on and directing the show; managing the programme, players, and the audience; reporting on events, and producing the proceedings.

Before the seminar, Scott Wilson helped commission the keynote speaker, review papers, and collate them ready for distribution to participants. In consultation with ILO/ASIST and SFD, and with the support of Chemonics, the programme was drawn up.

Staff included:

- Peter Guthrie (Director, Scott Wilson) – Chief Moderator
- Mohamed H. Ashmawi (Executive Vice President, Chemonics) – Assistant Chief Moderator
- Mahmoud Khalid (Chemonics) – Assistant Moderator and Local Coordinator
- Moustafa Semeida (Chemonics) – Assistant Moderator
- Mohamed El Shorbagy (Chemonics) – Assistant Moderator
- Catherine Allen (Scott Wilson) – Moderating Coordinator
- Robert Geddes and Hamish Goldie-Scott (Scott Wilson) – Paper Reviewers.
During the seminar, Peter Guthrie and Mohamed Ashmawi moderated the plenary sessions and managed the group sessions, with the help of Mahmoud Khalid and Catherine Allen. Group sessions were moderated by the assistant moderators, supported by other colleagues and volunteers from the participants.

2.6 EVALUATION

The seminar was evaluated by means of a written questionnaire (see Annex 3) which was completed by 117 delegates. The questionnaire was completed as part of the plenary session on the final day.

In general, the participants felt that the seminar organisation and venue were good. While facilities were highly rated, some participants felt that further secretarial support services, such as access to email, would have been useful. It should be noted that business support services were available in the Business Centre of the Sheraton Hotel.

The relevance of papers to the seminar theme was rated as good, with a further request for abstracts to be available. The presentations were considered, on the whole, to be good with some participants experiencing presentations that might have been improved by simplification. The moderation of group sessions was seen as being fair to good, but most participants felt they wanted more time to discuss topics. The participants also said they would have preferred to receive a copy of the papers before the seminar started.

The field trip was well received and most participants came away with a favourable impression of labour-based works in greater Cairo. However, time to discuss the field trip would have been preferred. A number of the participants characterised the works they had seen as ‘labour-intensive,’ meaning that there was a heavy emphasis on manual labour (managed by labour-only contractors), as compared with the more sophisticated ‘labour-based’ project approaches whereby a mix of small equipment, hand tools, and manual-labour is being used.

The complete analysis of the questionnaire, as well as relevant comments provided by respondents, are shown in Annex 4.

2.7 ACKNOWLEDGEMENTS

Special thanks are extended to the Government of Egypt, and specifically to the Egyptian Social Fund for Development and its Public Works Programme for their role in organising and coordinating the Seminar.

Special thanks are also given to Hany Attalla of SFD for initiating Egypt’s offer to be the host, and for organising things behind the scenes.
Thanks are extended to the staff of ILO/ASIST, Harare and Nairobi offices, for their untiring support and help during the organisation of this Seminar. We should also like to thank the moderators, Scott Wilson, and Chemonics Egypt for their hard work during the Seminar in facilitating discussions between so many delegates.

We also extend our thanks to Geoff Edmonds for giving the keynote address.

Last but not least, thanks are given to all paper presenters and participants for their contributions and attendance.
3 The new millennium: Challenges for employment intensive investments

On Day 1, the opening plenary session was intended to welcome participants to the Eighth Regional Seminar for Labour-based Practitioners, to introduce the host country, and to highlight the key issues facing labour-based practitioners in the new millennium.

3.1 The Egyptian Experience

3.1.1 Opening address by Dr Mokhles Abou-Seida, Director General of Public Works Programme, Social Fund for Development

The Public Works Programme, one of the Social Fund for Development’s core programmes, was the first to introduce the labour-based approach to implementation that included social, economic and productive community-based infrastructure development projects. Capacity building and training of beneficiaries, civil societies, and official staff in the line ministries is an important part of the project cycle.

One of the approaches to ensure quality of work and job creation is to train qualified contractors to start their business in the construction, operation, and maintenance of small-sized infrastructure projects in villages and towns. A labour-based contractor training programme was initiated and the lessons learned during the implementation of such a programme will be presented during the seminar sessions.

For labour-based technology to be successful in future:

- We need to bring labour-based employment within the main economy of the community and not as marginal employment outside the normal economy
- We need to explore ways and approaches to maximise the social and economic benefits associated with labour-based projects as well as the mitigation measures to be adopted
- We need to promote cost-effective labour-based methods that are also sound engineering, whilst generating employment opportunities and minimising the foreign capital drain implicit in the use of equipment-intensive methods.

I hope that during this seminar, we will discuss these issues and find ways to tackle them. Thank you to ASIST of ILO and SFD training staff for making this seminar possible.
3.1.2 Address by Dr Hussein El Gammal, Managing Director, Social Fund for Development

The presenter introduced the Egyptian Social Fund for Development, the host of the seminar, and its involvement in labour-based works in Egypt. The SFD was established in 1991 by presidential decree. It has proven to be an efficient tool for providing social and economic infrastructure in unserved areas in need of development. The goal of SFD was to act as a social safety net to protect vulnerable groups from the effects of economic reform and structural adjustment, started in 1990, and to improve their positive impact.

Funding is obtained from the Egyptian Government and 17 donors through bilateral or multilateral agreements. It is intended that SFD will have the primary goal to develop social capital, through:

- economic empowerment
- credit delivery and enterprise development
- development of human resources
- skills upgrading
- community organisations
- creation of an enabling environment, through infrastructure provision and technology transfer, and
- provision of a social safety net through targeting the poor and misplaced.

The Public Works Programme funds social, economic, and productive infrastructure projects mostly in rural areas. The majority of interventions include the provision of potable water, roads, and wastewater facilities, and environmental and other public works.

The aims of the programmes are to ensure sustainability. This is to be achieved by upgrading the capabilities of the beneficiaries and enhancing their awareness. Successful public works programmes require careful management and monitoring. The Public Works Programme sees the need to establish efficient systems to achieve this. The end result should be a pool of new contractors who will execute public works projects in villages and expand labour-based methods to work in line ministries and governments, as well as the private sector.

The gains achieved by the adoption of labour-based methods are numerous and have benefited the cause of employment generation in Egypt. They have helped to achieve:

- enhanced project sustainability due to local ownership
- development of community capacity to execute projects thorough local contractors
- enhancement of skills leading to greater employment potential after project withdrawal
- creation of a macro-economic cycle in communities
• generation of a positive work mentality amongst youth and other participants in the projects
• minimum emission from fuel consumption by using labour rather than equipment
• allowing small contractors to conduct business without large capital investments in equipment
• creation of connectivity of local communities to the job market
• enhancement of livelihoods by infrastructure development
• creation of a form of central alliance of local communities to constructing rural infrastructure.

3.2 INTERNATIONAL TRENDS

3.2.1 Opening remarks by Ms Loretta De Luca, the Acting Director of the ILO Area Office, and of the Multidisciplinary Advisory Team for Northern Africa, Cairo, Egypt

The Director-General of the ILO has made a worldwide call to promote and contribute to ‘Decent Work’. Decent employment — that is productive, adequately remunerated, and safe work — is now widely recognised as the key to a healthy, balanced and sustainable development. It is also widely recognised that economic growth is necessary to create employment opportunities, but it is by no means sufficient. Jobless growth is a frequent phenomenon worldwide and one that is on the increase.

The potential economic population is projected to grow faster than the rate of job creation. This is one of the reasons why the employment-intensity of growth needs to be increased. Employment should become a more integral part of economic, financial, and social policies, and urgent and coordinated action is needed.

• In 1995 the UN World Summit for Social Development called for putting the promotion of employment at the centre of government strategies. Last June, a special session of the UN World Assembly entitled ‘World Summit for Social Development and Beyond’ stressed the need to elaborate a coherent and coordinated strategy on employment.

• The G5 Summit, held in Cairo last June, reiterated the urgency for a comprehensive employment strategy so as to stimulate employment creation in all developing countries.

• There are signs that the World Bank and the International Monetary Fund have become more sensitive to the shadow side of globalisation, considering how poverty alleviation and employment creation can be better integrated into economic policies and reform. The theme for their last meeting was ‘Making the Global Economy Work for Everyone’.
However, we should conclude that the global economy has performed poorly in meeting people’s expectations of employment. To address this issue, the ILO continues to facilitate the exchange of best practices in employment generation, and to develop comprehensive employment strategies, which are particularly important for developing countries. A World Employment Forum in November 2001 will discuss this issue in more detail. A special ILO initiative on the African continent called the ‘Jobs for Africa’ Programme, which has a component in Egypt, seeks to re-orient the pattern of investments towards more employment-intensive activities and technologies.

In conclusion, the opportunities for employment-intensive work in developing countries are huge. The potential benefits of employment-intensive technology include providing cost-effective and technically sound infrastructure works, and the development of small and medium enterprises, an entrepreneurship mentality, and community self-reliance. Moreover, they limit the need to import expensive machinery and supplies.

These opportunities still need to receive broader recognition. Ideally we should look to achieve a mainstreaming of employment-intensive goals into the work of sectoral ministries and core economic policies. This is a challenge that calls for solid arguments, proofs, and strong partnerships at all levels. We look forward to this seminar to provide us with the invaluable experience that all of you bring from your own countries.

3.2.2 Opening presentation by Ms Jane Tournée, Director of the ILO/ASIST Programme in Africa, Harare, Zimbabwe

The Director introduced the ASIST Programme, which stands for Advisory Support, Information Services, and Training. The programme gives support in:
- policy development
- planning
- technical issues
- project and programme design
- coordination, monitoring and evaluation
- reviews of urban and rural labour-based programmes
- access and rural employment programmes, and
- integrated rural accessibility planning.

This is supported by an information service that synthesises published and unpublished documents, and operates an enquiry service that is open to everyone. ASIST also provides training support through international and national training courses, and it helps training and educational institutions, such as universities, in curriculum development.
The challenges for employment-intensive investments in the new millennium are many, but let us start with a most positive fact:

“There is conclusive evidence that labour-based methods can be up to 30% more cost-effective than equipment-based methods. They can reduce foreign exchange requirements by 50–60% and create 2–4 times the employment for the same level of investment. In addition to these benefits, labour-based technology can produce facilities that are technically sound, of good quality, and comprise well-engineered infrastructure."

There are still many constraints to be addressed, before labour-based methods are fully mainstreamed. Different levels of government do not have the capacity to meet these challenges. There are financial and technical constraints to their responding to global trends. There appears to be limited resources at crucial levels of government. Inappropriate local politics also result in inappropriate distribution of these resources. In many areas there is a total absence of effective local governance, absence of appropriate technical standards, and inappropriate contractual arrangements.

We need responsive local level planning, and this demands appropriate tools, reasonable funding, and good governance. ILO/ASIST looks together with other partners at the development of planning tools that will assist with local level planning decisions. Capacity building and awareness campaigns will support this process.

Our focus is the optimum involvement of (local) labour in investment processes, which means allocating as much work as is feasible to labour, as long as it makes economic and technical sense to do so. This concept of Labour-Based Technology has now been applied for over a few decades and the question arises: Can labour-based approaches become a part of mainstream economic development? There is currently no consistent means of measuring the contribution of labour-based works to GDP, so there is a need to support studies and develop tools into this direction. Labour-based practices must become more and more part of the formal sector. The facts that speak in favour of these methods are that money and value are being retained in local economies, apart from the employment that is being directly created. Are labour-based works financially and economically viable? There is conclusive evidence (e.g. studies from Zimbabwe, Lesotho, South Africa, Ghana, Madagascar, Uganda) of its competitiveness, but some people remain unconvinced.

Who influences technology choice? Is it the client, the Government, or the private sector? We need to ensure that, whoever is choosing technology, the needs of all stakeholders are being met. It is possible that the private sector is being forced into technology choices by Government legislation, rather than selecting the technology approach themselves. Special efforts to stimulate the private sector using viable locally manufactured technology might be necessary.
Another important issue in Ms Tournée’s speech was the capacity and capability of small contractors. This is a subject that has extensively been explored during previous Regional Seminars. The conducive contracting environment, including appropriate contracting systems and procedures, and access to markets for small contractors, are the ‘hot issues’ regarding the development of contracting capacity in a number of African countries. It is beyond doubt that this should be established in a real market environment where new private partners can learn to survive. A coordinated effort is needed to provide the financial and training packages necessary to get small contractors into the market place, although financial assistance is not necessarily the most needed type of action. The most important needs in community-based contracting, a form of procurement that has been on the rise over the last few years, is technical training, and recognition of community capacities by the client.

The end goal is not just the creation of jobs, but also the creation of jobs of acceptable quality. Workers in labour-based programmes need decent working conditions. Establishing sound labour policies and practices go hand-in-hand with good productivity. Basic rights and conditions at the work place are required, such as a minimum age for undertaking work, freedom from forced labour, minimum or collectively negotiated wage levels, equal treatment, social protection, proper rest and sick leave provisions, and safety and health standards being observed on sites. The ILO is increasingly promoting such practices with its partners, e.g. through developing guides and tools, and the organisation of tri-partite workshops. The social dialogue on decent work must be pursued, and as a future target, workers’ and employers’ organisations must be increasingly involved in this debate.

The recommendations in all these areas can be summarised in three steps. First, planners, decision-makers, and investors have to be made aware of the options that they have. This includes looking at alternative solutions. Secondly, once actors are aware of the options for the optimisation of local resources, they need to believe in the appropriateness and effectiveness of these options. This requires hard evidence and successful project examples. Lastly, where people are convinced of the use of employment-intensive methods, a degree of commitment is required, in terms of allocated investment funds and programmes.
3.3  **FACING THE FUTURE, BUILDING ON THE PAST**

3.3.1  **Keynote speech by Geoff Edmonds, Director of IT Transport, United Kingdom (currently Programme Director of the ILO/ASIST Programme in the Asia-Pacific region, Bangkok, Thailand)**

The presentation aimed to look back at the success of labour-based methods and the challenges that must be overcome before they can truly be considered a mainstream approach.

There are several examples of the successful use of labour-based methods, including:

- the Minor Roads, and Roads 2000 Programmes in Kenya
- the Labour Construction Unit in Lesotho
- the Feeder Roads Programme in Ghana
- the Social Fund for Development programme in Egypt.

However, most labour-based projects do not survive the withdrawal of donor funding. In comparison to 25 years ago, labour-based methods are now considered mainstream by many, but this can largely be attributed to donor insistence. Very few governments outside South Asia and China have implemented labour-based programmes without assistance. Engineers still do not see labour-based methods as one of the range of techniques at their disposal.

There are many arguments in favour of labour-based methods:

- three times as much direct employment creation compared to equipment-based methods
- much more indirect employment opportunities
- savings in foreign exchange
- often cheaper than equipment-based
- technically high standard of construction.

So why, if labour-based methods are so beneficial, are they not more generally adopted? This is the challenge facing employment intensive investments.

Many arguments have been put forward to explain this phenomenon, e.g. engineers are not trained to use this approach, there is a lack of political support, or the technology is perceived as being second rate.

People will adopt something new if they can see benefits to themselves. Many of the arguments put forward in favour of labour-based methods yield long-term and rather intangible benefits. Direct benefits would be to the workers on site, but these are the people with very little voice in society.
All these issues are surmountable, given the obvious benefits that labour-based methods appear to have. Therefore, a fresh approach might identify where our previous assumptions have been incorrect. It is necessary to look in a more general way to the framework within which rural and urban infrastructure is implemented.

Key elements in the framework are:
- institutions
- decentralisation
- community involvement
- donors.

Institutions such as government ministries tend to concentrate on one sector of responsibility. Most labour-based programmes have involved the roads sector. The concerned ministry use resources primarily on the main road network, viewing rural roads as less worthy of attention. Experience suggests that rural road programmes work most efficiently when they are decentralised. Targeted donor funding, however, means that ministries are less likely to devolve responsibility to another agency.

Decentralisation is a major policy theme for many governments. In practice it often means devolving responsibility without authority and often without financial support. Despite these constraints, local authorities are aware that it is in their interest to use local resources in an effort to conserve funds. In democratic societies, this can also ensure popularity with the local voters. The rural population become closer to the decision making bodies through decentralisation, and can have a greater say in where and how labour-based works take place. Accessibility planning is a useful tool in this situation. It empowers local planners and can be carried out with the participation of the local population.

Community involvement has become increasingly important, with a progressive policy shift towards developing people’s assets and providing responsive institutional mechanisms such that people can take advantage of their own resources. More often, this translates to the provision of resources and labour to construct or maintain basic infrastructure. Community maintenance has been shown to work with essential services such as water supply, but there are very few examples where communities have been prepared to maintain roads. The state often does not have, nor is likely to have, funds for local road maintenance.

Donors provide up to 80% of the development budget in many countries, and this is likely to continue for many years to come. While they may work towards the overall goals of the national government, donors also have their own agenda and timeframes. Therefore, donors must accept some responsibility for the development focus. It is often
not feasible to implement a sustainable process for management of infrastructure within the 3–4 year funding time scale of most projects.

To conclude, labour-based methods are both accepted and acceptable, but still not mainstreamed. This is unlikely to be due to the shortcomings of the technology itself, as there is a mountain of published material on the technical and socio-economic aspects of labour-based methods. It is more likely to be because we have not given the environment (or context) into which labour-based methods are introduced sufficient consideration.

Labour-based methods are most likely to be accepted by those who directly benefit from them. This is unlikely to be central ministries and agencies. Decentralised programme financing, management, and implementation provides the best potential for labour-based methods. We must focus on these decentralised agencies and understand the planning process, their management structure, and financial administration. It is important that donors see our involvement in this way, and we must look in detail at the issues of community ownership, responsibility, and authority.

After Geoff Edmonds had finished, participants were asked to voice any questions they might have on the topic of the speech. It was generally felt that Geoff had covered the issues very clearly and no questions were forthcoming.

3.4 CONCLUSIONS FROM THE OPENING DAY

A major challenge facing governments today is the result of population increase, which is growing faster than jobs can be created. Employment-intensive approaches can benefit from this by offering an opportunity to provide employment, while still producing works to a high standard. Ideally we should look to achieve a mainstreaming of employment-intensive goals into the work of sectoral ministries and core economic policies.

Capacity needs to be built here since in many areas there is a total absence of effective local governance, absence of appropriate technical standards, and inappropriate contractual arrangements. Establishing sound labour policies and practices go hand-in-hand with good productivity.

We need responsive local level planning and this demands appropriate tools, reasonable funding, and good governance. We need to ensure that whoever is choosing technology, the needs of all stakeholders are being met. Donors must accept some responsibility for the development focus.

There is a need to maximise the social and economic benefits associated with labour-based projects, particularly as donor and
government funding is becoming increasingly sensitive to the wider needs of stakeholders and beneficiaries.

Labour-based employment should be brought within the main economy of the community. Emphasis should be given on training qualified contractors in labour-based methods so that they can operate their businesses at village and town level.

There is currently no consistent means of measuring the contribution of labour-based works to GDP, so there is a need to support studies and develop tools into this direction.

Summary notes from the various speeches and presentations:
• Labour-based methods need to be mainstreamed into a range of infrastructure provisions, and into the wider economy
• Hence, we should look to achieve a mainstreaming of employment-intensive goals into the work of sectoral ministries and core economic policies.
• There is a need to build the capacity of line ministries, and of small private contractors
• Policies and political support are needed to aid the development of employment-intensive works
• Good practice, recognised standards, and appropriate procedures are also necessary
• The implications of decentralisation must be considered
• Socio-economic benefits need greater attention and a consistent means of evaluation
• The community should participate in the planning and implementation of labour-based works.
4 Summary of parallel workshops

4.1 Workshop 1: Urban Communities and Socio-Economic Issues

4.1.1 Urban Communities

Group 1

Paper: Urban poverty and employment promotion through community infrastructure upgrading — the case of Hanna Nassif and Tabata Projects in Dar es Salaam

Country: Tanzania

Author: Dr Wilbard J Kombe, University College of Lands and Architectural Studies

Moderator/Rapporteur: Mohamed El Shorbagy/Mohamed H Ashmawi

The presentation introduced the problems experienced in Sub-Saharan Africa where the rate of urbanisation continues to increase. There has been massive investment in rural development programmes, birth control campaigns, and repatriation of unemployed or underemployed urban immigrants in an attempt to reduce the urban population.

People migrate to urban areas seeking work. At the same time, urban household incomes are declining. People are forced to live in rapidly growing informal settlements. The state and local government authorities do not have the resources to provide or improve basic infrastructure in these areas, and the rising levels of urban poverty go unchecked.

The construction of new urban infrastructure and upgrading of existing resources using labour-based methods can provide employment opportunities for otherwise under or unemployed people. However, there are many issues that need to be addressed before projects like this can contribute effectively to poverty alleviation in urban areas. The presentation introduced two community infrastructure improvement projects in Dar es Salaam: Hanna Nassif and Tabata community labour-based infrastructure improvement projects. One was successful and the other was experiencing problems.

In 1994, the community-based, labour-intensive infrastructure improvement approach started as a pilot project in Hanna Nassif, Dar es Salaam. One of the main objectives of the project was to create
employment and generate income using labour-based construction methods and community contracts in partnership with local communities.

The Hanna Nassif Project exhibits important features emanating from the very conception and planning of the project. From the outset, the project was initiated with full community participation and with local institution building in mind, which seems to have enhanced linkages with the actors at the grassroots.

The Tabata Community Infrastructure Project comprises improvement of the feeder roads in the area. It was a local institution that initiated the project. However, it was not involved in the negotiations and other critical decision making stages that preceded the selection and appointment of the contractor. Even though two community members, including a representative of this local institution, were members of the Project Steering Committee, their ability to influence decision-making was insignificant.

Problems were experienced in persuading the contractor to adopt labour-based methods. The contractor saw these as being sub-standard in comparison with equipment-based methods. The project has been unsuccessful in mobilising the required local community contribution. So far only about 30 per cent of the contribution has been collected. On the whole, project implementation has not been based on organised participation.

Overall, it was felt that labour-based infrastructure improvement using community contracts could generate more opportunities for employment than private contracts. Most importantly, community-based contracts seem to be more effective in deploying human labour without gender discrimination.

Also:

- Community contracts are cheaper than private contracts. Quality and timeliness are comparable
- Improvement of basic infrastructure, whether undertaken through a private or a community contract, is an expensive undertaking. It requires combined efforts involving the state, donors, communities and the private sector
- Preconceived opinions about the quality of and outputs from labour-based works can be counter-productive
- An effective mechanism for mobilising financial resources from users for undertaking routine maintenance is still to be developed. Maintenance remains an unresolved problem.

There is a need to create a good policy environment that supports the use of labour-based technology in community infrastructure improvement projects. This will need to go hand-in-hand with routine training of local government personnel. Finally it shows how
important community organisations and micro-credit are in supporting the adoption of labour-based approaches and alleviating urban poverty.

Summary of discussion

From the presentation, participants identified a number of issues that they saw as being crucial to urban infrastructure projects:

- project identification
- participation
- ownership
- political will
- contracting
- implementation
- contributions
- sustainability.

There was much crossover between issues but the discussion arrived at the following observations:

Project identification

Participants expressed concerns regarding projects being identified by the community. Labour-based projects are aimed at poor communities, many of whom may not have a coherent ‘voice’ or support system to submit project proposals. They felt there was a need to:

- Build the capacity of local government so that it can be involved in this process, in a more participatory manner
- Develop an effective set of criteria that would aid project identification and prioritisation under these conditions, e.g. presence/absence of committed local stakeholders, best value in terms of cost per household served.

Participation

The observation from Tabata demonstrates the importance of community involvement to the sustainability of a project. The community should be allowed to decide what they want and if they want to be involved in the whole process. It would help considerably if the project beneficiaries could be considered primary experts. It was felt that:

- Project committees should be formed at the sub-district level or below, involving members of the community and other stakeholders selected on their capabilities
- Guidelines should be drawn up to outline acceptable levels of community participation during project identification, implementation and maintenance.
Ownership

One participant asked, “How do we determine post-construction ownership and management of assets?” This was seen as a key consideration to the sustainability of any urban infrastructure project.

Participants felt that sustainability and participation were inextricably linked to a feeling of ownership amongst project stakeholders. As the role of the community is often informal, there needs to be a legal framework to support an ownership system in the form of community contracts. This requires strong political will to provide an enabling environment that will motivate and encourage communities to take on responsibility. For example, it was felt that some roads could be transferred to community ownership and maintenance responsibility could also be devolved. It was an issue that needed to be addressed at the very beginning of any project implementation.

The introduction of a tax could provide funds but what technology and skills would be required locally for effective implementation and maintenance, e.g. management skills, technical skills, labour availability, materials? Overall, it was felt that if people want ‘it’ (infrastructure), they would look after ‘it’ provided appropriate skills and an enabling environment could be created.

Contracting

Participants saw contracting as a key issue. Political will and capacity was needed to support a favourable legislative environment. Ideally, it was felt that the local community should be contracted to undertake all infrastructure work for which they have the skills. However, existing contractors often do not understand the dynamics of labour-based methods. It would be necessary to train private labour-based contractors, who would then employ the community, thus ensuring both quality and socio-economic benefits. Project or sub-district committees could also be trained in community contracting procedures.

Implementation

One drawback to community contracting and implementation was the difficulty in ensuring replicability. Community dynamics would mean that what worked in one community may not work elsewhere. Some participants had experienced difficulties where payment was made in advance for community-based projects. There were also constraints imposed by the level of complexity of works, e.g. rural roads compared to building bridges.

The group felt that implementation could be carried out using a mixture of community contracting and private contractors.

Government could carry out supervision, with the aid of specific consultants. However, how do you motivate low paid civil servants to
reach a high standard of supervision of highly motivated contractors looking to save money? There were no suggestions for this.

**Contributions**

Some participants questioned why poor communities were always asked to contribute to projects. Although there was agreement that contributions did enhance ownership, people felt that while communities could often contribute local materials and labour rather than money, they were not well endowed with resources. Consideration should also be given to the fact that many people may not be able to contribute time for unwaged labour even if the long-term benefits were tangible. Participants also felt that if communities were to be asked to contribute, this should also mean involvement in selection, planning, design, implementation, and maintenance.

People were not sure if contributions should be mandatory or voluntary. Certainly, there were implications to the time frame of projects, *e.g.* delayed payment could delay implementation. Non-contribution should have a penalty, but was it ethical to deny non-contributors access to basic infrastructure resources?

**Group 2**

**Paper:** Case study of Manshiet Nasser — Labour intensive provision of basic infrastructure and participatory upgrading of a dense low-income urban settlement

**Country:** Egypt

**Authors:** Keith Brooke (Dorsch Consult) and David Sims (BUS Consultants)

**Moderator:** Moustafa Semeida

The presentation was about an ongoing project in Manshiet Nasser. The project is a collaboration between the Cairo Governorate and the German Government, through German aid organisations GTZ and KfW. The GTZ component covers ‘soft’ engineering (town planning), whilst the KfW component covers ‘hard’ engineering aspects. The implementation phase began in January 1999 and it is being executed by the District of Manshiet Nasser.

The district has a population of over 30,000 people, living in high-density residential areas with little or no basic services. The aim of the project is to improve the livelihood of the inhabitants through integrated urban re-planning.
Soft engineering aspects include:
- planning
- street widening
- secure tenure
- social development
- participation of inhabitants.

A number of measures are underway or planned which will have the long-term effect of improving the social, economic, and housing conditions. The Government will grant land ownership against nominal payments. Owners will then be encouraged to improve or reconstruct housing according to national building regulations. The project will also provide social centres and a workshop cluster. Inhabitants are forming community organisations that can represent their interests in administrative decisions.

The only truly adequate sanitation in densely populated areas is conventional piped sewerage and water distribution systems. This cannot be implemented on an individual basis, and it requires collective action.

An Egyptian contractor is implementing services under a conventional construction contract. Labour-intensive methods are encouraged and 80% of the labour comes from within the district.

Through collective effort, the project reinforces local initiatives and encourages development of the area to acceptable standards. It is hoped that, through a sense of belonging, this will help integrate these people into Cairo.

**Summary of discussion**

After the presentation of the paper, participants identified the following key issues:
- contractors selection criteria
- community participation
- cost recovery/affordability
- linkage between soft and hard engineering.

**Contractor selection criteria**

Participants felt that without support for labour-based methods within contract documentation, emerging contractors would be marginalised during the selection process. Other contractors needed to be encouraged to use this technology. It was felt that labour-based technology should be specified in the tender documents as well. Selection of contractors should be made against the need to include
labour-based approaches, and should be adjudicated by an independent adviser.

Community participation and cost recovery

All participants agreed that community participation was important to the success of a project. By involving members of the community from the very beginning, a sense of ownership is established and that would contribute to the sustainability of the project. This is particularly important for services such as sanitation. Another participant raised the issue of women's involvement in the project. There were important cultural considerations to bear in mind.

There was some discussion about community contributions to the development of the infrastructure. Some people suggested that a contribution of 10% in cash or kind would be appropriate, while others suggested up to 30%. The latter was generally felt to be too high for poor people in high-density urban communities, many of whom would be unemployed and unable to contribute either time or money.

Participants felt that the key issue was that of maintaining infrastructure once it had been constructed. Capacity building would be required within the community, and some form of supervision would be necessary. It was suggested that implementation by private contractor might provide the solution.

It was suggested that a National Income Generation Programme could collect funds through taxes or charges to infrastructure users. This money could then be distributed for works that were most needed. It was felt that some consideration would have to be given to the better-off people in the community subsidising the poorer, high-density settlement areas. But, there might be some resentment if informal settlements were targeted too heavily by such funds.

4.1.2 Socio-economic Issues

Group 3

Paper: Transport and sustainable rural livelihoods in Zambia: A case study

Country: Zambia

Author: Annabel Davis, Transport Research Laboratory

Moderator/Rapporteur: Hanan Hussein/Rob Geddes

In pursuing the agricultural sector as the ‘main engine of growth’, structural adjustment has marginalised non-commercial agricultural. Subsidies for agricultural inputs have been lost. Small-scale farmers no longer have access to fertiliser, seed, and pesticides, which are vital
for maize production. The rural poor have resorted to growing more traditional crops, including sorghum and finger millet. The worst affected are those in remote areas who do not have many alternative livelihood strategies.

The constraints on rural livelihoods are caused by a combination of inadequate infrastructure, poor public transport provision, and the unaffordable tariffs of private transporters. In addition, the poor state of the roads combined with inadequate transport services prevents many people attending health clinics and schools. It also restricts the marketing possibilities of many farmers. Their potential profit is partly ‘absorbed’ by middlemen.

This case study is based on research undertaken for DfID. The project aims to produce a ‘toolkit’ to identify transport constraints and assess baseline requirements for improved infrastructure, transport services, extension services, and village level transport. It will also address policy issues for improved rural accessibility.

In a recent participatory study in the Northern and Copperbelt Provinces of Zambia, transport emerged as a serious concern for food security, agricultural marketing, and ability to pay for health and education. We focused on the interaction of transport on livelihood assets.

Summary of discussion

Discussion centred on DfID’s framework for understanding sustainable livelihoods in the context of community development. It takes a holistic view. The role of different players to resolve livelihood constraints was also discussed. This included government, the communities themselves, and the private sector. The extent to which these stakeholders can become involved depended on their circumstances, but all should be involved in some way.

The participants were concerned that the responsibilities and roles of government, the private sector, and the community should be clear from the outset for such projects. These responsibilities must also be transparent to other stakeholders. It is important that the community should be encouraged to take the initiative. It was observed that without becoming involved, the community could not hope to strike a compromise and ensure that services remained affordable.

It was felt that the government had a responsibility to provide facilities, while the private sector and communities could be instrumental in sustaining the project. Although the bulk of funds would come from the government, communities should share some of the cost, either by providing labour or money. The government had the bulk of resources and the organisational structure to coordinate partnerships between all stakeholders. There was also scope to start
community-based co-operative organisations that could be run as private firms.

Some participants felt that the responsibility for transport provision in rural areas should rest with the private sector. The group drew attention to the limited financial resources available to rural communities. An unregulated private sector might make fares, tolls, or other revenue collection methods unsustainable by pricing them too high. It is important, therefore, that government policies give direction to rural transport and access planning within a broader framework. The degree of decentralisation and sector organisation will affect the way in which the government, as a stakeholder, is able to contribute meaningfully to a people-centred approach.

There was recognition that communities understand their constraints more clearly than we give them credit for. Addressing these constraints is not necessarily the responsibility of highly organised institutions, such as government. Some are within the scope of communities themselves, e.g. social cohesion.

Overall, the group found it difficult to understand DfID’s sustainable livelihoods approach and were unable to decide whether it was useful. However, some participants in this group felt the ‘livelihoods approach’ was valuable. They recognised that it was a new concept and that more time would be needed to understand its applications more fully.

**Group 4**

*Paper: Inclusion of welfare distribution objectives in the economic evaluation and choice of urban transport*

*Country: South Africa*

*Author: Professor W J Pienaar, University of Stellenbosch*

*Moderator: Mahmoud Khalid*

The presentation showed how valuable a social evaluation can be in decision making for urban transport projects. The equitable distribution of income benefits should be a key consideration of projects.

Economic evaluation is the conceptual procedure to determine the viability of investment projects by considering all benefits and costs regardless of who receives them. A benefit is regarded as any gain from the operation and use of a facility, and a cost is any loss associated with the investment needed to establish a facility.

Investment in urban transport facilities usually involves large amounts of money. In order that economically justified projects are
selected, alternatives must be assessed on the basis of their effectiveness and efficiency.

Any urban transport policy should strive towards three ultimate goals. It should:

• enhance the quality of urban life through adequate, effective and safe transport
• support and promote other urban functions and policies. Transport is a means to an end and not an end in itself. It is a function of other human activities. Therefore it has a derived demand. It may be argued that transport is a prerequisite to wealth creation
• contribute towards a desired mixture of equity (through a redistribution of accessibility and mobility opportunities) and efficiency (e.g. reasonable costs, appropriate technology and no unnecessary duplication of services).

The creation and use of urban transport facilities and services, such as passenger transport terminals and transfer facilities, especially in lower-income areas, can lead to a more equitable distribution of welfare and income. The Gini coefficient, a known indication of income inequality, can be a first suitable indicator. (The Gini coefficient varies in value from one in the case of total inequality to zero in the case of total equality). However, making comparisons of income inequality between different areas and countries might be more difficult. Data sources may be inaccurate and definitions of what constitutes income are very different.

It is advisable that all transport infrastructure projects should also be evaluated on the basis of a social analysis. This will show the effect of projects on a region within the country or a province, such as a metropolitan area or sub-regions.

The purpose of any economic evaluation should be, through the transport planning process:

• to ensure the optimal allocation of scarce resources; or
• to bring about the maximum possible equality of welfare benefits.

Conventional economic evaluation practices usually considered that all benefits and costs related to a project are of the same weight, regardless of the level of income and consumption of groups affected by it. In this process, cost-benefit analysis is done on the basis of potential compensation, i.e. those who gain will compensate those who suffer. But normally, compensation is rarely paid, particularly where profits are paramount in service provision.

As poverty relief is one of the most important economic development objectives for most countries, alternative evaluation techniques should be considered. One alternative method includes the use of differential or variable discount rates (specific discounting rates according to
specific levels of income). It means that projects can be chosen for their real contribution to social welfare.

Social evaluation can run parallel to economic evaluation, and the findings complement each other.

**Summary of discussion**

The presentation raised a number of key issues that were identified by the participants:

- the need to establish accepted socio-economic benchmarks
- the need for reliable data
- the relevance to the urban environment
- the conflict between rural welfare and economic considerations
- sources of funding.

As this was a new subject to most participants, clarification was sought on a number of issues:

**What is the Gini coefficient?** The Gini coefficient is a well-known indication of income inequality, which varies in value from one in the case of total inequality, to zero in the case of total equality. The Gini coefficient makes use of the Lorenz curve. The Lorenz curve is constructed by plotting the numbers of income recipients, starting with the poorest, on the horizontal axis in cumulative percentages and with cumulative personal income percentages on the vertical axis. The Gini coefficient is the ratio of the area between the diagonal of a triangle and the Lorenz curve divided by the total area for the triangle in which the curve lies. The lower the Gini coefficient, the better (closer to equity) the income distribution.

**Why use regions to provide an equity value instead of number of people?** One should try to capture the experience of potential users, and measuring their wealth is a proxy for this, one could use the average income level in the region as an indicator of average income in the project area. However, there is the potential for disparities in this measure.

**How do you deal with the disparity between what is economically viable and practically necessary?** In other words, a community without transport should be the target beneficiaries but are they in economical terms? The study related to passenger transportation, where operating costs borne by the service providers are the key factor, rather than those of the user. Passengers could get access to subsidised transportation, where the operating costs might put it out of their reach (over 10% of their disposable income).

The group felt that equity values must apply to customers, rather than be measured at a regional level. Social issues would vary too much over such a large area, and key constraints would therefore be missed.
However, regardless of how the evaluation was carried out, it would be necessary to develop widely accepted socio-economic indicators that would be recognised by donors and governments alike.

Some participants further dwelled on the issue that the evaluation should include non-user benefits as well as user benefits. Even if some people were not able to afford public transport ticket prices or benefit directly from improved access, they would see a change in their communities through those members who could exploit the resource. It was observed that it was difficult to determine the response of rural beneficiaries to savings brought about through subsidised transport.

Ideally, participants felt that welfare considerations must override economic considerations in typical rural infrastructure projects. Since many donors were taking a more people-oriented approach to the work they fund, the presented socio-economic tool could be considered a more politically oriented evaluation method, i.e. to put a human face on economic evaluation.

All participants were interested to know if the method could be applied in an urban setting, and to public works projects other than roads. Overall, the group felt that it was vitally important to include social factors along with economic factors in selecting and evaluating transport projects, but the indicators had to be acceptable to all stakeholders. Hence they would probably need to be different for urban and rural transport projects. However, it was agreed that the method could be applied to government and donor funded projects (e.g. grant funding).

4.2 PLenary Session for Workshop 1

The first four papers introduced new issues and areas of intervention for labour-based technology. Firstly, in the urban context, where infrastructure is complicated by the built environment and complex internal and external community relationships. There are increasing levels of poverty in urban areas, as the urban population increases through migration in search of opportunities. It is therefore an environment that will become increasingly important for service provision in future, and therefore the focus for employment creation through use of labour-based technology.

Consideration of social issues is therefore increasingly important, as it is recognised by donors that a broader outlook is needed if project and programme interventions are to have a positive impact on people’s livelihoods. However, during the plenary discussion participants returned to some of the recurrent issues of employment creation that had remained unresolved from previous seminars.
Contracting

Participants agreed that all contracts have a role to play in the development process. It was felt that community-based private contracts should not be considered ‘better’ than traditional ones. In some situations, private contracts may offer a better opportunity for employment generation. However, income generation and employment is not yet mainstreamed in many development programmes.

Employment Creation

One participant observed that employment creation could be achieved through infrastructure contracting. The urban environment held many opportunities for this but there is an apparent reluctance to specify labour-based technology in contracts. This is true for any infrastructure work. It is often left up to the contractor whether to use this technology or not.

Most of the current focus on labour-based technology is, in actual fact, forced into infrastructure by the funding agencies. It would require governments to insist on the inclusion of labour-based technology in contracts, but what government has the courage to push this through? This was recognised to be a challenge that had been raised during other regional seminars.

Community initiatives

Where communities see the value of investing in infrastructure, they are often first to attempt an intervention. There have been many examples of communities ‘doing it for themselves’. However, tenure insecurity was a major brake on this taking place in urban areas.

There are also constraints of scale. No community could take charge of infrastructure if it is too large. They would need support from government, etc. However, in this situation community groups can provide a ‘voice’ for local issues, and thus demand services from government.

There was a general observation that roads are probably the most difficult infrastructure for which to generate community participation. The direct local value of water supply, sanitation, and waste management is easily appreciated, and community involvement in these works is common.

Government and decentralisation

In Uganda, decentralisation has meant that government exists at many levels in rural areas. Responsibility is increasingly being taken at a local level, but the ability of local communities to intervene is currently restricted by their lack of resources and capacity.
This ended the discussion and participants continued to compare views in small, informal groups as they left the hall.

4.3 **WORKSHOP 2: POLICY AND RURAL ISSUES**

4.3.1 Policy Issues

**Group 1**

*Paper: Floods in Mozambique — planning the labour-based contribution to recovery*

*Country: Mozambique*

*Author: Jorge Muonima and James Markland, ANE*

*Moderator: Mahmoud Khalid*

The presentation introduced participants to the extent and nature of the damage caused in Mozambique and how this had been dealt with. In February 2000 Mozambique was the victim of the worst flooding since records have been kept. Hundreds of thousands were left homeless. Repairs are estimated to need over $400 million. This natural disaster occurred at a time when many people were still trying to rebuild their lives after the civil war.

The impact of the floods was immediate and dramatic. Many major transport routes were cut. Economic activities stopped. Prices rose and food shortages occurred. Hundreds of thousands of people sought food and shelter in hurriedly constructed resettlement camps.

The damage caused to roads was extensive and the National Road Administration (ANE) was faced with the task of re-establishing access to the many thousands of people isolated by the floodwaters.

Unpaved roads suffered various types of damage:

- major erosion gullies due to the passage of large volumes across or along roads
- road flooded and impassable
- softening of the road surface due to high groundwater levels
- washouts of culverts and small bridges
- loss of the gravel surface due to the exceptionally heavy rain
- deposition of large volumes of eroded material on the road.

However, gravel roads constructed under the Feeder Road Programme performed remarkably well.

Estimates were made for repairing roads in the affected provinces. They were presented to donors at a meeting called by the Minister of Public Works and Housing. It was not possible to produce detailed
budgets for repair costs within such a short time scale. The estimates were regularly updated during April and May as more detailed survey information became available from the provinces.

There were impressive examples of people’s desire to overcome their problems and return to normality. Transporters, shopkeepers, and communities worked together to re-establish at least the minimum of access. Many contractors worked seven days a week, and flexible emergency contracts were prepared that did not need to go through the tendering process.

Assessment of the major roads was relatively straightforward although helicopter reconnaissance was often necessary. Initial priority was given to the major roads to distribute humanitarian assistance.

A repair strategy was developed based upon:

- restoration of basic access to isolated areas
- creation of employment for people in the flood-affected areas
- emergency repairs should be completed to sufficient quality to survive the next year’s rains, until longer-term repairs could be put into place
- permanent repairs should be carried out to drainage structures
- provision of opportunities for private sector, whilst recognising their limited experience in labour-based methods.

The majority of labour-based experience was held by the state-owned contractor working on the Feeder Road Programme. It was decided that a combination of mechanical and labour-based techniques was the most appropriate for repairs requiring large volumes of imported fill.

Emergency repair works were carried out quickly, but the mobilisation of contractors for the full-scale emergency programme was less rapid, largely because of a reluctance to work without a formal contract. This has proved to be an important disadvantage in the introduction of more formal contractor-client roles.

The recent floods that devastated parts of the south and centre of Mozambique have provided yet another opportunity for Mozambicans to demonstrate their resilience and determination to overcome adversity. Although the access situation is far from being completely resolved, it has improved dramatically over the past months.

**Summary of discussion**

The group identified two key issues arising from the paper presentation:

- use of labour-based methods in an emergency phase
• design lessons for roads and bridges to survive flooding disasters.

*Use of labour-based methods*

It was felt that Mozambique’s response to the flooding was greatly improved because of the expertise and capacity in the on-going labour-based programme. The labour-based workforce and other resources were drawn into the national response. Although this was disruptive to the ongoing programme, it served the national need, which was important.

Many participants saw the ease of mobilisation of the labour-based workforce to be a key advantage in this situation. It maximises the number of people involved and provides employment and short-term cash income when peoples’ normal livelihood activities have been disrupted. When resources are scarce, it is also the most practical approach to adopt. Large machinery is often difficult to mobilise, and access to many areas is restricted due to environmental conditions.

It was felt that although labour-based interventions are faster and more localised, consideration had to be given to the fact that the rate of progress is slow. In a post-disaster situation, access of any sort must take priority. Recovery may necessitate the distribution of food, medical supplies, and other resources. However, participants were quick to emphasis that during disaster recovery, people’s priorities were very different from ‘normal’. Therefore, it may be necessary to modify or adapt normal labour-based approaches and take this into consideration.

*Design lessons*

All participants felt that a careful study of the Mozambique experiences would assist in setting standards elsewhere. The design of infrastructure in areas that were prone to flooding must therefore take flooding into consideration. Infrastructure should survive being submerged. Any design should not concentrate flows, but ensure smooth controlled passage of water, otherwise abutments for example would be washed away. The example of submersible bridges was given. One participant recommended that no road structure should ever be built above the ground surface!

It was observed that the design of roads constructed using labour-based methods already put great emphasis on drainage to preserve the road structure. Mild slopes were considered durable and appropriate. However, participants drew attention to the cost implications of designing infrastructure to survive freak events. It was just as important not to over design anything.
Group 2

Paper: Institutionalising a participatory approach to rural infrastructure development in Nepal

Country: Nepal

Author: Shuva K Sharma, Scott Wilson

Moderator/Rapporteur: Hanan Hussein/Rob Geddes

The presentation introduced the situation faced by Nepal’s rural areas. Lack of basic infrastructure is considered to be one of the reasons why many farmers continue to face poverty. Demand is highest for rural roads, small irrigation schemes, and small market centres at a village or town level. To tackle both issues, employment intensive programmes have been started that aim to provide employment in infrastructure development, and in the agricultural sector.

The Rural Infrastructural Development Project (RIDP) will expand the rural road network and irrigate more agricultural land. At the same time, there will be institutional strengthening to provide support for implementing, monitoring, and maintaining rural infrastructure. Participatory approaches are used to win community backing for project implementation, and to help the community to resolve conflicts over resource use.

Community organisations are formed to mobilise local resources, e.g. labour. Different infrastructure will have different ‘users’, e.g. irrigation schemes have a clearly defined ownership, and responsibility is also defined. However, in the case of roads the term user becomes vague, as the ownership level can be extended from those residing near the road alignment to those vehicle owners and users who benefit from the road. The vagueness of users of a road diminishes the level of ownership and resulting commitment for maintenance by local people. Therefore, institutions that are formed for roads generally adopt the term ‘coordination’ to define their function.

Summary of discussion

The presenter raised a number of issues from the presentation:

- that labour-based methods had not reached the target groups, decision makers, and communities
- there was a lack of capacity at local level and within the organisational structure
- roles and responsibilities were unclear at the local level
- social issues were not fully integrated at the design stage.
The participants concentrated their discussion around capacity building for communities and organisations. They felt this was important because institutionalisation of any process could only occur if the capacity to follow it effectively was built. This was particularly true at the local level.

It was observed that building capacity in an organisation also had a major effect on the sustainability of the outcome. Building capacity meant that people could play a meaningful role, and gave a feeling of self worth. It also ensured the overall direction.

It was often common practice to create parallel structures within an organisation that were responsible for these new processes or approaches. However, there were risks inherent in this because their role was often unclear and the recipient institutions felt marginalised or excluded. Parallel organisations had been seen to work where support was given by senior staff and within a sound policy framework.

It was felt that capacity building required the right technical and financial support, along with an appropriate legal framework. Organisations were often the most sustainable aspects of a project, provided there was adequate training, and care had been taken over power delegation. Staff should be encouraged and feel motivated. However, many of the participants recognised, from their own experiences, that funding and lack of willingness by local government authorities were often major constraints.

The question then arose, “How do you build capacity at local level when this is lacking?” It was observed that rural communities had a high rate of illiteracy and lack of technical knowledge. However, when the project withdrew they were expected to have the capacity to continue labour-based technology, and to operate and maintain the infrastructure they participated in creating. Therefore, participants felt there was a need to address the issue of capacity at all levels to deal with project stakeholders. It was recommended that a thorough assessment of the skills and institutional capacity be carried out before projects were initiated. Capacity building should then be the first task before infrastructure implementation.

How could this be resolved? Firstly by creating awareness amongst stakeholders of the full scope of the proposed project. Stakeholders should be involved in the assessment of their own capacity, and participate in identifying their training needs. The roles and responsibilities should be clearly defined, and staff motivated by this knowledge. Particular attention would need to be given to the lowest level of government. Their role is often the most crucial, but they are often stretched and under-resourced. Participants had seen a lack of control over donor activities, or coordination between government and donors. This often resulted in local government having to cope
with several disparate projects in one area, which stretched their meagre staff resources.

In conclusion, the group agreed that there must be a realistic commitment by key stakeholders at project conceptualisation. This would promote a sense of ownership. Their roles and responsibilities during the course of the project must be clear.

4.3.2 Rural issues

Group 3

*Paper: Labour-based Employment Practices — The Need for a Paradigm Shift in Procurement Policy*

*Country: South Africa*

*Author: Professor P D Rwelamila, University of Cape Town*

*Moderator/Rapporteur: Moustafa Semeida/Catherine Allen*

The presentation aimed to provoke debate on the next step in promoting labour-based methods. The presenter wondered whether the feasibility of the technology approach was still a viable focus for debate. Has it not been proven enough over the last few years? The presenter felt that the real issue was how to formalise the method with related and appropriate support strategies.

In practice, there is very little understanding of the dynamics of labour-based methods. It is commonly seen as an approach that can be taken up and dropped as people see fit. It is necessary to reflect on the procurement side what key-issues are to be dealt with.

One key issue is the involvement of communities. It is necessary, but there are apparently many difficulties to overcome when projects are implemented. How can communities be involved effectively? A lot of projects still do not consider the capacities of local communities and the poor. This is a reflection of the training needs and possibly also of the gaps where people participate in the design and implementation of projects. Can training be considered successful?

Formalising labour-based methods can be done through an adequate procurement policy. Whatever policy is developed must however be ‘owned’ by the intended beneficiaries. This requires a process of consultation and participation in policy formulation. And this includes raising awareness in communities about the role that projects may play in their development. Projects contribute to poverty alleviation and development, and must be viewed as such rather than in isolation.

Community participation can be costly and this may lead to project delays. This in turn impacts on the transfer of skills. It is necessary to
understand the dynamics of community participation, depending on the scope of the project. There are gaps in the understanding by public and private sector professionals of those dynamics. Training is necessary and labour-based methods should be included in educational programmes. Labour-based works should create employment, but should also link with broader development initiatives. If more professionals understood this, then maybe the methods would be applied more appropriately than they currently are.

It is important that lessons are learned from projects, and that this information is readily available to all. Small and medium contracting organisations (SMC) traditionally operate within local areas. They can offer employment opportunities to the local people, but only on an ad hoc basis. SMCs can only bid for small projects since they do not have sufficient resources to take on larger ones.

There is little attention given to SMCs in policy formulation and procurement systems reform. They could take up employment-intensive construction methods, but they need policy support. SMCs in Africa have a great potential in contributing to employment generation, alleviating poverty, levelling income inequalities, and building capacity in economically disadvantaged communities.

The construction industry should play a more strategic role in social development. There is a need for best practice in construction procurement as a primary requirement for sustainable success.

Procurement success must be based on project parameters. It is necessary to consider the context in which labour-based methods are being asked to perform. It must meet acceptable standards of:

- cost
- quality
- schedule
- utility.

In South Africa there is an affirmative procurement policy, where small firms are targeted. It is important to ensure that tendering methods are changed to encourage joint ventures between small firms and well established firms. This also ensures best use of resources and skills transfer. Small-scale service providers can also be a target for altered procurement policy.

It might be helpful to have a ‘best practice’ accreditation system for labour-based methods. This could run alongside the standard register of contractors so that their performance is monitored. If acceptable levels of quality are attained, contractors could then be submitted to the next level or grade.
In conclusion, the question of whether labour-based methods are viable is no longer an issue for much debate. There has been enough proof of this. It is important now to proceed with implementing what has been learned. This needs to be supported by an effective procurement policy, initiated by the public sector. The constraints that are inherent in labour-based methods should be recognised and incorporated into considerations of use. There is nothing wrong with using a mix of labour-based and equipment-based methods.

Summary of discussion

Issues were identified as:

- The capacity to implement labour-based technology approaches should be a requirement for registration of contractors
- There needs to be a long-term policy approach to formalising labour-based methods
- What is the role of tertiary and secondary training institutions in this technology paradigm shift?
- Mixing technologies is the correct approach, i.e. using the methods that are most appropriate instead of treating labour-based technology as a ‘cure-all’.

Many of the participants disagreed with the presenter’s contention that there was no longer any need to debate the viability of labour-based methods. There are still many people who do not understand the method, which can be disruptive to the process of implementation. They need to be made aware, but you cannot protect the process against people who claim to know about labour-based methods, but who actually do not know enough. In South Africa, when the process of positive discrimination was begun, many of the consultants became ‘experts’ overnight.

One participant observed that training contractors in labour-based technology involved a cost to the contractors. For one project, a labour-based workshop was arranged before the tendering process. Contractors attended, knowing that there was work available at the end. However, only one contractor could be chosen. The others had invested in the workshop but had gained nothing in return. They were reluctant to go through the process again, and the skills they had learnt were gradually lost. So, who should pay for the training? In some instances, the donors who fund infrastructure development do not want labour-based methods used.

It was felt that the procurement document must contain clauses that required the contractor to take up innovation and government objectives. However, limitations in procurement are often the result of lack of capacity in the client organisation.
Group 4

Paper: Mainstreaming Labour-based Programming in Indonesia

Country: Indonesia

Author: Danang Parikesit, Gadja Mada University

Moderator/Rapporteur: Mohamed El Shorbagy /Mohamed H Ashmawi

The presentation introduced a three-year programme of technical support and training in Indonesia. The programme assists the State Ministry of Public Works and the Department of Settlement and Regional Development to develop their capacity as focal points for labour-based technology.

Labour-intensive works have commonly been used in Indonesia as a means to generate income and to alleviate poverty. The labour-intensive projects support national infrastructure goals. They became less popular over time, until 1994 when no labour-intensive programmes were being implemented. In the wake of a national economic crisis resulting from the Asian financial crisis, they have been revived. The first programme lasted four months, targeting mainly retrenched workers in construction and manufacturing industries in urban areas on Java.

There is a government commitment to labour-based approaches being used in public works. Communities are involved throughout the project cycle. Not all have been successful. Some of the problems encountered included:

- lack of community participation
- poor product quality
- low quality engineering supervision
- inadequate planning for future financing and maintenance
- low sustainability.

The objective of the project is to attain optimal employment generation and poverty alleviation through the realisation of cost-effective, and well-managed, labour-based and labour-intensive construction programmes. This will be within the mainstream of regular recurrent works programmes of central and local government and the private sector.

There were four main components to the project:

- strengthened labour-based programmes
- technology innovations for labour-based programmes
- strengthened training, and
- poverty reduction demonstration programmes.
The contemporary labour-based approach emphasises the sustainability of labour-based methods by optimising the use of labour, and ensuring that employment-intensive programmes do not degenerate into ‘make-work’ projects in which cost-efficiency and quality aspects are ignored.

In implementing community-based projects, it has been found that:

- The programme must gain public as well as political support before it is implemented
- Improvements must be made through better sub-project selection and design
- Improved community participation is necessary, requiring greater transparency and access to information
- Further encouragement needs to be given to women, through institutionalising women’s groups, by training, and by promoting community campaigns
- The promotion of leadership skills is needed as a key factor for motivating labour
- Projects should be promoted using appropriately trained community facilitators (social workers, planners and engineers)
- The private sector is further involved in community projects
- The government process of decentralisation is supported through the development of appropriate contract documentation and payment procedures
- More effective financial monitoring is done, particularly where the communities are making a capital contribution to schemes.

Continuing research and training programmes are necessary to ensure that expansion of labour-based technologies takes place. The labour-based programme is dynamic in the sense that it should be developed according to the political, social, and economic context of the region and country.

**Summary of discussion**

It was felt that there were several operational and conceptual issues involved with mainstreaming labour-based programmes in any country:

**Conceptual:**

- The need to change the current mind-set of key stakeholders so that they view labour-based technology in a more positive way
- Internalising knowledge rather than relying on ‘borrowed’ knowledge form donors
Operational:

- Political endorsement is needed for whatever programme strategy is developed and used by government at different levels.
- The role of educational institutions is important in order to deal with the current level of inexperience within the government.

Participants agreed that lack of experience within government would hamper any attempt to mainstream labour-based methods and create an enabling policy environment. The development of appropriate policies and laws was an essential first step. Educational institutions have their own role to play in training contractors and future government officials.

In terms of a policy framework, there was a consensus view that it should eliminate discrimination against use of labour-based methods. Some felt that the current practices are not friendly enough and that preferential treatment should be given to labour-based practitioners. Appropriate contract documentation would be needed, which allowed small and medium sized contractors to compete on fair terms. The development of such material goes together with effective management of small contracts. The capacity of local government to handle this type of work needs therefore extra attention. It was observed that the process of decentralisation could work in parallel with the process of incorporating knowledge.

In order to sustain a labour-based programme, participants felt that there needed to be a constant flow of funds to ensure consistency in output. Some financial resources could be used as revolving funds that targeted employment generation. The key stakeholders in achieving this would be the small contractors, who would require encouragement and training.

There was a general agreement that participatory planning methods and public awareness campaigns were important contributors to sustainability. To ensure that the programme was not too ambitious, a pilot project approach should be used. Overall the group concluded that:

- Beneficiaries should be fully involved in project planning and implementation
- Labour-based technology should be given preference wherever possible, supported by an appropriate policy framework. However, labour-based technology should only be used where most appropriate
- Appropriate specifications and procedures need to be developed
- A special Audit Unit should be set up to monitor the relationship between implementation methods and policy support
• High level support was necessary to drive an appropriate policy framework
• Training capacity needs to be developed to support the training of key stakeholders, including Government staff, NGOs, contractors, local communities, etc.
• An Employment Fund could be developed that ensured a constant flow of funds

4.4 WORKSHOP 3: POLICY AND IMPLEMENTATION ISSUES

4.4.1 Policy issues

Group 1

Paper: Development and Implementation of a National Labour-based Works Policy

Country: Namibia

Author: Justin Runji, Roads Authority of Namibia

Moderator: Mahmoud Khalid

Namibia has a population of 1.7 million. In 1997 the labour force stood at 600,000 with 40% involved in formal employment, 30% in subsistence farming, 5% in commercial farming and the other 25% being unemployed. There is a skewed distribution of wealth, with 5% of the population controlling nearly 70% of GDP.

The Namibian road network extends for 2,500km, being of a high quality. However, the distribution of this network is not equal. The northern part of the country is very poorly served by roads, while the southern area enjoys good access.

The Namibian Labour-based Works Programme began with a pilot project in 1992 and has expanded from then onwards. There is an ongoing small and medium sized enterprise development programme running in parallel. A comparative study of the costs of labour-based versus equipment-based construction methods was carried out. It found that the average cost of labour-based works is $56,000/km compared to $86,000/km for equipment-based construction (source not given).

The Government decided to expand the success and experience of road construction into other sectors. A draft policy was developed by the Ministry of Works, Transport and Communication and sent to a broader group of policy making units for consideration, with the following criteria:
• Project selection is subject to technical and financial viability
Necessary adjustments in cost-benefit analyses have to be made to ensure that social aspects are included.

Projects should aim for permanent and temporary employment creation, but preferably permanent.

The policy has to be implemented within existing legislation frameworks.

A committee was put together to examine the draft policy on labour-based works. It was found necessary that the lessons learned by the MWTC could be applied to other sectors of the economy. Therefore, all stakeholders were given an opportunity to discuss issues relating to this document through consultations and workshops. They were asked what constraints there might be to implementation of a wider programme of labour-based works. A ‘Green Paper’ set out three guiding principles:

- There was a need to coordinate the initiative within existing economic policies
- There was a need to promote labour-based works in other-than-roads sectors
- Projects had to be viable, based on the premise that the project is necessary and pursues employment generation.

In order to trigger debate, the paper asked what could be done about the backlog of people who had never really entered the labour market. A second issue was the annual increase in unemployment especially amongst people who had left school. What strategies should be used and in what combination? What should be the conditions of newly created employment? Could all sectors contribute to employment creation initiatives, or was the bulk of new jobs to be taken up by the roads sector? Who should support and fund this work?

The outcome of deliberations was the White Paper on Labour-based Works. The principal policy points were:

- institutional support
- skills development
- labour and technology funding
- delivery mechanism (force account, public sector procurement, private sector initiatives and community initiatives).

The presenter concluded with observations that he felt would need to be considered by any government seeking to formulate employment creation policies:

- Labour-based methods should be expanded out of the roads sector, which is its traditional home
- There is quickly a lack of real acceptance and ownership by stakeholders. Issues of unemployment are very serious and programmes are needed to address this
• Resources and expertise are needed before launching into an expanded programme of labour-based works
• Further marketing is needed to meet the challenge of applying labour-based works to other sectors and at higher scales
• We need a cross sectoral application of labour-based works supported by policy
• An institutional framework needs to be in place to drive lessons learnt into policy actions
• Existing employment promotion programmes need to be redirected.

Summary of discussion

The presenter chose two key issues that covered the main points of his presentation:
• Further marketing of labour-based methods is needed both outside and within the roads sector, along with an assessment of the cross-sectoral potential of labour-based works
• An institutional framework is needed to drive any cross-sectoral policy that is developed.

The participants were eager to find out how easy it had been to implement this national policy. Changes had been observed in some of the more traditional equipment-based sectors, such as in water supply and sanitation. The focus of implementation had gradually shifted towards the greater use of labour-based methods. Digging trenches and canals was now being undertaken by hand. Also a railway line construction programme was underway utilising greater numbers of labour, which are supported by machinery. However, it was noted that the policy had only been in effect for the last year. This was too short a time to show reliable indicators of change, but there were already sufficient indications that the policy is succeeding. Local authorities and city departments were also involved in the policy and implementation process.

One of the participants asked if there had been any problems with people not cooperating. The presenter observed that while there were no major opponents to labour-based methods in Namibia, most engineers and other stakeholders preferred equipment-based methods because it was familiar. This was caused by a lack of training and support for labour-based technology amongst those involved. Therefore, they felt more comfortable with equipment-based methods.

One of the participants gave an example in his country, where equipment used in labour-based and equipment-based works were taxed at different rates. This rendered the labour-based works more expensive and therefore not as attractive an option. In Namibia, the policy had identified compensations within the taxation structure that gave contractors an incentive.
Again the observation was made that despite labour-based technology being ‘cheaper’, it still required institutional frameworks to encourage people to use it. Contractors were often concerned at the increased management requirements for labour-based methods due to the increased number of labourers required. It was acknowledged that many contractors will have to undergo a steep learning curve in order to deal with labour-based technology. Managers cost considerably more than labour and most contractors are driven by perceived financial gains.

**Marketing**

In marketing labour-based technology outside the roads sector (and within) participants felt that it was the content of the message that was of key importance. Are the target groups homogenous? Perhaps there are elements in the current marketing message that turned potential supporters into passive opponents. It was felt that each different actor had their own interests: politicians would be more concerned about issues that will re-elect them, *e.g.* employment creation, while engineers may concentrate more on quality and contractors on cost. Therefore, marketing needed to be segmented and targeted:

- policy makers
- practitioners
- beneficiaries.

It is important that labour-based technology is taken up by other sectors. Roads alone cannot provide employment solutions as they have a geographical bias of distribution. Therefore, other sectors must be included in a cross-sectoral approach. This requires a country specific approach to strategies and materials.

**Institutional framework**

Many governments do not involve the private sector in the process of policy formulation. It is often this lack of consultation that is the root cause of hindering success. Policy and institutional frameworks had to create an enabling environment within the public and private sectors. Some participants felt that creating an institutional framework was an imposition. Rather, there should be incentives to uptake the technology.

The conclusions drawn from the discussion included:

- To promote labour-based technology into new sectors, the market needs to approached as different segments, with each target group being given its own clear and specific ‘message’
- The core message is ‘employment’
- The private sector should have a more active role in the policy formulation process.
Group 2

Paper: Development of a policy for rural roads

Country: Cambodia

Author: Sous Kong, Under-Secretary of State, Ministry of Rural Development

Moderator/Rapporteur: Hanan Hussein/Rob Geddes

The presentation introduced the background to rural roads policy development in Cambodia. It covered four key areas:

- background to the situation in Cambodia
- rural infrastructure research
- rural infrastructure policy
- rural road programme.

Cambodia suffered two decades of warfare, which has left over 80% of the population living in very poor and under-resourced rural areas. Poverty is therefore a major issue, and what rural infrastructure survived the conflicts had been in decline ever since. On the signing of the peace agreement in 1991, overseas aid began to come into the country to redress this trend.

Between 1992 and 1993, interventions were carried out in an ‘emergency’ phase, mainly as food-for-work projects. This provided employment for rural populations and began skills transfer.

The rehabilitation phase, from 1996 to 1998, involved the setting up of the Government’s first socio-economic plan. Complementing this was further assistance from outside organisations such as ADB, World Bank, and Care International.

Cambodia is now in the third phase: infrastructure development. Many of the projects implemented during the first and second phases could be continued, with additional support and reviewed focus. The Government’s efforts on rural development focus mainly on poverty. Tackling rural poverty is seen as the primary method to tackle national poverty. The development of rural roads is the priority of the Ministry of Rural Development. It is determined to implement labour-based technology in order to provide employment, strengthen private sector contracting, and improve maintenance in an environment of resource constraints. It also focuses on gender issues.

Government policy is formulated towards development of rural roads. It enables a structure or framework for senior staff to work within and towards this goal. The process of policy making will provide guidance for stakeholders, the Ministry of Rural Development (MRD), and other actors. It will provide a structure for ownership. The MRD, working
jointly with Ministry of Rural Works, is developing legislation covering the ownership of rural roads:

- tertiary roads would be the responsibility of the community
- the provincial department would own and manage the overall structure of the tertiary roads.

The MRD has adopted labour-based technology, using a proportion of the budget under their control and with the additional support of contributions from communities. The MRD aims to facilitate the improvement of conditions in rural areas by improving access and encouraging employment. They are responsible for all roads carrying 50 vehicles per day or less. Environmental sustainability is considered as part of the project. Safety is also an important consideration in the development of rural roads.

**Summary of discussion**

The presenter raised two issues for further discussion. The group felt that the presentation had raised other important issues and two further areas for discussion were identified:

- How do you finance road management and incorporate maintenance into this process?
- Ownership of rural roads
- How to develop appropriate policies
- The effect of decentralisation and the transfer of responsibilities between ministries.

Before the discussion began, the participants raised a number of questions for clarification.

**What process or organisational set up is in place to ensure the involvement of communities?** Communities are involved in planning, survey, and design. Participation in Cambodia is carried out at national level by the Council for Agricultural and Rural Development (chaired by the Prime Minister). At Provincial level, this is done by the Provincial Rural Development Committee chaired through the Provincial Governor and including all line ministries and NGOs, etc. At commune level there is the Commune Rural Development Committee chaired by the Commune Leader. There is also a Village Committee with the leader elected by the villagers.

**What are the institutional mechanisms for rural road maintenance?** Maintenance is both periodic and routine. A great deal of support is gained from organisations like ADB and ILO for this work. They provide tools and training. The Government provides limited funds for maintenance, which is earned through taxing car fuel.

**Does MRD policy look beyond just the construction of rural roads, in terms of services to which this road leads?** In addition to roads, the
policy looks at people’s livelihood needs to include other issues of rural development. This is done in collaboration with the local population.

Participants felt that a great deal of financial assistance for road funds could also be acquired from donors. However, this would not be sustainable and while communities were not well resourced, they should contribute to the fund themselves. An example was given by one participant from Nepal, where communities levy a toll on vehicles using their stretch of road. In this way, funds can be collected for maintenance in addition to community contributions. The community contributes 50% to the routine maintenance of roads from their own resources, either financial or labour. However, using this approach meant that low-volume roads were often subsidised by high-volume roads.

It was observed that funding road construction is very different from what is needed for their eventual maintenance. Funds for construction could be obtained from the larger international agencies, e.g. ADB. Agencies like ILO can help governments to design projects that are acceptable for funding. However, it was important that plans incorporate the broader issue of development, or access to other services, as well as eventual maintenance.

There was considerable debate on how to view maintenance of roads. Many felt it should be looked at from a network perspective, as the traffic on low-volume roads would be insufficient to fund their maintenance. This brought the discussion back to the issue of higher-volume roads in the network subsidising smaller low-volume ones. The question was raised, “With the addition of local road funds, would this be sufficient?”

Overall, participants agreed that there needed to be a more broad and integrated approach to road development. Road funds often don’t work because the development that should be associated with the road was not in place. The root cause was identified as being at policy level. Frameworks needed to reflect this broad outlook rather than concentrating on the construction and maintenance of roads. This could only be successful if there was a high degree of coordination between ministries and other actors.

There was also the suggestion that roads could be built as a private sector initiative. The road could be built and operated as a private venture for a certain length of time before handing it back to government. However, this was tried without success in France.

The group recommended that:
• There should be a usage charge on all roads that is paid into the national road fund. It could be taken in the form of a toll or tax
• A proportion of the revenue collected should be earmarked for rural roads, which would otherwise not be able to support themselves
• To sustain the funding, the additional economic activities associated with road development should be included in planning and incorporated into fund generation
• In order to use those funds efficiently, it is important that capacity is built to manage the network, and build up contractor skills.

4.4.2 Implementation

Group 3

Paper: Use of improved management and testing procedures in labour-based construction

Country: South Africa

Author: James Croswell and Robert McCutcheon, University of Witwatersrand

Moderator/Rapporteur: Moustafa Semeida/Catherine Allen

Historically, labour-based methods were used within the public sector, which has resulted in a lack of entrepreneurial drive amongst practitioners. The future of labour-based contracting requires the development of small contractors who are able to work to proven standards, and procedures that donors and clients can rely on.

One of the major benefits of small contracting companies is that they generate more employment per unit of expenditure and distribute opportunities more widely through the construction industry. They are ideal for the application of labour-based methods. However, they invariably have no capital and arouse scepticism. Small contractors are perceived as being slower, more costly and delivering poor quality goods. Small contractors often find it difficult to budget for labour-based methods, and shy away from using this approach.

Therefore, steps are needed to align labour-based procedures with those familiar to, and well understood by, all other actors in the conventional contracting arena. This will require adaptation to many aspects of the process:
• assessment
• budgeting
• tendering
• contractor selection
• control.
There are a number of tools and approaches that could usefully be applied to improve small contractor management of labour-based technology. In view of the budgeting constraints experienced by most contractors, it is important to optimise the resources to be applied to any task. It is particularly important to consider all the tasks in the sequence, so that a workforce can be adequately planned for and kept productively employed. This is called team balancing.

There are team-balancing schedules available for most of the important stages in the contracting process, including: designers and estimators, contractors and monitors. Using these schedules would mean that estimates could be made more accurate by using results that were reliable. Assumptions could easily be verified.

The tender process could be modified to encourage emerging small contractors. The selection criteria could be modified to target different groups such as women and the unemployed. These criteria would need to be publicised and the process be transparent. It would go some way to preventing cartels. Training may be necessary for these target groups to compete successfully for tenders. The tendering process could be further improved by restricting awards to bids that fell within 10% of the engineer’s estimate.

As small contractors do not have great resources, there is a need for a quick and economical form of testing. The Dynamic Cone Penetrometer (DCP) has been widely used for testing shear strength of in situ or compacted soil. It is robust and simple to use in different capacities: evaluation of sub-grades, existing layers, trench excavations, and task setting guidelines.

The presenter demonstrated the DCP during the presentation.

Often, trench backfilling is not tested. The DCP provides quick comparative results that can later be verified using other methods.

Improvements in monitoring would allow an earlier indication of success, so that refocusing of efforts can be made as early in the process as possible. As with all procedures, monitoring should be transparent.

Conclusions:
• There should be wider use of small contractors
• More labour-based construction in the private sector
• Need for rules and guidelines
• Need for simple effective test methods
• The paradigm needs to be altered to encourage and facilitate the entry of new contractors.
Summary of discussion

Two issues were chosen by the presenter for further discussion:

• The need to align procedures with conventional construction
• The need to identify and implement simple and cost effective test procedures.

Appropriate engineering standards must be identified regardless of whether construction was carried out by labour-based or machine-based methods. Currently, the standards are often unachievable, e.g. moisture content rates which are too high for the level of compaction that can be achieved with equipment currently used in labour-based methods.

Testing very often does not take place, particularly for labour-based works, due to their usual remote location and perceived complexity of the testing methods being inappropriate to labour-based ethos.

The end product must have the same attributes, regardless of how they were achieved. Too often projects are managed in a way that is different for labour-based and machine-based works. This only heightens the perceived ‘difference’ and makes labour-based methods look like a special case. To be successfully mainstreamed, labour-based technology must be seen as being part of the normal repertoire of construction techniques.

It should be possible to classify the type of work that can be carried out by labour-based and by conventional methods, depending upon the required specification. Taking all this into consideration, we can design infrastructure to suit particular categories of work and choose methods accordingly.

Conclusions:

• There are many well-respected procedures already in existence. Labour-based methods must learn from them wherever possible
• The technical specification should remain the same, but the contractor should adjust procedures so that labour-based technology can be integrated
• Consideration of risk distribution will affect working methods
• Contracts for labour-based and conventional works should be the same, but the process will need to be different
• The contractor needs to demonstrate achievement of the required specification
• Can the same specifications be applied to labour-based and conventional works?
• Appropriate engineering standards need to be developed for labour-based works
• Labour-based works should not be seen differently in terms of output, management, etc. from standard works.

Overall recommendations were:
• A common contractual framework must be developed to cover both conventional and labour-based works, but the content should be appropriate, testable and achievable
• The same and appropriate quality standards need to be developed for both labour-based and conventional contracts.

Group 4

Paper: Soil stabilisation for road pavements using ionic stabilisers: A state of the art review

Country: Global

Author: Mike Knowles, Consulting Civil Engineer

Moderator/Rapporteur: Mohamed El Shorbagy /Mohamed H Ashmawi

Access to suitable gravel sources that can be used for road pavements is a problem in many countries. They are becoming more difficult to find, and more costly to utilise. Acquiring land from which to extract material is expensive particularly in areas where agricultural land is at a premium. As a result, gravel sources are often a long way from the site of road construction. This adds to the cost, and using large transport lorries puts further strain on the existing road network. Rehabilitation of gravel pits is generally neglected resulting in environmental degradation.

One option is to stabilise the existing material. Ionic Soil Stabilisers or Sulphonated Petroleum Products (SPPs) are one means of making locally available soils stronger, more durable, and therefore suitable for road foundations for low volume roads. Knowledge of this process has been around for some fifty years. It also puts less strain on dwindling gravel resources.

Sulphonated Petroleum Products alter soils so that they retain their maximum dry strength under all weather conditions. SPPs are a blend of highly ionic reagents designed to be complementary to the clay components of the soil matrix.

SPPs are a composition of three ingredients:
• alkyibenzenesulfonate
• phosphoric acid
• sulphuric acid.
In their concentrated form, SPPs look like detergents; they are viscous and vary in colour. They are highly toxic and acidic and require careful handling. In their diluted state, SPPs are safe.

Through a number of field trials in Africa and Asia, knowledge of soil analysis requirements is being increased. The soil properties that require alteration by stabilisation include:

- strength to increase stability and bearing capacity
- volume stability to control swelling/shrinkage caused by changes in moisture content
- durability to increase resistance to erosion either from weather or traffic, and
- reduction in ability of water to enter and pass through the soil.

Until recently, few specific soil-testing techniques have been developed. This has manifested in a lack of a reliable means for predicting behaviour when using SPPs in an infinite variety of soil types. Consequently, the use and development of the technology has been limited.

As soils and the environment vary so much it is important to recognise that results using SPPs vary. Where SPP treatment is considered a possible option, soil testing must always be undertaken prior to implementation.

**Summary of discussion**

As a result of the presentation, the participants raised six issues for further discussion. Due to time limitations, these had to be narrowed down. By vote, the first three issues were deemed to be the most important:

- forecasting dosage rates
- health and safety
- environmental risks
- cost of application
- appropriateness of technique to labour-based technology
- technical complexity.

Participants felt that quality and strength would be of key interest to engineers. It was not clear that any quality assurance was included in the issue of forecasting dosage rates. Soil testing seemed expensive and possibly not appropriate where financial resources were limited. Concerns were expressed over the reasons why this technology had not been taken up despite it being around for many years.

People observed that there were many other factors that were of far greater importance to rural roads performance. There was debate on the acceptability and usefulness of results obtained from a DCP test. It
was considered an expensive tool that tested only one parameter. Resistance to environmental deterioration, e.g. gullying, erosion, etc. is far more important to rural access than simple ‘trafficability’. Gravel loss might be caused by other factors and many contractors do not take these into account, particularly the environment. Many participants felt that lessons were not being learned from ongoing rural road projects. There can be no one pattern for construction of rural roads. While the DCP tool is useful, it is possibly too expensive in a rural setting.

The debate then switched to concerns over financial costs of soil stabilisation. It might be financially viable to treat the in situ material of a rural road, rather than trying to stabilise gravel that had been brought in. The presenter had much experience of testing this technique. He had obtained a free ‘pilot’ from some of the companies who sold the product. They were keen to build up available data that could be used to support their claims for it being a viable alternative to introduced material.

There were major concerns expressed over health and safety issues and impact on the environment. There did not appear to be any evidence that studies had been carried out to investigate these issues. Therefore there was a complete lack of data. Participants felt that the burden of proof fell on the manufacturer, who should be compelled to provide reliable data that proved its safety. It was felt that the product should therefore not be sold in any country until the impact on humans and environment could be proven.

Another concern was the level of variation in performance that could be experienced, due to differences in soil type and environment. The supplier would not provide a product guarantee unless a soil test had been carried out before use. Soil testing required skilled manpower and access to a testing laboratory, or the appropriate equipment. This was a big investment to make. The question was asked “How could this level of technology be suitable to field conditions where labour-based technology was being applied?” Resources were not available in rural areas and many countries do not have testing labs.

It was felt that the implementer had to become a ‘soils expert’ to use the product. It requires a serious level of commitment to the product. Participants wanted to know what was the life cycle cost of this technology. There may be much more viable methods that should be used first.

The group concluded that forecasting problems were the responsibility of the manufacturer of the product. The variability of the labour-based operation makes the application of this method even more difficult, and this is a serious consideration. The method is probably too sophisticated, costly and sensitive to be used for rural roads and labour-based works. One of the key objectives of labour-based technology is to reduce the dependency on foreign currency resources in the development of infrastructure. This method of soil
stabilisation appears to be very costly, and for this reason alone, it is probably not appropriate for labour-based technology. However, there may be situations where it is suitable for use, so it should not be completely discarded.

Conclusions:
- That there was insufficient data available on its short and long-term impact on humans and the environment
- Until this data was available, the product should not be sold for use in labour-based roadworks
- A great deal of technical commitment was needed to apply this technology, and this should be considered carefully when deciding whether to take up the method
- Does it fit with labour-based methods? Several participants felt that it did not.

4.5 **WORKSHOP 4: CAPACITY BUILDING AND RURAL TRAVEL AND TRANSPORT**

4.5.1 Capacity building

**Group 1**

*Paper: Labour-based methods — a tacit knowledge perspective: A case study of Egypt*

*Country: Egypt*

*Author: Ahmed Gaber, President of Chemonics Egypt*

*Moderator: Mahmoud Khalid*

The presentation introduced the observation that two villages were seen to have a specific skill associated with all males of working age; namely well digging in one village, and the other in pipe laying. Why?
- That this represents tacit knowledge embedded within the community
- This also represents social capital for livelihood strategies
- A network of trust, which does not require any contract of formal procedures, has perpetuated this.

The reasons for this were investigated, by answering the following questions:
- What are the economic activities being undertaken within the village?
- How closely do their methods follow labour-based technology?
- What kind of knowledge is there?
• What are their attitudes to the skill they have?
• How do they conduct business?

In one village, 40% of the workforce were engaged in well digging, 40% in agriculture and the other 20% in other activities or temporarily unemployed. It was found that well digging had gained prominence over 70 years ago. An opportunity was available for well digging in their area, and some men got involved. From this grew the reputation for good, timely work, and the men were able to put themselves forward as informal contractors. Skills were passed from father to son, and their reputation grew. Many of the households are able to buy equipment to support this business, which they use themselves or lease to others. Once the ‘contract’ has been agreed, these informal contractors move to the site and take their equipment with them. The materials are procured from local sources.

The second village has a wide reputation for excellent work in many different types of infrastructure projects.

It is proposed that the cultural tradition of construction, dating back to the pyramids, provides communities with the innate ability to take up work of this sort given the opportunity. The number of villages that display specialist skills such as this is not known.

The SFD could use examples such as this to transfer tacit skills into other communities. The success of the two study villages has already resulted in surrounding communities attempting to ‘copy’ what they have seen. There is also scope to improve the practice in terms of process, and health and safety.

Summary of discussion

Issues for discussion were:
• How can the tacit knowledge concept be integrated into poverty alleviation programmes (e.g. SFD)?
• How can the available local skills (e.g. in craftsmanship) be used as the basis for employment generation?

It was suggested that SFD had been working in many of the places that had exhibited strong tacit knowledge. Documenting the evidence that they had seen could be useful in the design of projects in other areas, i.e. skills transfer, etc.

Financial considerations and management of cash flow are important factors. There are no formal banking systems within the villages and so contractors operate on their first instalment. This system is very vulnerable, without the benefit of insurance or financial security.

Improvements could also be made in quality and safety aspects of work. However, adding complications will add cost and might not be
desirable. The villages used in the presentation had an entrepreneurial spirit that carried them through. In many areas, this spirit is lacking. It would be difficult to motivate people to take up this sort of craftsmanship.

There are social safety nets in operation, which might have been developed in answer to a particular condition or be part of the cultural norms of the population. They are usually context specific and highly localised and must be taken into consideration when aiming for skills transfer outside the original village.

Participants felt that it would be difficult to replicate the tacit knowledge development that had been displayed by the example villages. Continuing to work with these communities could only bring about an improvement in their immediate conditions. However, an organisation like SFD could certainly work with other communities who show initiative and ‘plant’ areas of activities, and provide entrepreneurial skills within that community. This would stand a better chance of success if the villagers were able to identify what skills they wanted to acquire from their own perspective.

It was observed that villages that had acquired a skill such as well-digging are models that other communities can follow. Their example is necessary in giving people a focus.

Employment generation should support existing skills, to expand and formalise them to improve their chance of success. People should only be encouraged to do things that they would do willingly, rather than those activities that they have carried out in desperation.

There needs to be a market for any skills that are built up within communities. It is possible that they do not currently exist because there was no market for them. This is a very important consideration that must be built into the project design. For example, there may be skilled potters in a community who supply local needs. There may be many reasons why this market has not expanded: access, transport, manpower, etc. Depending on the issues involved, these artisans might benefit from additional marketing skills that will enable them to produce a product that is desirable elsewhere, e.g. colour, shape, type.

Conclusions:

• Experience from SFD and other organisations should be documented on a regional basis
• Particular areas of activity should be highlighted and successful models identified
• Training should be provided to support project design and management
• Current skills should be developed into more formal business skills, with the support of training if needed
• Care should be taken that a market exists for the skills, or one that can be augmented with other interventions
• Accept that some activities are done out of desperation rather than willingness
• Education can help people change professions by themselves.

Group 2

Paper: The Hidden Story — Feeder Roads in Mozambique

Country: Mozambique

Authors: Atanasio Mugunhe and James Markland, ANE

Moderator/Rapporteur: Hanan Hussein/Rob Geddes

Mozambique has a population of more than 16 million, with a GDP of $225 per capita per annum (statistics given verbally during presentation). The geography is flat, riverine, and with much of the country being unsuitable to effective road construction. The road network covers 29,000 km of which 50% are classified as tertiary. Another 10,000 km are non-classified roads. Rehabilitation of tertiary roads has been very important.

The feeder roads rehabilitation and maintenance scheme in Mozambique was started in 1981 as a pilot project. It is now the largest labour-based programme being implemented in Africa. Over the last ten years:
• 4,500 km have been rehabilitated (62% of the total through labour-based works)
• 25,000 person years employment has been created
• Women’s participation is now 16%
• Productivity is almost 2,600 person days/km
• Local material and local knowledge has been used wherever possible.

Social issues played a large contribution to the project. Ex-combatants were one particular target group for employment. The programme also worked on resettlement issues. Wages were $2 per day.

All the works are managed under Provincial Government. The country is divided into ten provinces. Central Government offers financial management and advice.

High-level political support has been a major factor in the success of this programme. Using labour-based methods has contributed significantly to the post-war recovery of Mozambique by providing employment and the means to resettle displaced people. Central Government coordination has been essential to the programme, but devolving day-to-day responsibilities to provincial level has generated
a sense of ownership. Donors have funded the programme through Government, which has helped the sustainability of the programme. Success has also been achieved by the process followed in its development:

Policy definition → strategy definition → regulatory framework → definition of responsibilities → definition of organisation → departmental issues identified → management system instituted.

Previously, responsibility for planning and execution of roads was dissipated centrally between the Ministry of Public Works and Housing and the National Roads Authority. Under institutional reforms, responsibility for roads was entirely devolved to the National Roads Authority, which is now divided into four directorates:

- National Roads
- Regional Roads
- Road Fund
- Administration

Ten parastatal contractors were established by the Government and were responsible to the central Government agencies until institutional reform when they were passed to the National Roads Administration. The intention will be to privatise them in future. Donors have given a lot of funds and equipment in support of the programme, some of which has been given to the parastatal contractors and the rest forms a pool of resources that smaller contractors can access when necessary. Private contractors were encouraged to develop and fill the remaining market.

Women’s participation is currently running at 7% overall. Women represent 8% of skilled workers and 3% of technical engineers. There are no women at the top level. The programme has also been an excellent vehicle for promoting health awareness, particularly HIV and AIDS.

In conclusion, the road sector is an important tool for development and should not be neglected.

**Summary of discussion**

The following issues were identified from the presentation, two by the presenter, and a further two from amongst the participants:

- The need for high-level political support
- Does effective authority and responsibility require decentralisation?
- Social factors must be included in road programmes
- Community ownership.

After clarifications, it was decided that the first and third issues could be dealt with together. All participants felt that any policy should be
based on the fundamental principle of poverty alleviation. Labour-based methods can be an important contributor to this aim. However, mechanised contractors see labour-based technology as a competitor that might replace machine-based techniques in the future. This creates tension between implementers. Therefore, it was felt that policy must also be careful not to perpetuate this opinion.

This led into a lively debate on whether labour-based technology could ever be sustainable, if its success could only be guaranteed with high-level political support and donor funding. One participant asked, “Shouldn’t the technology sell itself?” The speaker argued that labour-based technology should only be used where it was most appropriate, i.e. that if a 50 km stretch of road were needed, in an area of sparse population or long haulage distances, then machine-based methods would be best. The challenge was to mainstream the perception that labour-based technology was just one of many technology choices, and it should not be seen as being separate from any other technology that was available.

In discussing community ownership, the group felt that the community should be sensitised to the issues involved with labour-based projects. It was important to do this at the inception stage. However, one participant pointed out that many of the social initiatives that have taken place in the Feeder Roads Programme in Mozambique have fundamentally changed the customs and habits within the community. It therefore needs careful management and consideration, or good intentions could become serious issues in the future. For example, men may not be happy to have their wives work, or be advised of their sexual practices. Care needs to be taken in introducing these ideas.

The group identified key considerations in community participation:

- sexual practices
- use of household income
- division of labour
- poverty alleviation
- spread of AIDS during construction
- ownership (maintenance)
- payment vs. self-help
- education throughout involvement.

“Had anyone considered how the income from participation in infrastructure projects was distributed and used at the household level?” A husband may not share his wages with his wife and the rest of the household, for example. This raised questions on how to include social issues in works-based projects.

It was observed that, culturally, women have a great many ‘reproductive’ responsibilities, e.g. childcare, cooking, cleaning,
fetching water and firewood, etc. In some cultures, women are also the key producers of food. Due to livelihood insecurity, many of them take up employment, but their burden of responsibility outside this does not change. Therefore, women’s issues are an important consideration and the option of taking up employment must be their choice. “What about women-headed households?” It was agreed that, depending on the situation, women’s involvement would vary from one country to another.

One participant suggested that unemployment was an urban/peri-urban condition rather than a rural one. Participants had experienced the situation where poor households would offer their women to contribute labour to a project because the activity was not paid. However, where wages for labour were being offered, it was more likely that the men would take the opportunity.

Health issues were also a major consideration, according to all participants. AIDS is a big problem in many parts of Africa. As a result of infrastructure development, where this issue had not been given adequate consideration, a long-term impact on communities has been noticed.

In general, the group concluded that ownership goes hand-in-hand with an appreciation of the value of the road. However, if involvement is through paid labour this may be detrimental to a feeling of ownership, i.e. people may expect payment in future, and be reluctant to contribute to maintenance in cash or kind.

4.5.2 Rural travel and transport

Group 3

Paper: Social Exclusion and Rural Transport: Gender Aspects of Road Improvement Project in Tshitwe, Northern Province

Country: South Africa

Authors: Sabina Mahapa and Mac Mashire, University of the North, and CSIR Transportek

Moderator/Rapporteur: Moustafa Semeida/Catherine Allen

The presentation raised issues that are often neglected in rural transport projects:

- social exclusion
- gender sensitivity
- understanding the needs of rural communities

Chitwe village is a remote, Northern Province village in South Africa. It is typical of many rural villages that are characterised by:
• underdeveloped agricultural base
• low productivity
• high out-migration
• high unemployment and poverty
• many female-headed households.

The major sources of livelihood are based on marketing of livestock, butter, vegetables, homemade beer, and fruit.

The Northern Province Department of Transport instigated an upgrading project in March 1997 with a budget of $270,000. During this project, the road serving this village was upgraded from gravel to bitumen. Construction of the new road used labour-based methods, providing employment for many people in the area. However, the new road stops 50 m from the village itself.

Despite the large number of women-headed households, there was a bias towards male involvement in the project, 67 men vs. 47 women, employed on a rolling basis. The local authority through civic organisations carried out recruitment. Tasks assigned to women participants were menial and non-technical, e.g. carrying stones. Men performed elementary technical work, and only project supervisors were given training. The resulting road construction was not to a high standard.

To have an impact on the livelihoods of communities such as Chitwe, opportunities and incentives are needed. Rural access roads can provide a good means of opening up new markets for produce, and access to better healthcare, etc. Therefore, in planning rural road projects, careful attention must be given to what might be required. It may not be enough simply to provide a gravel road, when an all weather surface suitable for vehicles and bicycles would have been more appropriate. In Chitwe, 47% of women walked to and from their destinations. In fact, only 3% of the total village population (men and women) had access to vehicles of any sort, e.g. a tractor. A tarred road would give access to public transport, if there were a through-route to a major destination.

The project provided temporary employment for the rural communities, and provided opportunities for income generation through access to new areas. However, there was limited skills transfer provision for both men and women. Participatory methods were not used during recruitment, resulting in a possibly inappropriate workforce.
The lessons learnt from the project:

- Decision-makers in projects such as this are very rarely women, nor are they poor or from rural areas. Do they truly understand the issues of poor, rural communities, especially women?
- The assumptions of decision makers need to be questioned by beneficiaries and their civic organisations.
- There is a lack of gender sensitivity in project design, implementation, etc. This can entrench social exclusion and poverty. More than 60% of women live in rural areas.
- There is a need to educate decision-makers, project planners and supervisors on gender sensitivity.

Summary of discussion

There were four issues raised as a result of the presentation, two by the presenter and a further two by the participants:

- There is a need to understand the differentiated needs of target beneficiaries.
- There is a need to understand the existing livelihood strategies and challenges of target beneficiaries.
- There is a need to understand the social and environmental impacts of the project. A social and environmental impact assessment should be done during the course of the project.
- We need to dovetail project design and implementation by meaningfully involving beneficiaries and other stakeholders throughout the process. Participation and information at all levels.

Participants observed that many decision-makers and planners do not venture into rural areas to get a better understanding of the situation in which projects are going to be implemented.

If the awareness of planners and decision-makers is a real constraint to appropriate project development then it is even more important for the communities to be involved in the process. In this way, issues such as gender and poverty are not missed. However, skills are still needed to bring an effective representation into account. In Ghana, there is a tradition that women are not allowed to speak when men speak, and they stay in the background when the men gather. This cultural constraint has been circumvented and women’s opinions are being elicited. Perhaps a two-tiered system could be created, whereby the community could create a plan for their area which could then be prioritised by the planners and decision-makers.

There was an observation that the ‘client’ was very different between community-based and other projects. The objectives of the client are therefore also different, and so the way in which they are involved should also be different.
Gender sensitivity should be perceived and expressed in terms other than as percentage participation. The issue is far more complex than that. It should go hand-in-hand with sensitising the community.

However, some participants felt that getting full participation from a community would be impossible no matter how carefully it was done. There was also a risk of raising expectations among people by involving them too early. When these expectations were not met, it reduced the enthusiasm to participate and countered any sense of ownership in the outcomes. The key problem was how to get a community’s needs expressed further up the decision making chain.

Conclusions:

- Understand the different needs of the target beneficiaries
- Dovetail project design and implementation with needs and livelihood strategies by meaningfully involving beneficiaries and other stakeholders, embracing cross-cutting thinking
- Gender participation is more than just a percentage participation; it should be target focused
- Asset ownership and maintenance must be appropriate, or people may not be able to take responsibility
- Needs assessment should precede any planning or interventions
- Avoid top-down decision making; use bottom-up instead.

**Group 4**

*Paper: Linking local level planning to labour-based technology works in the Philippines*

*Country: The Philippines*

*Author: Potentiano A Leoncio*

*Moderator/Rapporteur: Mohamed El Shorbagy /Mohamed H Ashmawi*

Urban poverty is associated with poorly planned, badly constructed low-income settlements that spring up in otherwise unsuitable places. In one instance, more than 200 people were killed when a landslide occurred in a rubbish dump. Their dwellings were in the path of the rubbish. People are now anxious to remove the rubbish and stabilise the area to prevent further slippages.

According to the World Bank, by 1997 the Philippines had more than 44.4% of its population living on less than $1 per day. Poverty is the route cause of most social problems. In 1993 the World Bank estimated that only 25.7% of the Philippino population was living below the poverty line. If these figures are to be believed, this is a dramatic jump in the number of people who need help. This has been exacerbated by strikes and demonstrations over the last five months. Other factors that have contributed to this problem include:
• population growth
• Asian economic crash
• administrative reform.

To combat these problems, agrarian reform has been instigated in an attempt to increase food production. However, long-term benefits will require sustained education and training, and long-term gainful employment.

It requires a new focus, away from large multi-national, big budget projects and more towards grass roots solutions that can provide employment and skills.

Labour-intensive projects aim to provide employment for participants. The National Economic and Development Authority estimated unemployment to be 10.13% in 1988 and underemployment at 21.8%. Migration into Manila and other urban areas was rising, as people moved to find work. Once they got to urban areas, they were unlikely to leave due to the cost of transportation, no work, and reliance on sending money back.

The majority of underemployed is to be found in rural areas. Educational attainment is limited and people rely on seasonal agricultural labour. However, the skills needed to farm are very well developed. Terraces, cut into the mountain slopes for irrigated rice production, have survived as long as the pyramids and are still being used today.

Labour intensive projects began in the Philippines by accident, when flooding prevented the movement of large construction machinery from one area to another. This resulted in labour-based methods being used for construction. Since then, legal frameworks have been put into place to support labour-based work on the proviso that it does not exceed 10% of the costs of equipment-based work. Since then, a number of projects and programmes have been undertaken:

• Philippine Rural Infrastructure Project
• Rural Roads Project
• Rural Roads Improvement Project
• Central Visayas Regional Project
• Upland Access Project
• Community Employment and Development Project

One of the main objectives was the creation of a training team (Central Labour-based Advisory and Training Team), made up of representatives from the Highways Department, Local Government, Irrigation Administration, and the Employment Department. Other
key objectives included the establishment of an institutional framework, the conduct of nationwide training on labour-based equipment-supported (LBES) methods; the formulation of systems and procedures, and the setting-up of organisational structures in government agencies for the application of LBES methods.

The Central Labour-based Advisory and Training Team achieved a great deal:

- The production of LBES training manuals
- Training of 705 site supervisors from infrastructure agencies
- Assistance in the conduct of echo training for 340 participants
- Drafting of detailed specifications for hand tools
- Development of new tools for manufacturers
- Development of proposals for the establishment of permanent labour-based units
- Development of procedures for centralised tool procurement
- Development of Bidding Documents for ‘Pakyaw’ (labour-only) Contracts.

In 1992, a Livelihoods Project was undertaken. It was a very ambitious project that sadly did not achieve the intended targets. Now, the Philippines Government is working on a framework that would institutionalise labour-based methods in infrastructure works in an attempt to address the high unemployment in rural areas.

The Government is using Integrated Rural Accessibility Planning (IRAP) as a strategy to address rural poverty and under-development. The project is undertaken with the support of the ILO, Local Government, and the Royal Government of the Netherlands.

IRAP is considered a tool to use in a project context. It is a systematic, scientific approach that uses data obtained by the communities in identification and prioritisation of rural infrastructure. This means a high level of participation. Within the private sector, other socio-economic issues must be considered, such as ethnic groups.

Despite Government support to labour-based methods, and the obvious success of various projects in the Philippines, there is some concern that labour-based methods cannot be mainstreamed. The Central Labour-based Office, created over seven years ago in the Public Works Department, has not evolved or changed. Engineers are reluctant to be assigned there, as they see no challenge or money in championing labour-based technology.
Summary of discussion

The presenter raised the following questions for the group to discuss:

- Can labour-based methods be mainstreamed through the Public Works Department?
- Should accessibility analysis be incorporated as a standard tool in labour-based planning?
- How should labour-based technology be implemented on a long-term basis, from the point of view of a contractor?

It was suggested that Local Government should be used for implementation rather than the Department of Public Works and Housing. Experiences in Cambodia suggest that Local Government is much closer to the rural population. Therefore, if implementation was to pass to Local Government then implementation should take place through local contractors and be supervised and managed by local consultants. The Department of Public Works and Housing is technically strong but often does not have the manpower to deal with works at a local level.

One participant observed that on a larger scale, big budget projects are often not practical to implement through labour-based methods. As a result, a more labour-enhanced method has been adopted in some countries so that speed is not compromised, i.e. where possible, labour is used but the majority of works are done by machine. This depends greatly on the contractual relationship between client and contractor. This raises technical and supervision issues, which must be made very clear in the contracts. Long-term implementation could either be carried out by force account or through local contractors.

It was felt that both national and local level control and implementation could work together, at different scales, i.e. large-scale projects would be better handled at national level. To support institutional capacity, donors might be better advised to concentrate on developing local contractors. This is particularly true where decentralisation is in process. The current trend is for the development of private contractors and local government.

All participants felt that IRAP was a very useful tool, and many had experience of using it. However, it raised issues with regards to budget planning. As the outcome of IRAP could not be predicted, it was difficult to allocate budgets to cover the works that were suggested. Local government and other departments demanded some predictability in their budget allocation.

Also, IRAP cut across the responsibility of many government departments. There are still issues with collaboration between departments, and coherence of strategy in development of
infrastructure. It is difficult at this time, to see how IRAP can be incorporated into the current state of responsibilities.

In conclusion the group felt that:

- Labour-based methods are mainstreamable, but only at a rate that the institutions can accept
- There needs to be clear lines of responsibilities and communication
- Labour-based methods should be seen as a tool and therefore applied to both force account and local contractors, depending on the needs of the client
- The development of local contracting ability is more likely to meet with funding approval of donors, although force account and local contracting are both relevant
- IRAP is an excellent tool for labour-based programmes but there needs to be a strong link between the analysis and planning process
- IRAP may not fit well into line ministries’ responsibilities.

4.6 **Plenary for Workshops 2 – 4**

The key issues that had emerged from the morning workshop sessions were identified as:

- the acceptability of labour-based methods in terms of attaining social goals and aspirations, and
- their integration into other development programmes and initiatives.

Two examples were given to clarify the points made above:

- Matching labour-based strategies to livelihood needs may be problematic. Many people in rural areas may take advantage of paid work to resolve immediate debt problems, but by participating in labour-based work they may neglect other activities, *e.g.* agricultural work in their fields, which will have a more far reaching impact on food security. In the same vein, Local Access Planning has been widely accepted as a good thing. It provides an opportunity for local communities to define their needs. Unfortunately, this is a process planning tool and the unpredictability of its early stages conflicts with the participating line ministries’ need to budget ahead of any intervention.
- A plea for the realistic commitment of stakeholders at project conceptualisation also had resonance beyond Nepal from where the call came. Obtaining such commitment can only follow the reliable identification of the stakeholders and agreement as to their involvement.
Two questions proposed from the floor and formulated by the moderator, served as the basis for the remainder of the afternoon’s discussion. These were:

- How can we monitor implementation of social objectives in a commercial environment?
- How can we ensure private sector buy-in to labour-based technology?

Key points from the debate included:

- A proposal to include a Specification for social aspects to be achieved within a project, parallel to the Specification that is used for the use of resources, materials, etc. and construction aspects.
- Concern that monitoring against a detailed specification could lead to more effort being expended on the monitoring of the performance of a project that on its implementation.
- An alternative approach, also drawing on construction contracts, would be the prequalification of contractors before the tender process to ensure that they had satisfactory capability, awareness and commitment to the implementation of social aspects as a precondition of tendering.
- In respect of monitoring, there should be process indicators developed which would act as criteria for acceptance of social dimensions of a project. As with all indicators, they could be set to track progress or output.

After extensive discussion on this point it was postulated that labour-based works are in danger of and perhaps are already becoming disadvantaged in comparison to conventional construction by the inclusion of strict social criteria. Whilst there was no intention to dilute the commitment to social goals, there may be a barrier to mainstreaming of labour-based projects if there is inequity in the way that they are assessed in relation to more conventional construction and maintenance works. One solution would be to move towards a policy environment in which the social goals and the socially responsible framework that labour-based projects are subject to become the requirement for all works irrespective of technology choice.

Building on the model of environmental impact assessment, there was a proposal for the monitoring of the attainment of social objectives to be independent of those involved in the execution of the works.

Concern was expressed that several requirements of the labour-based projects and programmes are met in name only and that there is tokenism in meeting the objectives of for example training.

If it were feasible, the quantification of the social objectives in financial terms would allow direct comparison between projects, and objective measurement of performance in this respect.
The production of a standard form of contract was suggested and, notwithstanding that every community and each country would have distinct features which would need to be catered for, there would at least be a framework document as the basis of all documents.

Policies in respect of labour-based technology exist in many countries; labour-based programmes equally are underway in a significant number of countries; the missing link is that the private sector is often completely unaware of either the programmes or the policies. Awareness needs to be raised of the policies and the potential that effective use of labour-based techniques can offer. Labour-based practitioners need to carry their message to the private sector; the private sector is less likely to come seeking the answers.

4.7  WORKSHOP 5: RURAL ISSUES AND IMPLEMENTATION

4.7.1 Rural issues

Group 1

Paper: Social Fund for Development Waste Water Projects

Country: Egypt

Author: Hany Attalla, Social Fund for Development

Moderator: Mahmoud Khalid

The presentation introduced the SFD and some of the work being undertaken outside the roads sector. The Social Fund for Development has raised over $1.4 billion from 18 different donors. It started as a safety net, which evolved into a local development organisation. There are five different programmes:

- small enterprise
- community development
- public works
- institutional development
- human resource development.

Over the last eight years, the PWP has implemented:

- 440 wells
- 5,200 km piped network for potable water
- 270 tanks
- 1700 km of roads
- 10 treatment plants
- 12 pump stations
- 150 km waste water pipe network
• 220 km waterfront
• 160 canals
• 1400 clinics, social centres and schools.

How was the SFD able to raise so much money from donors? A strong relationship needs to be built up between the donor and the recipient. This depends very much on the level of commitment to the work that they will fund.

SFD was able to target its beneficiaries very clearly, and provided donors with information on costs and benefits so that they could see how the end results of their funding would be distributed. Standardising the reporting system for all 18 donors has been very difficult. Being able to relate tangible benefits is important, although there are some benefits that are very difficult to quantify.

Transparency is also important, within all procedures.

Donors will try to target their support to particular sectors and it is important that a recipient is able to tailor their work to meet these expectations. However, this should not restrict recipients from developing their own interests.

Most villages in Egypt now have potable water as a result of financial support over the last decade. However, there was no consideration given to the removal of the resulting wastewater. Many villages now ‘float’ on sub-soil water. Much wastewater is drained into irrigation canals, which then become clogged with household waste. Ponding also occurs in villages themselves, and the houses become flooded. A means of solving this problem had to be found. In urban areas, dealing with wastewater is very capital-intensive and would not be suitable in a rural context. The scale and types of works required in this environment are suitable for construction using labour-based methods.

A typical wastewater project is divided into underground pipes, pumping stations, and treatment plants. Laying pipes is a labour intensive exercise involving digging, shuttering, etc. The most appropriate treatment plants for rural areas are stabilisation ponds and oxidisation ditches, which can be dug by hand. The ponds and ditches have to be layered with stone that can be cut from local quarries. After the stone, a layer of sand is added and finally a ‘pad’ of concrete. More stones are added once the concrete has set.

The fluids are collected by gravity lines, and are then held in the series of ponds until the biological processes have rendered it ‘safe’.

**Summary of discussion**

Issues identified:
• How do we raise funds?
• The principles of applying labour-based technology in waste water projects.

Fund raising

Reporting was considered a major issue in receiving funds from so many different donors. Each one has its own reporting procedures, which would account for much administrative effort. As a result, some form of standardisation is required. Multi-donor review committees and missions have gone some way to addressing this problem.

Another method could be for each donor to have a representative within the organisation that they are funding. Otherwise, individual staff can take responsibility for a particular donor.

It is necessary to provide information for the benefit of donors, so that they can make value judgements on the impact of proposed programmes. It would be useful to conduct baseline studies, so that a more concise impact study can be carried out during the life of a programme. This could include socio-economic factors, and would probably be equally of interest to donors who would otherwise have to conduct these studies at a spatial ‘distance’ later on.

The time and resources needed to carry this out are not always available, and this was certainly the case at the beginning of SFD.

Carrying out baseline studies such as this would augment national statistics, and could be made available to Government departments and other actors and organisations. However, often it is not that information is lacking but simply that data is distributed between a number of different sources with no coordination between the two. The accuracy of the data could then be checked in the field, which would save time and money on the part of organisations such as SFD.

Participants understood transparency to be important and that all procedures should take this into consideration. An organisation should be open to visits by donors, and have an independent and internal audit system.

Donors want to see that their money is being invested in the places that most need it. Therefore, it is important that an organisation can justify the focus of their attention to potential donors, *i.e.* to the poorest of the poor. There are different requirements for each donor. Some require to be involved in the process or rely on other groups to do this for them.

*Applying labour-based technology to the non-roads sector*

It is important that appropriate criteria be identified when deciding which technology to use. For example; the choice of technology used in SFD wastewater projects has been made on the basis of the
following criteria: (i) that it should be suitable for labour-based methods, and (ii) that it should not require chemicals or be overly complex. Most of the donors who fund SFD rely on technology developed within Egypt. They do not get involved in the process, as they ‘trust’ SFD.

Mainstreaming labour-based technology requires more information for potential actors. The Central and Regional Government needs to become more aware of labour-based technology, so that they can make more informed decisions on its use. Documents and procedures could then be developed. This process should be done simultaneously, although change will take time.

Health and safety standards are a major issue in any contract. The standards currently used by most donor countries are beyond the scope and awareness of most contractors in developing countries. Change is needed but again, this will take time. Donors must understand that they might very often be changing people’s culture towards work.

Conclusions:
- Dispersion of funds needs to be carefully targeted
- All procedures should be transparent
- Baseline studies could usefully be made before a programme begins to demonstrate to donors the targeting of their funds, and to help evaluate impact at a later date
- Contracts should be standardised, and include labour-based technology
- There needs to be greater awareness of labour-based methods
- Appropriate safety standards should be developed and implemented as part of labour-based works

Group 2

Paper: Overview of the Sustainable Lusaka Programme

Country: Zambia

Author: Martha Mpande

Moderator/Rapporteur: Hanan Hussein/Rob Geddes

The presentation introduced the Zambian experience and the lessons learnt from an urban programme. Zambia is becoming increasingly urbanised, with 40% of its population living primarily in low-income settlements devoid of services. In 1964, Lusaka was designed to cater for 500,000 people. Due to migration, it now supports two million. Therefore, the current situation means that most people do not have any basic services:
• Solid waste management – there is no effective local authority system in the urban and peri-urban areas. As a result, rubbish is dumped and the piles are frequently large enough to block roads

• Potable water – there are very few piped water services. Most households get water from standpipes. They are limited to 20 litres per family per day for which they pay K200 (approx. $0.10)

• Housing – most housing is makeshift, as the local authorities cannot provide decent housing. One million people are thought to live in low-income settlements.

The Sustainable Lusaka Programme is part of the United Nations Sustainable Cities Programme, which involves 40 countries. It aims at long-term sustainable growth through integration of environmental planning, management, and implementation. It requires:

• Consultation with stakeholders at the city and community level, with issue-specific groups involving public and private participation

• Devolving tasks to (and close partnerships with) private sector contractors, whilst providing opportunities for entrepreneurship

• Capacity building, through the ILO, e.g. in project proposal writing, business planning and management.

There are currently three pilot settlements, each with an active CBO. Residents subscribe to these CBOs for rubbish collection. They contract the collection of rubbish out, thereby creating employment. The rubbish collection happens four times a month.

In Mombe, an illegal settlement of 30,000, the Government is now providing water, roads and schools (with the help of organisations like CARE International). They have no security of land tenure but relocating them would not be possible. The community is being consulted in an effort to build a sense of ownership.

**Summary of discussion**

The presenter raised three issues from her presentation:

• ownership of infrastructure
• importance of community consultation
• sustainability of the programmes.

It was decided that the issues raised were closely linked, and were hence discussed together. Before the discussion started, a number of interesting points of clarification were raised.

Participants felt that with increasing urbanisation came a difficult dilemma: government had to try and discourage uncontrolled migration into urban areas, but had a duty to improve the services in current informal settlements. The risk was that improving one would encourage the other. Although land tenure systems are often complex
and difficult to understand, progressive legalisation of settlements would only help to encourage further settlement.

It was observed that the definition of ownership is difficult, as all infrastructure is ‘owned’ by the local authority. However, they rarely have the means or resources to maintain and manage it. A partnership is needed between the local authority and the community. Community consultation is necessary to establish that sense of inclusion and responsibility. The community must understand the implications of maintenance and management of infrastructure. There also needs to be transparency to prevent misuse of funds. Local authorities often do not have a good reputation in this area.

The following question was raised, “Should funds be kept within the community, passed to the local authority, or both?” Participants felt that they should be used by the local community and a rental be paid to the local authority. People would readily contribute to something if they saw a need. However, management of funding would depend on whether the community had initiated the project or if it had been initiated for the community. It was observed that most programmes do not find out what the community want, but consult them with a preconceived plan of what will be implemented.

Participants also felt that planning should take into account the future demand. For example, in Heliopolis in Egypt, water pipes had been laid to provide a supply to houses up to five stories high. In the current context, most developments were 12 – 14 stories and so the supply was insufficient. However, investing for the future is more expensive.

In conclusion, the participants felt that:

- There should be shared responsibility between the local authority and the community. This would require a change in attitude
- Communities needed to understand the implications of sharing ownership and responsibility
- Part or all of the finances should stay in the community, or be returned to it
- Development should be phased, and take into account the possible future demand for services.

4.7.2 Implementation

Group 3

*Paper: New Challenges in Development: A Case Study in Sekhukuneland, South Africa*

*Country: South Africa*
To date, labour-based technology has been proven to work on large-scale rural road construction. However, in settlements and transitional urban areas there are new issues that have yet to be addressed.

Settlements present a more complex environment for physical infrastructure provision than a rural environment. Issues include wastewater, sewerage, schools, etc. Therefore the planning and engineering input must be greater.

Traditionally, physical infrastructure resulted from public sector spending with all the funds coming from departmental budgets. Labour-based methods arose out of a rejection of this. The techniques and technologies have been developed in this public sector environment. Labour-based projects are increasingly being driven, by donors, towards a private sector environment. The private sector is fully commercialised, making use of a reluctantly captive customer base. In this way, the risk is carried by contractors who are accountable for their work and can be penalised accordingly. For example, Sekhukuneland is working as a Trust, but how can this and other projects like it be sustained?

South Africa could be self-sufficient in resources, with limited donor support. It has a strong economy with a large potential workforce who would benefit from employment creation. However, despite these favourable conditions the success experience elsewhere (e.g. in Kenya) has not been realised. As a justifiable reaction to the previous regime, the current Government in South Africa has sworn to decentralise government. However, current capacity to support this policy does not exist as a result of past educational constraints and job reservation. There needs to be a balance between centralisation and decentralisation. Training is vitally important.

What can be learnt from the Kenyan experience?

- Start small and expand gradually
- Link institutional development to training
- Programmes must take a long-term focus
- Do we need any more pilot projects?
- Recognise that engineers are the primary problem in mainstreaming labour-based methods
- Recognise that labour-based technology does not necessarily fit into current expectations of construction overheads.
Summary of discussion

From the discussion, three issues were identified by the presenter:

- Why can’t success be replicated in South Africa?
- Transition between rural to urban environment for labour-based technology. What are the issues involved in working in settlements?
- How can we sustain and expand private sector projects?

Participants felt that there had been enough pilot projects for urban works as well. However, it was agreed that there was a need for engineering analysis of design in urban areas, as there are more complex issues to take into consideration.

Employment creation could be hampered by the ‘middle class’, who sit between those who need work and those who can provide it. This is often exacerbated by decentralisation and community participation. Who are the community? Representative committees should take into account the diverse characteristics in any community, and try to be truly representative: gender, religious and political groups, etc.

Prejudice against labour-based methods can also be found at the highest level, so senior level support is also necessary.

Participants questioned how private sector funds could be secured at a high level. It was felt that funds could be used in a more focused way when they came from the public sector. NGOs should also be included in the private sector. Although they were not profit driven, they were very reliant on their source of funding. The group felt that larger scale private funding would require a more formal environment. Consideration should be given to the fact that in large-scale projects, training represented a small component. The reverse was true in small projects, where training could take up a large proportion of the total budget.

The group questioned whether labour-based technology could be demand driven. Beneficiaries were keen to gain funding more than they would be for labour-based methods. The situation is currently supply driven, with labour-based projects being driven by donors.

In conclusion, the group agreed on the following points, which could be formed into recommendations:

- Planning in settlement areas needed greater thought and sensitivity
- There was an image deficit working against mainstreaming of labour-based technology
- Consideration should be given to the advantages and disadvantages of public and private sector funding (i.e. policy focus vs. profit driven)
Where labour-based technology has not achieved success, the method of implementation should be changed. There can be no ‘blueprint’ method.

Is it possible that labour-based technology may only work if it is donor driven? It would certainly need constant policy support.

Labour-based technology should be included in contracts to create a need.

There is a weak link between the need for employment and the political will to provide it.

A balance is needed between a centralised and decentralised approach.

Targeting beneficiaries should be done with great care.

Finally, one of the participants observed that Mozambique has been an amazing success story in terms of labour-based technology – thanks largely to the war!

**Group 4**

*Paper: IRAP as a Rural Road Planning Tool: The Lao PDR Experience*

*Country: Laos PDR*

*Author: Souksakhone Sontannouvong, IRAP Project*

*Moderator/Rapporteur: Mohamed El Shorbagy/Mohamed H Ashmawi*

The author presented lessons learnt to date by the Government of Lao PDR in their use of Integrated Rural Access Planning (IRAP) to plan and implement infrastructure in rural Lao that improves rural access. The Government has recognised IRAP as a useful planning tool contributing to the fight against poverty. Responsibility for implementing this technique falls at National, Provincial, and Local levels. The Local Roads Division is tasked with adapting this tool to their needs in future.

IRAP was first applied in Lao PDR in 1995 with ILO technical inputs and UNDP funding, who funded a programme with projects in three provinces. This was extended to another three provinces in 1997 during which time Sida-funded work in two additional provinces.

Currently IRAP looks at several important infrastructure needs:

- water
- health
- markets
- roads
- education.
The aim of IRAP is to improve rural living conditions by improving access to basic social and economic services and goods within these sectors. As IRAP is a participatory planning tool, it has required Government staff to learn new skills and change their perspective. Therefore, funding IRAP must also include the capacity building of those Government Departments involved in implementation.

The IRAP planning cycle begins with participatory data collection at the local level. This information is used to identify infrastructure needs to improve rural access. There is then a process of prioritisation against set criteria, where the proposed infrastructure is assessed against key socio-economic needs. The resulting areas of need can then be formulated into projects and implemented accordingly.

In the roads sector, this is supported by a Rural Roads Planning Strategy. This aims to rehabilitate the existing network and maintain it to a high standard. Where additional road links are needed, these can be constructed.

Road links are screened against socio-economic criteria and then a technical assessment is made. Wherever possible, maintenance is to be carried out using local labour and materials. This has passed into the Road Law.

The Government of Lao PDR has set policy priorities of rural development and poverty alleviation. Participation in the UNDP/Sida-funded IRAP programmes, and the cross-sectoral coordination that this requires, are seen to be key elements of the development of the roads sector to meet these priorities. This is supported by the Road Law that stipulates that rural villages must participate in the maintenance of their road links.

Organisational responsibility is spread between National, Provincial, and Local Governments. It is intended that IRAP will be further adapted to meet the specific needs of Lao situation and be integrated into other Department of Roads initiatives. This will require further staff training and careful monitoring.

The conclusion drawn from participation in IRAP Programmes is that it is an effective means of building consensus.

**Summary of discussion**

From the presentation, the group raised the following issue for discussion:

*Can IRAP be expanded to other countries and sectors?*

The group was concerned that by focusing on the rural roads sector, the cross-sectoral nature of IRAP would be lost. Many people felt that all sectors should be involved from the beginning, and could be easily catered for at the beginning of any roads rehabilitation programme.
There was recognition of the fact that a cross-sectoral approach went against the current structure and lines of communication and responsibility that were present in government departments. As a tool, IRAP was likely to be most effective where the government system was decentralised.

It was also felt that separating the planning from functional and operational ministries might also increase its effectiveness. IRAP is a tool for multi-sectoral project identification. It should be housed in the local planning structure and not solely within one sector. The outcome of IRAP application should be National Development Plans. However, it was felt that the key to success was to have decisions made at the local level, where staff were closer to the issues on the ground. Certainly, where rural roads were the target, additional assistance would be necessary for the agricultural system.

There was a strong link between road planning and labour-based maintenance of some parts of the network. Participants felt that IRAP was a very useful tool and thought that the ILO and ILO/ASIST could be very influential in disseminating information and practices to other countries.

A large amount of capacity building would be needed to provide government staff with the skills and knowledge necessary to make this a success. Do most countries have a planning agency that is capable of handling this type of multi-sectoral approach? However, it was felt that district level government was too small to support an IRAP planning team. The extent to which local communities are involved in IRAP depends a great deal on the technical and financial capacity at provincial level.

Another participant drew attention to priorities when using IRAP – is it intended to bring new facilities to the community or improve existing ones? Overall, it was felt that poverty reduction should be the highest priority when planning infrastructure, using IRAP. Some participants felt that the prioritisation criteria being used in Lao PDR were too inflexible, and might result in some interventions being missed.

Conclusions:
- The ILO and ILO/ASIST should assist governments in applying IRAP in specific projects, modifying it where necessary
- Information and training packs should be made available to other countries through the ILO and ILO/ASIST network
- IRAP should be centred at the lowest level at which effective decisions can be taken
- IRAP must be applied within a multi-disciplinary framework
4.8 WORKSHOP 6: URBAN ISSUES AND CAPACITY BUILDING

4.8.1 Capacity building

Group 1

*Paper: Training for Labour-based Road Works for the Kenya National Programmes and International Clients: Experiences and Lessons Learned*

*Country: Kenya*

*Authors: Barnabas Ariga and James Manyara, Kisii Training Centre*

*Moderator: Mahmoud Khalid*

The presentation was intended to share the experiences of labour-based training in Kenya. Training is being carried out for national and international participants. The issues covered include:
- training needs
- how far labour-based technology has been institutionalised
- experiences in training for international clients
- an analysis of success
- new training areas: for the urban sector
- capacity building
- lessons learned.

National clients include the Kenyan Ministry of Public Works and Housing, and the Institute of Highways and Building Technology. Their training objectives are taken from national policy that includes the need to:
- Redress the imbalance of skilled artisans
- Provide skills for self reliance
- Ensure a continuous supply of skills, working in collaboration with local training institutes
- Create capacity for increased and sustained activity
- Offer tailor-made courses for other ministries and external organisation on request.

Training has been ongoing for the last 20 years. With the support of ILO/ASIST at university level, *i.e.* development engineering, many African universities are now incorporating labour-based technology in their courses. However, there is a gap at college and polytechnic level. A new ‘craft’ course has been developed in Kenya, and accepted by the National Examination Board, and incorporated into technical training. It is nationally accredited and covers equipment-based and labour-based methods. It is aimed at post ‘A’-level candidates, and
lasts three years. There are also courses at Diploma level. The two programmes, Craft and Diploma, are very important in mainstreaming in Kenya. The training courses have also been handed over to ILO/ASIST in Nairobi for dissemination internationally.

At Kisii Training Centre, courses are also offered for other clients, e.g. Governments of Uganda, Ghana, and Sudan. There are three programmes per year, which have proved immensely popular. Since 1998, these courses have included candidates from 11 different countries from Africa, and elsewhere, e.g. Bangladesh, Laos, and Sri Lanka. The largest client is Tanzania and then Ghana.

Several factors have contributed positively to labour-based training in Kenya:

• Staff are available and well trained
• Continuous revision of courses takes place, and it is linked to national requirements and legislation
• Government is very supportive, which is essential when participants are coming from international clients (smooth the way for visas, etc.).

There is now a new area for training: for community upgrading of infrastructure, aimed specifically at urban areas. This is in recognition of the growing urban population, which accounts for the majority of poor people. Also new is taking a more integrated approach to rural travel and transport. Training needs for rural and urban areas are very different, and this is reflected in the coursework.

At Kisii, there is a continual policy of institutional capacity building. Lecturers are sponsored for continuous learning and often seconded to programmes for ‘on-the-job’ learning.

There are a number of lessons to be learnt from the Kenyan experience, and challenges to overcome:

• To maintain confidence in the product, there needs to be continual quality control
• Aggressive marketing is necessary
• Funding is not a ‘sure thing’. It needs to be constantly pursued
• Financial transparency is also an essential part of client confidence building.

Summary of discussion

Four key areas were identified for discussion, two by the presenter and two by the participants:

• The need for continuous training as an agent for sustaining labour-based technology
• The need to incorporate labour-based technology at all levels of training, from post-secondary to post-university
• The need to incorporate labour-based technology training into other sectors, e.g. water, wastewater

• Developing an institutional policy that recognises the need for contractor training in order to incorporate them into the process.

Discussion began with an observation that in Mozambique, it has been found valuable to take people from the institutes and put them into the field, i.e. on-site training.

At Kisii, they carry out both on-site and classroom-based training, but it depends on the focus of the training programme. In some cases, it would not be beneficial to do on-site training. Bringing people into the training institute also exposes them to new ideas from informal contacts with staff and other participants.

In West Africa, it is generally accepted that private contractors are capable of producing work to a high standard. The system in West Africa reflects this. In East Africa, contractors are mostly trained for works and routine maintenance. The force account system reflects the general perception that they are not capable of working to the same standard as Government.

One participant observed that Ghana already had a training centre, and questioned why people were sent to Kenya? This raised the issue of institutional capacity. Simply because a training institute exists does not mean that there is a corresponding capacity to train. Many skilled trainers do not see a future career in their local institute. Between Kenya and Ghana, there has been a two-way exchange of students so that they can be exposed to different ideas and processes. They return enriched and better engineers.

Training capacity has to be built internally before looking beyond the borders.

The key consideration is that training can only be successful if there is a market for the product. Dealing with the fluctuation of work is not easy. Policies must be in place to make contractor training a reality. In Kenya, there is an internal market but it is limited. Most candidates come from outside the country and will be returning to a different environment.

The Kisii Centre subscribes to international markers for quality. The majority of candidates are sponsored by their respective governments, and the rest by donors. Therefore, it is often the Kisii Centre that sets quality standards in many countries. However, they are also sent because there is a demand for that standard in their country.

This raised the issue of institutionalising labour-based technology. It was observed that participants at the conference had already signed up to the approach. The debate needs to travel beyond this forum and into the policy arena. Kenya has prepared a cabinet paper for debate.
At what level should this take place? Most engineers involved in labour-based technology do not work at a high enough level to become involved in the policy debate.

Contractors want to know the benefits and risks involved with labour-based technology. Unless this is clear, they will not feel encouraged to join in. Contracting as a whole is a risk. There is no definite work; you just have to go out and get it. Labour-based technology is no less risky than machine-based works.

Risk is a reflection of the way in which project procurement is set up. When you develop anything, in terms of policy, you need to look at every aspect of the process. How is risk distributed in different situations? There is a tendency to stick to tried and tested procedures without looking at things closely.

**Group 2**

*Paper: Egypt’s Social Fund for Development (SFD) Labour-based Contractor Training Programme: Its unique features and using labour-based methods in water projects in rural Egypt*

*Country: Egypt*

*Authors: Carl Berensten and Mostafa Noury, IT Transport and Carl Bro Management*

*Moderator/Rapporteur: Hanan Hussein/Rob Geddes*

The presentation introduced a programme for preparing emerging contractors to take their place in the market. The framework for this programme, supported by DANIDA, covers approximately 75% of Egypt (about 95% of the population). It has been undertaken through six groups in three batches. Close linkages have been established with all stakeholders in the programme, who represent the whole range of scales: SFD – Technical Assistance to the Social Fund for Development (TASFD) – Consultants Carl Bro/IT Transport and Chemonics – the trainees – local contractors.

The current programme includes water supply, roads, and environmental protection, but there are plans to include wastewater and buildings in the near future.

There were over 1600 applicants for the training programme, of whom 160 were selected. The process involved interviews and a two-stage written exam in both technical and business aspects of contracting. There are currently 154 trainees working.

The programme is conducted over a 37-week period and is divided into eight phases. For example:

- two weeks orientation
six weeks work shadowing (two weeks with each discipline)
• eight weeks apprenticeship (after specialisation).

Graduates are prepared for a competitive market, and have met with a
great deal of success; winning large projects in their own right. The
Government and public works departments have subscribed to
labour-based approaches and are including them in their normal
working practices.

While the current focus is on management, the next phase of the
programme will concentrate on the ‘foreman’ level staff.

Summary of discussion

The presenter put forward two issues for further discussion:
• Awareness of labour-based approaches
• In most ILO training activities, emphasis is placed on exchange of
  experiences. They encourage continuous contact between
  participants even after training.

Participants were concerned that lack of entrepreneurial skills
amongst trainees would prove to be the ‘missing link’. Technical
competency is not the only route to success. However, the programme
gave great emphasis to this aspect of contracting and applicants were
tested on their business skills.

Concern was expressed over whether skills in labour-based
approaches were enough to survive in a competitive market. There
was a call for feedback on whether contractors had had to resort to
equipment-based approaches to help them compete. If this were the
case, this could mean the need for incentives in terms of performance
pay and acceptable monitoring indicators, to overcome the change in
working methods.

4.8.2 Urban issues

Group 3

Paper: Employment Intensive Investment and Urban Poverty

Country: Global

Author: Liu Jinchang, ILO Geneva

Moderator/Rapporteur: Moustafa Semeida/Catherine Allen

The presentation focused on labour-based technology as it is applied
to urban infrastructure upgrading. In this environment, it looked at
local government at a city level.
Underemployment is a serious problem in urban areas. Worldwide, the population of slum dwellers is estimated at about 300 million, most of whom are ‘poor’ (living on less than $1 per day). Most slum dwellers who have work, have so in the informal sector, which is low paid with very little security. In Africa, the population growth rate is estimated to be 2.9% between 2000 and 2010. If this is the case, 8.7 million jobs will need to be found to support this growth. In urban areas, this also raises the issues of social services, infrastructure, etc.

Informal settlements often develop on very unsuitable ground. For instance, Kwakwe in Uganda is situated on very low-lying land. It often floods during the rainy season. As a result, latrines have to be built at a height of 2 m from ground level.

In the case of Hanna Nassif in Tanzania, infrastructure upgrading has provided employment opportunities. However, these will only last for the duration of the project. It would be more sustainable to create small-business opportunities for householders. This would have the effect of raising the economic status of households over the long term. This would need to be dealt with as a separate component of the project.

There is provision within the project and it supports small and medium sized businesses, mostly run by women. However, it is seen very much as a ‘side issue’ to the main project and those taking advantage of the credit do not receive any support towards gaining business skills.

**Summary of discussion**

Participants felt that governments had a difficult decision to make with policy emphasis. Urban planning had to give consideration to informal settlements in order to provide basic services, but they did not want to encourage further migration into urban areas. The World Bank is implementing the ‘Cities Without Slums’ initiative to address this issue, and has asked the ILO to become a partner.

There was concern that pilot projects, like the example in the paper, could not be scaled up due to funding constraints. It was observed that local government is normally very poorly resourced, as is central government. Would either be able to support the capacity building necessary to scale these pilots up to a citywide scale?

Concerns were also raised that the creation of CBOs would undermine the elected local government (assuming it was democratically elected) and would not be sustainable. There were also concerns voiced regarding ownership of infrastructure, which most participants regarded as being in the hands of local government.

On the other hand, if the CBO is well established it can have the capacity to negotiate with the local government, and express the local
community’s needs. In a pilot project in Dar es Salaam, the communities were only contributing to secondary and tertiary works. The primary works were still within the control of local government departments. Therefore, their synergy to the elected system was limited. There is an increasing shift in perceived responsibility from government as the sole provider, to one of being a facilitator by involvement of the private sector (including CBOs) in infrastructure development.

The concept of CBOs representing their own interests is not a new one. It is in operation, and working successfully in many communist countries, e.g. in Addis Ababa, where the city is divided up into Kebeles, each with its own representation. In Egypt in 1978, President Sadat invited NGOs to help with the establishment of Community Development Agencies. They benefited from the international experience of NGOs, and are now very successful. However, where membership of groups is voluntary, is this sustainable?

Should we be strengthening local government capacity or focus on community-based initiatives to provide services to informal settlements? Often, the capacity is not there and neither is the will. Involving the community becomes almost a form of ‘self-help’ to overcome that lack of commitment.

Participants questioned the reason for upgrading unplanned settlements when there were so many problems still to be addressed in the existing planned ones.

Informal settlements often grow on unsuitable areas, which causes problems for the future. Would it be worth investing in improving these areas, only to find that the resource allocation was not sustainable?

It was observed that an advanced planning approach would be better than fire-fighting by promoting a labour-based approach within urban communities. There needs to be a concrete policy for the long-term planning of formal and informal settlements, but are funds available at local government level? Many participants felt that they were not. Creating community groups would also duplicate local level government. This was particularly problematic where it was democratically elected. This approach could undermine the legitimacy of the government system.
Group 4

Paper: Community Infrastructure Project — Some Observations from the Jordanian Experience

Country: Jordan

Authors: Zaid Obeid

Moderator/Rapporteur: Mohamed El Shorbagy/Mohamed H Ashmawi

The presentation introduced some of the work currently being undertaken in Jordan. The Social Productivity Project, started in 1992, aims to develop the social situation in Jordan in conjunction with a Government restructuring plan.

It consists of the following components:
• to provide employment and training
• to provide micro-credit, and
• to provide community infrastructure inside and outside Oman.

The first phase will last for three years, followed by a second phase of seven years. The main objectives are to improve the living conditions of the poor in urban and rural communities, and build the capacity of selected institutions. This is to be achieved in three areas through involving on-site upgrading of infrastructure:
• in selected urban areas and refugee camps (housing)
• in municipalities and villages in rural areas
• in integrated pilot projects.

The Community Infrastructure Project, on the other hand, is dealing only with the municipalities outside Oman. It concerns itself with:
• storm water drainage
• rural access roads
• retaining walls
• street lighting
• solid waste collection
• community centres
• health centres
• schools.

The Ministry of Rural Affairs and the Environment is responsible for the supervision of this project; other aspects such as management and implementation are dealt with directly within the project. Technical Assistance is provided to the project by GTZ, costing approximately DM23 million during the first phase.
In order to create employment in the project areas, labour-based methods have been used wherever possible, e.g. Macadam method in road construction. Labourers are taken from the local communities and represent on average about 80% of the workforce. Contractors are encouraged to use the local labour force in their contracts. Changes were made to the technical specifications and contracts to encourage this to take place.

Local communities were also asked to contribute during the first phase, to the construction of roads using labour-based technology. This totalled over 50% of the required budget in some instances. The labour wage is $7 per day, which is in excess of the minimum wage (only $3 per day). This is normal practice and does not seem to represent a draw on project finances.

The local council, with an elected mayor, was involved in the selection of the municipalities through its participation in the provincial level council. Some members of the local communities were also included. Municipalities were assessed against a number of criteria, which were then independently reviewed by a consultant. Local councils are made up of elected political officials, but they also comprise a number of technical staff (unelected) who provide capacity in their areas. They have offered their services to Government line departments as a means of increasing capacity.

Some of the problems encountered during the project to date are:

• There were no design manuals or standard frameworks from which to initiate this type of work, including management issues. This resulted in a lack of common perspective amongst participants in the project, and GTZ had to produce a manual to redress this. A Project Management Manual is now being prepared covering project identification, design, implementation, and monitoring. This will be distributed very soon

• Assessing the capacity of project partners is an important part of project design. The need to build capacity was not considered until it was found that there were major deficiencies among technical staff of the Ministry of Rural Affairs and its branches. This was caused by severe resource constraints in most ministries included in the study

• Currently there is no decentralisation in the workings of ministries. A management information system is being developed to improve communication between different line ministries and other actors. The manual will clarify the role of all parties in the process

• Experience suggests that greater involvement of the local population is needed, in parallel to institutional capacity building.
Summary of discussion

The presenter raised the following issues for discussion:

- Should a decentralisation strategy involve the local community in the project cycle?
- At what cost does a government opt for labour-based technology in the achievement of its social and employment objectives?

One participant observed that there are difficulties in getting representation that reflects the true make-up of the community. It is often dominated by one or two voices. Therefore, decisions on infrastructure should be left to professionals who are trained in the issues related to planning and design. Most participants agreed that representation was an issue but felt that local people knew what they wanted, and with appropriate support, could prioritise and contribute to the planning of infrastructure that was commensurate with their resources.

From their own experiences, participants observed that often professionals will suggest technology or resources that are not suitable to the local situation, e.g. there may be cultural restrictions to the use of latrines which renders them inappropriate. The need for labour-based technology should also be weighed up against the need for the proposed infrastructure. Construction through labour-based technology may take more time, and communities want the resource more desperately than the work. For example, a community in Tanzania opted against labour-based technology for the construction of an earth dam, despite livelihoods based on subsistence agriculture, because they wanted the water resource ‘yesterday’. In another community, based on fishing and cattle, they wanted the earth dam constructed using machines. The option for employment creation might appear to be attractive, except that labouring went against their culture. Moreover, they earned more from their own activities than they would have received from labouring. In either situation, the community needs to be well informed so that an appropriate decision can be made.

Also, the choice of technology should be appropriate to the physical characteristics of the surrounding area, as well as to the wishes of the community. However, if they had never been exposed to labour-based technology, would a community be able to make an informed decision?

Awareness needs to be built up at the beginning of any intervention. There needs to be an element of capacity building within government departments so that there can be effective interaction between communities and staff. The needs of the community, and the technology used, would have a big impact on the quality of the works. For example, if labour-based technology were the favoured method
of constructing infrastructure its limitations would need to be taken into consideration in terms of the output. Quality standards are currently not flexible and would not be able to accommodate this.

The question was asked, “How can we include social benefits in an economic analysis?” Labour-based technology contributes to this, but people see it as being more expensive. Most assessments are made from the number of people who were employed and the cost of wages. There are not enough assessments of the improved living conditions experienced by people participating in the project.

Conclusions:
- There needs to be a standardised tool within the planning process to incorporate issues of community participation and involvement
- There needs to be a monetary value for achieving social objectives (social benefits, employment, etc.), so that labour-based technology can be costed into planning more easily
- The needs of communities should be reflected in the selection of technology, and therefore the quality of works that could be produced
- Post project social and economic impact assessments should be carried out.

4.9 WORKSHOP 7: PAPERS BY INVITATION

4.9.1 Papers by invitation

Group 1

Paper: Reinforced Concrete with Bamboo and Nylon Rope

Country: Mozambique

Author: Manoel Noronha and Michael Madanha

Moderator: Mahmoud Khalid

Research was carried out in order to compare the performance of reinforced steel concrete and that reinforced using bamboo or nylon rope. The authors tried different widths of bamboo, and in different positions. They also tried nylon ropes, stretched manually. This latter was difficult to duplicate, as they could not tell what force the ropes were stretched with.

The flexural strength of the beams made of the above-mentioned materials was tested by subjecting the beams to an incremental vertical load. The failing stage of the beam under loading was related to the loading and corresponding deformation.
Loading was done in incremental stages of 200 – 250 kg. The first load was 2000 kg. The distortion was assumed to have stabilised between loadings. The loading was 1.5 times the expected normal working load. The maximum deformation acceptable for a small slab was 2.5%.

Results showed that for a steel reinforced slab, deformation is smooth. The behaviour of steel and concrete is very constant due to interaction between the two materials.

For bamboo, up to 2.5 tonnes loading, the deformation is constant; after that the concrete begins to crack and the bamboo comes into action. The deformation starts getting steep but then it levels off.

The conclusions of the research so far include:
- The fact that nylon rope had not been stretched properly and hence had not worked very well
- Bamboo needed to be reinforced with double meshed layers
- How do you stop bamboo from degrading, as it is organic? However, it does show promise.

Summary of discussion

The presenter brought two issues:
- Is it possible to replace steel reinforcement with bamboo?
- Should we do more tests? What kind of tests? What about resistance against degradation?

The participants had a number of questions, before entering into a debate on the topics chosen.

Did you test to destruction? Was it a sudden failure? In concrete there is a relative period where you can carry out rehabilitation. Destruction occurred over a period of time as the load continued to be loaded. We loaded only after the distortion had stabilised.

Do you see this as a solution for rural areas? Bamboo is a plentiful material in Mozambique. Steel costs money, bamboo is ‘free’. It would cut down on costs. We are trying to experiment with anything that occurs naturally.

What is the relationship between labour-based technology and this? Normally, culverts are prefabricated. This would provide further opportunities for employment, as the bamboo would be cut by hand, the concrete would be mixed by hand, etc.

The fibres only start to work after it has reached the cracking phase because of the different natures of materials. At this point, water and microorganisms can get in and start the degradation process.
Can you estimate how long it would last? We do not know. We have tested whether they are up to the job (resistance). The next step is to test its life span. Over one year, they are fine. The bamboo had been dried in the sun before being used, to try and reduce its moisture content. We do not know the effect of leaving the resin inside. The natural state is the most effective.

Severity of cracks depends on the elasticity of the material you have used. Have you tried sisal? It is not available readily in Mozambique, but because they are natural fibres, they are vulnerable to degradation.

Using other locally available materials is a useful exercise. This should not be restricted to bamboo, as it may not be available elsewhere. There are plenty of examples of using local material in construction. It may not be received well by many engineers, but it has a place.

In the Philippines, bamboo is used very successfully. In Cambodia, experiments have been conducted. It has been used to construct sanitation facilities, with concrete. Experience is available from Asia and Costa Rica.

It is great to see field engineers doing their own experiments, being innovative in their approaches. How could they then get these ideas accepted by other engineers and put into practice?

Group 2

Paper: Funding labour-based projects under tight resource environments: the case of the Maseru Urban Upgrading Project

Country: Lesotho

Authors: Ajuruchukwu Obi and S Soltani

Moderator/Rapporteur: Hanan Hussein/Rob Geddes

The presentation gave an overview of the Maseru Project, aimed to build capacity within the State Council, create employment and infrastructural upgrading in an urban environment. In 1997, Maseru State Council was tasked to upgrade urban infrastructure and devote earnings from water sales to this work. At this point, their weak capacity became apparent:

- Only two qualified engineers, primarily committed to administration
- Of 24 senior management posts, 13 were vacant
- Little supervisory capacity, resulting in poor quality of works.

As a result, the UN funded a capacity building programme and appointed a UN Volunteer within the Department of Works, City Council.
Under UNV Strategy 2000, $360,000 was given for a two-year project to build capacity. Not more than 15% of those funds could be used to support training. For labour-based technology training, this is very little. As a result, new partnerships and funding opportunities had to be sought.

Employment was created on a rotational basis, such that every month a new set of people took responsibility for particular roles. This was usually decided by the chief or local council leader. Training a new person every month was a severe constraint and took a heavy toll on the budget.

During the Maseru Project, guidelines for the alignment of projects were made available and creative partnerships were built up to secure the additional funding necessary as development assistance declined. However, funds were becoming increasingly restricted. For example, the UNV budget did not provide for a vehicle or travel costs. As a result, no site visits could be made. This is a severe limitation and additional resources were necessary.

**Summary of discussion**

The presenter raised two issues for discussion:

- Governments can be so desperate to create employment that it can lead to a reduced quality of works. This undermines the reputation of the approach
- How can we work within the funding constraints imposed by donors? What scope is there for creating new partnerships and seeking funding elsewhere in order to achieve project goals?

As the discussion began, participants felt that they did not fully understand the concept of creative funding partnerships and could therefore make few worthwhile contributions to expanding on issue two. They felt that there were problems with the management of the process rather than funding. Donors are not sustainable, but in Lesotho, for example, an element of sustainability had been achieved. It was suggested that a further and more focused discussion in future would yield better results.

Donors often see management as a secondary issue to technical assistance. As a result, funds cannot be used for supervision. Supervision and management are an accepted part of conventional infrastructure development. In an effort to demonstrate that labour-based methods are cheaper, some aspects of the work are played down, *e.g.* supervision. As a result, labour-based methods are perceived as being ‘different’ from conventional methods. Creating new documents and separate specifications could be damaging rather than supportive.
An observation was made that donors often transfer infrastructure ‘packages’ from one geographical region to another, e.g. the methodology and cost of constructing a 10 km stretch of road in Zimbabwe is considered to be the same as that in Egypt. However, the labour-based market in Egypt has been well established and so the costs associated with urban infrastructure would be lower. Where contractors have to be trained, and a market established, this must be reflected in the project budget.

The group questioned the Lesotho experience and asked why donors had gone elsewhere rather than support the existing programme involving LCU. With obvious disagreement within the group, and insufficient clarity on funding issues, it was difficult to draw conclusions and recommendations from this discussion.

However, some key conclusions did emerge:

• That the management of the project process was more important than funding constraints
• That labour-based technology should not be so far removed from the conventional contracting environment. It would not help in mainstreaming the approach if different documents, specifications, and contracts were created.
• Greater emphasis had to be placed on the current situation in deciding the cost of training and capacity building for labour-based works. How well established is the approach?

Group 3

**Paper: ILO/ASIST-supported University networks in Africa and Asia: The role of educational institutions in mainstreaming labour-based technology**

**Country: Global**

**Authors: Dr Samuel Kofi Ampadu and Dr Danang Parikesit**

**Moderator/Rapporteur: Moustafa Semeida/Catherine Allen**

To date, labour-based methods have been an ‘add-on’ to training and the work of Governments, etc. How can we mainstream these, and make consideration of labour-based methods ‘normal’?

To achieve this, the authors felt that there needed to be a change in the ‘mindset’ of those involved in infrastructure development. Training certainly equips the receiver with a set of tools for practical use but education can go much deeper, and affect the way people think.
Cost

A key consideration to investment in education is cost. Over the course of a project, training can cost between 15% and 80% of total project costs. The cost of long-term education is harder to define. Current conventional education curricula are ill equipped to deal with labour-based methods.

Who should be targeted?

In order to achieve the mainstreaming of labour-based methods, a high level of commitment and understanding is needed by all those involved. These actors include:

- politicians
- engineers
- planners
- social scientists.

All actors need to be committed to labour-based technology, and have the capacity to incorporate the ideas into their area of work. However, no one can be expected to commit to something without first understanding it. Decentralisation has increased the number of actors that are involved.

Key questions are therefore:

- Who are the real target groups?
- What are the most appropriate institutions to deliver this education, and are they currently available?
- Who should take responsibility for financing such an approach?

Summary of discussion

In response to the three key questions posed by the presenter, the discussion was quite wide ranging. There was a general feeling that labour-based methods focused too much on technical issues, while labour-based projects sought to accomplish social and economic benefits to the community. Therefore, there was a need to broaden the perspective of actors to the realisation that labour-based technology is a part of the overall development process rather than being ‘one-off’ projects. Labour-based technology is often seen as owned by a particular sector, e.g. implementation was usually the responsibility of one government department, often that concerned with roads.

Participants felt that awareness needs to be built of other issues, and through this the ability to communicate between sectors. Also, that the process of project implementation can have as big an impact on the success of labour-based technology as can an understanding of its principles. However, incorporating new ideas into current curricula will involve extra cost. Education is the primary responsibility of
government but its budget is limited. Therefore extra support will be needed.

There was general agreement that while labour-based project teams are often multi-disciplinary, education does not reflect this. In contrast, many labour-based projects often attempt to take on too many issues. There is definitely a need for common language between actors. By focusing on education and training, the additional benefit would be to change people’s ‘mindset’. All participants agreed that donors and governments should take a long-term view, and donors in particular should be prepared to fund education as part of their programmes.

One participant observed that introducing labour-based teaching into education and training would only be possible if both staff and students see an attractive future in implementing what they are learning. They had observed that the principles of labour-based technology were easily taken up by non-engineering disciplines but this was not the case with civil engineers. Careful targeting would therefore be necessary. Education does not currently train for industry. There needs to be a greater inclusion of practical work into the curriculum.

Participants drew the following conclusions and recommendations as a result of their discussion:

• Universities and other institutions will not incorporate labour-based technology into course material unless they, and their potential students, can see an attractive future in it
• Developing education will require the support of policy, and a high level champion
• Governments and donors must take a long-term view to labour-based technology
• Education courses must incorporate a practical element, in preparation for industry.

Group 4

*Paper: The ILO’s InFocus Programme on Crisis Response and Reconstruction (IFP Crisis), and Employment Intensive Investments Programme (EIIP)*

*Country: Global*

*Author: Mike Shone, ILO Geneva*

*Moderator/Rapporteur: Mohamed El Shorbagy/Mohamed H Ashmawi*

On behalf of Mike Shone of ILO Geneva, a presentation was made on two parallel programmes: the Employment Intensive Investment
Programme (EIIP) and the InFocus Programme on Crisis Response and Reconstruction (IFP).

A crisis situation can occur in several ways, through: (i) armed conflict and its aftermath, (ii) natural disasters, (iii) abrupt financial and economic downturns, and (iv) large-scale social movements or political upheaval.

The ILO programmes could target all three phases of a crisis, although the crisis phase is an extremely challenging environment in which to operate:

- Pre-crisis → Traditional EIIP (Preventative)
- During crisis → Emergency measures
- Post crisis → EIIP/IFP with relevant focus.

The IFP is intended to develop new tools and methods and consolidate efforts in a crisis. It is the ILO’s intention to build its capacity to deal with crisis situations and their aftermath.

Traditional EIIP is an integral part of crisis management at the pre-crisis stage. It aims to seize opportunities within the scope of the programme, while adding value to other programmes that may be in operation (i.e., it should not operate in isolation). An effective framework should be established for transition of the programme to local control and the exit of the ILO. Examples of traditional EIIP focus areas are:

- participatory planning
- decentralisation
- linking central and local planning
- employment-friendly solutions
- appropriate technology
- capacity building
- cost effectiveness
- appropriate policy identification.

In a crisis situation, the response needs to be multi-disciplinary and flexible with a strong focus on the humanitarian issues as well as infrastructural requirements. During the post-crisis situation it is important to build bridges between short-term needs and the long-term perspective.

In this instance, the ILO can use its network of national partners to build effective linkages (e.g. Government, Unions, and Employers). The ILO has focused on particular target groups, such as land mine victims in Cambodia, to offer them a route back into the labour market. There has also been a focus on labour law, reviewing labour administration, law, and industrial relations in order to ensure an effective environment for recovery through appropriate interventions.
Employment Service Centres have been found to be particularly useful as a conduit between the unemployed and the employment market.

It is important that post-crisis interventions do not create ‘make work’ situations with too much investment in machinery, with little participation from the population who have been affected by the crisis. To prevent this, a thorough rapid needs assessment should be carried out, taking a broad perspective. It is also important to assess the capacity and resources available to post-crisis interventions. Only then can an appropriate contribution be planned, adding value to what reinvestment may be in progress already. ILO programmes should be handed over to local organisations before withdrawal.

**Summary of discussion**

Two issues were raised for discussion by the presenter, and a third was added by group participants:

- Are labour-based methods suitable for use in a crisis situation for infrastructure projects?
- Does the IFP diffuse the long-term policies and strategies of the EIIP and thereby compromise standards?
- To what extent do these ILO initiatives link to the activities of other NGOs and agencies in crisis situations? Is this joined-up thinking?

Participants felt that the ILO should not be involved in a crisis situation, even when asked to do so by a partner government. However, participants felt that the ILO did have an important role to play in the pre-crisis and post-crisis phases.

An Oxfam representative observed that inappropriate responses within the first four weeks of a major event often constitute the ensuing crisis.

It was noted that the UNHCR created infrastructure as a by-product of its own mandates. Therefore, they and other agencies could benefit from staff trained in labour-based methods for application during a crisis. This could be a strategic role for the ILO by providing this training and contributing to ‘disaster preparedness’. Another could be through monitoring, *i.e.* early warning of crises, and building capacity of governments and other partners through their traditional programmes.

There was some debate as to the definition of a crisis, in the short and long term. It was decided that crises happened quite suddenly, and included the period of adjustment afterwards. During this time, action needs to be taken very quickly, making best use of what is available. Post-crisis included long-term situations, *e.g.* Afghanistan, and the long-term aftermath of an event, *e.g.* Honduras, where many people...
are still living in tents. During this time, responses could be more considered.

Card responses to issue one (Are labour-based methods suitable for use in a crisis situation for infrastructure projects?) included:

- Labour-based methods could help optimise solutions by using the resources available
- Labour-based methods could help keep an agitated, post-crisis population busy, and therefore calm
- Cash transfer is essential to alleviate the effects of a crisis
- Only if they can respond to a crisis situation
- Possibly, provided a quick response is possible and labour-based methods are appropriate
- Labour-based methods may not achieve all that is necessary
- Labour is often easier to mobilise in a crisis than machinery
- Are labour-based methods fast enough?

Card responses to issue two (Does the IFP diffuse the long-term policies and strategies of the EIIP and thereby compromise standards?) included:

- Working with people suffering post-crisis trauma could be dangerous for aid workers
- This is something that the ILO must be careful of
- Possibly, as crisis-based programmes are very short and compact
- Emergency planning must be incorporated with ILO policies
- It should contribute to the speeding up of the process and procedures.

4.10 Plenary Session for Workshops 5 – 7

To sum up what had been discussed during the last three workshops, and to incorporate the feelings from the discussions during previous days, two diametrically opposite views were presented by the chief moderator:

- That there is not enough engineering in labour-based technology
- That there is far too much engineering in labour-based technology.

The chief moderator pointed out that many people had expressed the feeling that there was a lack of comparability between conventional and labour-based methods. Standards were being compromised and so they perceived a lack of engineering soundness within labour-based approaches. However, other people felt constrained or compromised by the engineering component of labour-based technology and reasoned that social outcomes were otherwise being neglected. For these people, there was too much engineering in labour-based technology.
Both views were considered justified, but simply added to the difficulties in mainstreaming the approach. It was agreed that a common understanding and guidelines have to be established so that all those who undertake labour-based works have the same reference point. This will enhance commitment to the same goal. To this end it was suggested that labour-based technology should be considered as ‘real’ engineering that considers all the many important factors of development. It was also considered that conventional engineering, as a result of its traditional approach, leaves a lot of these important factors out.

Another contradiction that had arisen during the conference was the need for political commitment at the highest level for labour-based technology to be mainstreamed. In contrast, many participants had observed that decisions should be made at the lowest possible level of government. This was particularly important in areas undergoing decentralisation.

The question still remained “How do we mainstream labour-based works?” One optimistic participant felt compelled to ask whether the current system would cope with the demand if this were to be achieved. The question then arose “Is there capacity to deal with this?” However, the participants felt that until engineers accepted that labour-based technology was a valuable part of being an engineer, it is going to be difficult for labour-based to be perceived as a respectable activity. This also unbalances decisions on technology choice.

During the group discussions it was asked, “How do we select appropriate technology?” They observed that the decision was often made in advance of project identification. This was due to the need of donors and ministries for clear planning. Being able to budget for specific technology choices at an early stage fits with their planning processes but does not provide the flexibility needed for decisions to be made at a local level.

**Socio-economic benefits**

A key point raised by participants was the need to assign monetary values to economic employment and social benefits. It was recognised that this information would not only help support the case for using labour-based approaches but also aid in technology selection.

One participant observed that labour-based programmes will remain at the margins unless their outputs can be measured on an equal footing.

It was recognised that quantifying social cost and benefit was very difficult but that this information was necessary. There have been a number of impact studies carried out, not only of infrastructure projects. Why can we not learn from them? Would the socio-economic
measurements being suggested take into consideration the effect that labour-based technology had on poverty alleviation?

**Misrepresentation of labour-based methods**

Although practitioners saw the value in being able to compare labour-based with conventional methods, in some ways the approaches were very different. Participants observed that there were differences in management structure between the two but that these were rarely publicised or communicated to donors. The implications were crucial and past misrepresentation might partly explain why labour-based approaches were considered with suspicion by governments and donors.

For example, they are always told that for every bulldozer that is not used for construction, over 100 people will be employed. However, to do this will require at least ten foremen, assistant resident engineers, and other actors. Policy makers and donors often overlook these important factors, and without them, poor quality work results. Supervision is frequently not included at the early stages of planning. Hence, the work that would have been done by the contractor on a conventional project is now being done by the project manager.

A participant from Zimbabwe gave the example of how difficult it had been to convince people in government that labour-based technology was a valid approach to infrastructure development, particularly roads. While the benefits were clear they expressed doubt about the quality of the product. However, after the cyclone it was observed that roads constructed using labour-based methods had survived much better than conventionally constructed ones. It was an example that everyone understood and appreciated. Suddenly the demand for labour-based construction soared.

**International standards**

Another way to bring conventional and labour-based methods closer together might be to incorporate or create international standards for contracting and quality. However, this might be seen as too much engineering influence from non-engineers, and prevent the flexibility that is inherent in the approach.

**Training and education**

A great deal of the discussion centred on the issue of training and education, and several participants were directly involved in this aspect of labour-based promotion. It was felt that there was no longer a need for detailed courses at undergraduate level. Rather, it was more important to engender consideration for social and economic issues, and the ability to debate rationally and communicate between the different sectors involved. These issues should be covered at a much earlier stage, perhaps even in schools. There was an overall
feeling that these issues were being introduced too late into the curricula. It should be there in the first year of university or technical school. The engineer must be made to consider his or her role as an engineer in society.

It was felt that a clear distinction has to be made between education and training. Education leads to a change in someone’s perspective on a situation, while training focuses on the acquisition of skills. They take place in different types of institutions and learning environments. Many programmes conduct training, but do not support education.

Those who are to be involved in policy and legislation development rarely come through the technical training system. Rather, they pass through an education system that is not likely to be engineering-based; very few politicians are engineers. Therefore, few high level politicians have ever been exposed to the labour-based approach. Therefore, labour-based programmes should support the introduction of labour-based considerations into other sectoral curricula. It has been observed that the social scientists buy into labour-based approaches much more easily than do civil engineers.

“Do we have the capacity to take this training and education forward?” There was agreement that this capacity does exist but possibly not in the educational institutions. Very few practising engineers move back into the education system.

It was felt that current high-ranking politicians would benefit from knowledge of labour-based approaches. However, they would not be willing to undertake ‘training’, as this would undermine their senior position. Therefore, there was a need to go beyond education and training. Policy level actors are much more willing to attend workshops, which should become the focus of an awareness campaign. This is an additional level of dissemination.

While education and training would help to change people’s perceptions of labour-based approaches, marketing is also an important consideration. One participant observed that labour-based methods are still struggling to be accepted. The question was raised that perhaps the way in which labour-based approaches were being marketed to non-engineers was not successful, and should be changed. For example, a businessman would never advocate the repeated use of the same method to market his business. There was an overall feeling from the seminar that it was time to change the approach. The question was raised “Are the technocrats really the best people to market this approach?” Many participants felt not. There was concern that perception would not be changed by the constant presentation of hard core data, although this was needed to support the case.
Raising expectations

An important observation was that there were many complex objectives associated with labour-based technology. Often, this gave the impression that the approach could single-handedly solve problems such as poverty, unemployment, etc. There is a danger in promising too much, and labour-based methods are only one possible tool in addressing these problems. Failure to meet raised expectations can only have a detrimental effect on the approach. However, some participants felt it was worth the risk of raising expectations.

In conclusion, it was felt that labour-based technology alone was not the best way to solve the social and economic problems experienced in many countries. However, it did have many beneficial outputs that could make a valuable contribution as part of an overall strategy. There was an urgent need for these benefits to be measured in a way that is recognised by donors and governments alike. As an approach to the construction of infrastructure, labour-based technology is an appropriate solution that meets the demands that are required of it.

Observations of a participant at the seminar:

Lulu Gwagwa, a participant and Director of a large NGO in South Africa made a short speech on her experiences of the last four days. She had identified three topics that had come up consistently throughout the group sessions, but which she felt could have been drawn out more during discussions. There needed to be greater emphasis on practicalities rather than theory, namely in policy issues, project implementation, and education and training.

In her experience, policy interventions were essential to the success of labour-based methods. They created an enabling environment that supported the use of these technologies and ensured that labour-based methods were seen as an overall approach rather than a series of disjointed projects.

Quantification of social benefits was not easy, and all participants had identified the need to bring this into the ‘equation’ for project design and monitoring. However, who is this to be done for? The needs of politicians, communities, implementers, etc. are very different and statistics can be made to say whatever you want.

The key issues were sustainability and replicability of labour-based programmes. Certainly, engaging communities was an important consideration but there was a need for countries to communicate their experiences. Rather than becoming involved in crisis situations, the ILO could play a vital role by providing a means for bringing together similar issues and disseminating new innovations. This conference was obviously a good way to network with new and old colleagues, but still more could be done.
4.11 Final Conclusions

The overall conclusions from the seminar were presented as a draft ‘Cairo Statement’. Through open debate, participants modified and finalised this statement until it best represented their recommendations from the seminar (see Section 6).

Participants felt that there was a need to tackle the perception of the private sector and donors, as well as government. This could be achieved through education, to raise awareness of labour-based methods. However, this should not be restricted solely to engineers, although they were often the hardest group to ‘win over’. There needed to be greater awareness of the responsibility of the engineer in society.

Policy should be closely linked to actual implementation. During group discussions, the need for high level support and an enabling policy environment were considered very important to the success of labour-based technology. It was questionable whether a further international framework for procurement would be helpful. Participants observed that the FIDIC Short Form of Contract was quite adequate, but did see the need to make some amendments to it. Labour-based methods often suffer from being viewed as separate from normal machine-based methods of construction. Creating new frameworks would simply perpetuate this perception.

Rural access planning was seen as a useful tool in response to decentralisation, and one that could ensure project sustainability. It would also provide a vehicle for community participation in the planning and implementation process. Decentralisation is likely to bring people’s needs to the fore, and allow them much greater say in the infrastructure that they depend upon.

4.12 Closure of the 8th Seminar

The participants then went on to discuss the Cairo Statement (Section 6). After this debate, an opportunity was given to a delegation from Mozambique to lobby to be the next venue for the ‘Ninth Regional Seminar for Labour-based Practitioners’.

This was followed by closing remarks from Jane Tournée of ILO/ASIST, Potenciano Leonciano on behalf of the Southeast Asian participants, and Dr Hashim from SFD, in which gratitude was extended to all those who had worked so hard to make this conference a success.

The Egyptian pyramids of Giza were hailed as the ultimate example of labour-based methods, where quality was not compromised. Yet modern technology has failed to unravel the secrets of their technique! We have a little to be ashamed of.
5 Field visit

5.1 INTRODUCTION

The field visit was organised for Day 3 of the seminar and visited three sites accessible from Cairo. The sites were:

- Rehabilitation of a water supply network, Cairo Governorate
- Rehabilitation of a canal retaining wall, Giza Governorate
- Water and wastewater system, Cairo Governorate (Old Cairo).

There was no formal discussion of the site visits during the seminar. Overall conclusions are drawn from the comments of participants who were willing to share their experiences. The observations made by participants add value to the description of the site visit, given in the handouts.

5.2 SITE 1: WATER SUPPLY NETWORK

*Helwan (Arab Ghoneim) Water Project*

*Funded by IDA/The Netherlands*

*Sponsored by the Cairo Governorate with the Water Authority acting as the intermediary agency*

*Overall objective: Help eradicate poverty and ameliorate low quality of life by providing economic and social basic community infrastructure services using labour-based methods*

The project was sited in a poor residential area of greater Cairo and had officially begun in September 2000. It was expected to last four months. The project had been chosen by the community as being their first priority for an infrastructure project. The existing water supply system was in a very poor condition and the community did not have access to a safe drinking water source. As a result of this project, 1200 m of water supply network would be rehabilitated.

The project was implemented by a main contractor with a number of labour-only sub-contractors from within the community. The main contractor supplied the materials and the sub-contractors provided the labour. The funding of the project was based on 25% from the Governorate of Cairo and 75% from a Dutch donor. The Governorate would recover its contribution from the community through metering of the water supply to each house.

“I found it encouraging to see how ordinary manual labour can produce something like that without machinery…” — A participant
The local wage rate was approximately $4 per day. Labourers achieved an optimum task rate of 3.2 m$^2$ of excavation in one day. Each sub-contractor employed a maximum of 27 labourers on a rotational basis. Working conditions were difficult since labourers were required to excavate within small, cramped trenches. These trenches were often filled with sewage and wastewater, due to the high water table, which was contaminated from nearby tanks and latrines.

5.3 SITE 2: REHABILITATION OF CANAL RETAINING WALL

*Environmental Improvement and Canal Protection Projects, Retaining Walls (Zomer Canal)*

*Sponsored by the Giza Governorate with the Irrigation Department in Giza acting as the intermediary agency.*

The original canal retaining wall had been in a poor state of repair, which blocked the through flow of water and increased the risk of flooding. The retaining wall covered 27 km of canal and had been completed over three years using labour-based methods. The materials and labour were local and had resulted in a high standard of completed works. Unfortunately, there is little control over the dumping of rubbish; so much waste was being tipped into the canal that this was also reducing the flow potential.

Labour came from the local community and was organised in a similar way to the water reticulation project. Gangs had worked in three shifts over a 24-hour period in order to achieve a finished product in the time allowed.

“From my personal perspective, Cairo is highly populated and this complicates job opportunities. Therefore, the building of the canal using labour-based methods is one favour that many will not forget...” — A participant

The dumping of waste within the canal was severely affecting the flow rate of water, despite the newly renovated retaining wall. Some doubt was expressed that it was the community who chose this project, above any other possible infrastructure development in their area.

Unfortunately, it was not possible to see technical procedures at the site, as the retaining wall had already been completed.
5.4 SITE 3: WATER AND WASTE WATER SYSTEM

*Infrastructure Improvement Project, South Zone (Helwan and El-Tebeen Districts)*

*Funded by IDA/The Netherlands*

*Sponsored by the Cairo Governorate with the Water and Waste Water Authority acting as the intermediary agency*

*Overall objective: Help eradicate poverty and ameliorate low quality of life by providing economic and social basic community infrastructure services using labour-based methods*

The project, started in 1998, was being undertaken in a low-lying area of old Cairo noted for its historical and religious significance. The water table is above ground level in many places, and without sewers wastewater could only collect in the residential areas causing severe hazards to the health of local populace.

The project consisted of installing connections to 2120 houses and rehabilitating a 14.7 km network. In addition, aided by pumping stations, sewage and wastewater was diverted to the main gravity line some distance away requiring 12 km of gravity lines to be commissioned. In addition to this, 7 km of paved roads were constructed, and considerable community development activities took place. All project activities were expected to be complete by December 2000.

“Dedication of the labourers at the site was marvellous...” — A participant

Since the completion of the project, funds had been granted to upgrade many of the houses in an effort to attract tourists into the area.

5.5 GENERAL CONCLUSIONS

The field visits accorded an excellent opportunity for participants to see the results of the SFD Public Works Programme. It was felt that the sites visited were good examples of the type of work that are possible using labour-based and labour-intensive methods. The fact that they were not road projects was much appreciated.

Overall, participants felt that the site visits demonstrated what could be achieved with “appropriate planning, and the high standard that can be achieved”. The projects made a significant contribution to providing labour in areas of high urban underemployment. The projects provided skills and experience that would be beneficial to all those who had been involved.
There was some concern expressed that the differences between labour-intensive and labour-based works had not been made clearly enough. One person remarked that the field visits had especially fallen into the ‘labour-intensive’ category, meaning that there was a heavy emphasis on manual labour (managed by labour only contractors). This was compared to the more sophisticated ‘labour-based’ project approaches whereby a mix of small equipment, hand tools, and manual labour is being used. Other participants may not have realised what made each one different.

At the water reticulation site, some people felt that a method of dealing with sewage and wastewater might have benefited the community more than fresh water. However, the project had been chosen by the community themselves and it was considered that there must be factors unknown to the seminar participants that made fresh water supply a more needed resource.

It had been difficult to judge quality control procedures at the sites, as many had been finished and therefore the technical procedures could not be demonstrated. However, the impression of the finished product was good.

As a result of the conditions in which many labourers had to work, due to the high water table and presence of sewage, health and safety was considered a key issue arising from the field trips.
6 Conclusions and seminar recommendations

The overall conclusions from the seminar were presented as a draft ‘Cairo Statement’. This was drafted by the moderators, in discussion with ILO/ASIST and SFD, and then modified by participants through open debate, to produce the final ‘Cairo Statement’.

It was agreed that the overall objective of the conference was to identify how best to mainstream labour-based methods. Recommendations fell into eight categories:

- perceptions
- policy support
- education and training
- procurement
- technical standards
- ensuring participation
- planning
- implementation and monitoring capacities.

The aim of the Cairo Statement was to deliver recommendations that would be suitable for organisations interested in labour-based technology, *e.g.* Governments, Agencies, *etc.*

**Perceptions**

The Seminar wishes to raise the awareness of the contribution that labour-based approaches can make to infrastructure provision taking account of economic and social development.

The Seminar wishes governments to promote the potential for labour-based methods across a wide spectrum of infrastructure and ministries.

**Policy support**

The Seminar believes that political support from the highest level is essential to the mainstreaming of labour-based programmes.

Such support should be manifested in the formulation of policy, implementation strategies, and the allocation of resources in respect of infrastructure provision.

The Seminar believes that the private sector has an indispensable role to play in the dialogue for development of policy for labour-based works.
**Education and training**

The Seminar believes that all engineering education must include an awareness of the responsibilities of the engineer in society and of technology choice for long-term change.

For more immediate effect the Seminar believes that labour-based methods should be promoted during the training of engineers.

For more immediate effect, the Seminar believes that labour-based methods should be promoted in the education and training of all professionals involved in labour-based works.

**Procurement**

The Seminar believes that systems of procurement should be revised to provide a more favourable environment for the promotion of labour-based works.

The Seminar emphasises the need for amendments to international frameworks such that procurement documentation becomes suitable for labour-based works.

**Technical standards**

The Seminar calls for the development of international best practices as a framework for the appropriate level of service in infrastructure provision.

This would allow the documentation to build on regional and national standards where these already exist.

The Seminar believes that the quality of output will be determined by need and not by the method of construction.

**Ensuring participation**

The Seminar believes that keys to the success of the use of labour-based methods are that:

- the people most directly affected should be actively involved in all aspects of the planning, decision making, and implementation process, and
- use be made of local contractors, local NGOs, and civil society organisations, with appropriate support and training, i.e. the distribution of opportunity at the lowest level.

The Seminar believes that for the successful use of labour-based methods, sound labour policies and practices are necessary.
Planning

The Seminar believes that integrated rural access planning is an important tool in the formulation of sustainable projects; that its key feature is its multi disciplinary nature, which must be preserved in its use; that problems of cross sectoral decision making should not prevent its use.

Implementation and monitoring capacities

The Seminar believes that governments should establish at the highest level a body, including the private sector, to facilitate implementation, and to monitor investment strategies in support of established policies, and to provide a mechanism to give guidance and direction to future budgets.

In addition, the participants felt that the next regional seminar should:

- Review progress on the recommendations of the Cairo Seminar
- Allow more time for discussion in groups
- Define a clear and focused theme.
7 Annexes

7.1 Annex 1: Eighth Regional Seminar Programme

Sheraton Hotel, Cairo, Egypt, 15 to 19 October 2000

Saturday 14 October 2000

18:00 – 20:00 Early registration in the Group Lounge, Ground Floor, Sheraton Hotel

Day 1: Sunday 15 October 2000

08:30-10:00 Registration in the Group Lounge, Ground Floor, Sheraton Hotel

Opening Session, Saladin Ballroom

10:00 – 11:00 Opening Speech by the Host: Social Fund for Development
Address by Representatives of the Government of Egypt
Address by Representatives of ILO and ASIST

11:00 – 11:30 Tea/Coffee Break in Saladin Foyer

Plenary Session, Saladin Ballroom

11:30 – 12:30 Introduction to the Moderator
Keynote Paper by Geoff Edmonds of IT Transport, UK
Questions
Moderators’ instructions for the seminar

12:30 – 14:00 Lunch Break, El Hambra, 26th Floor, Cleopatra Tower

Presentation of Papers

14:00 – 15:30 Group Session 1

Urban Communities

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<tr>
<td>Dr Wilbard Kombe (Tanzania)</td>
<td>David Sims and Keith Brooke (Egypt)</td>
<td>Annabel Davis (Zambia)</td>
<td>Pine Pienaar (South Africa)</td>
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<td>Urban poverty and employment promotion through community infrastructure upgrading – the cases of Hanna Nassif and Tabata Projects in Dar es Salaam</td>
<td>Case study of Manshiet Nasser – Labour-intensive provision of basic infrastructure and participatory upgrading of a dense low-income urban settlement</td>
<td>Promoting sustainable rural livelihoods in Zambia: A case study</td>
<td>Inclusion of welfare distribution objectives in the economic evaluation and choice of urban transport projects</td>
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<td><strong>Plenary Session, Saladin Ballroom</strong></td>
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### Day 2

#### Monday 16 October 2000

**Presentation of Papers**

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<th>Time</th>
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<tr>
<td>08:30 – 09:45</td>
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| **Policy**   | **Saladin 1** FRP Team (Mozambique)  
Floods in Mozambique – planning the labour-based contribution to recovery  
**Saladin 2** Shuva Sharma (Nepal)  
Institutionalising a participatory approach to rural infrastructure development in Nepal  
**Nefertiti 3** Prof P D Rwelamila (South Africa)  
Labour-based employment practices - the need for a paradigm shift in procurement policy  
**Nefertiti 4** Dr Danang Parikesit (Indonesia)  
Mainstreaming labour-based programming in Indonesia |
| 09:45 – 10:15| Tea/Coffee Break in the Saladin and Nefertiti Foyers                    |
| 10:15 – 11:30| Group Session 3                                                         |
| **Policy**   | **Saladin 1** Justin Runji (Namibia)  
Development and implementation of a national Labour-based works policy  
**Saladin 2** Under Secretary of State, MRD, Mr Suos Kong (Cambodia)  
Development of a policy for rural roads  
**Nefertiti 3** James Croswell (South Africa)  
The use of improved management and testing procedures in labour-based construction  
**Nefertiti 4** Mike Knowles (Global)  
Soil stabilisation for road pavements using ionic stabilisers: A state of the art review |
| 11:30 – 11:45| 15 minutes to move between sessions                                     |
| 11:45 – 13:00| Group Session 4                                                         |
| **Capacity Building** | **Saladin 1** Ahmed Gaber (Egypt)  
Labour-based methods – a tacit knowledge perspective: the case of Egypt  
**Saladin 2** FRP Team (Mozambique)  
The hidden story – feeder roads in Mozambique  
**Nefertiti 3** Sabina Mahapa and Mac Mashire (South Africa)  
Social exclusion and rural transport: Gender aspects of road improvement in Tsitwe, Northern Province  
**Nefertiti 4** Potentiano Leoncio (The Philippines)  
Linking local level planning to Labour-based Technology works in The Philippines |
12:30 – 14:00  Lunch Break, El Hambra, 26th Floor, Cleopatra Tower

**Plenary Session, Saladin Ballroom**

14:00 – 15:30  Groups reporting back

15:30 – 16:00  Tea/Coffee Break in Saladin Foyer

**Plenary Session, Saladin Ballroom**

16:00 – 17:30  Groups reporting back, and wrap-up

### Day 3  Tuesday 17 October 2000

#### Site Visits

08:30 – 15:00  
- Rehabilitation of a water supply network, Cairo Governorate
- Rehabilitation of a canal retaining wall, Giza Governorate
- Water and wastewater system, Cairo Governorate (Old Cairo).

**Formal Dinner**

20:00 – 24:00  Saladin Ballroom

### Day 4  Wednesday 18 October 2000

#### Presentation of Papers

08:30 – 09:45  Group Session 5

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09:45 – 10:15  Tea/Coffee Break in the Saladin and Nefertiti Foyers

#### Presentation of Papers

10:15 – 11:30  Group Session 6

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<td>Employment-Intensive Investment and urban poverty</td>
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11:30 – 11:45  
*15 minutes to move between sessions*

**Presentation of Papers**

11:45 – 13:00  
**Group Session 7**

**General**

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13:00 – 14:30  
**Lunch Break, El Hambra, 26th Floor, Cleopatra Tower**

**Plenary Session, Saladin Ballroom**

14:30 – 15:30  
**Groups reporting back**

15:30 – 16:00  
**Tea/Coffee Break in Saladin Foyer**

**Plenary Session, Saladin Ballroom**

16:00 – 17:30  
**Groups reporting back, and wrap-up**

**Evening Excursion**

18:00 – 21:00  
**Sound and Light Show at the Pyramids**

**Day 5**  
**Thursday 19 October 2000**

**Final Plenary Session, Saladin Ballroom**

08:30 – 11:00  
**Formulation of draft ‘Cairo Statement’**

11:00 – 11:30  
**Tea/Coffee Break in Saladin Foyer**

**Seminar Close, Saladin Ballroom**

11:30 – 12:30  
**Finalisation of ‘Cairo Statement’**

Bid by Mozambique to host next seminar  
Closing remarks

12:30 – 13:30  
**Lunch Break, El Hambra, 26th Floor, Cleopatra Tower**

**Afternoon Excursion**

14:00 – 18:00  
**Cairo Museum**
7.2 ANNEX 2: OPENING SPEECHES

7.2.1 Dr Hussein El Gammal, Managing Director, Egyptian Social Fund for Development

The SFD was established in 1991 by presidential decree. It has proven to be an efficient tool for providing social and economic infrastructure in unserved areas in need of development. Hence the goal of SFD was to act as a safety net to protect vulnerable groups from the effects of economic reform and structural adjustment, started in 1990, and improve their positive impact.

In addition to the Egyptian Government, SFD receives funds from 17 donors either through bilateral or multilateral agreements. SFD underwent two phases of funding and operation. The second phase is close to completion, and a bridging phase is about to start which will take it to 2003. It is intended that at the end of the bridging fund, SFD would have become an apex development organisation with the primary goal to develop social capital, through:

- economic empowerment
- credit delivery and enterprise development
- development of human resources
- skills upgrading
- community organisations
- creation of an enabling environment, through infrastructure provision and technology transfer
- providing a social safety net through targeting the poor and misplaced.

All this will call on SFD’s core competencies as an innovator, implementer, capacity builder, technical adviser, and financier.

SFD is divided into two units. One carries out the basic functions comprising five programmes: public works, community development, enterprise development, small enterprise development organisation, human resource development, and institutional development. The second unit carries out responsibilities by operating and delivering services to beneficiaries, monitoring progress in the field, and solving any problems. The whole organisation works from 23 offices covering all 26 governorates.

The SFD’s Public Works Programme aims to generate employment opportunities by investing in labour-based public works programmes, thus improving basic services in rural areas and urban pockets where households are deprived of services. The community development programme ensures the efficient use of facilities. The programmes are organised in such a way that all target beneficiaries are most effectively serviced by SFD.
The Public Works Programme funds social, economic and productive infrastructure projects mostly in rural areas. The majority of interventions include potable water, roads, wastewater, and environmental and public works. The aims are to:

- ensure sustainability by upgrading the capabilities of the beneficiaries and enhancing their awareness
- establish well entrenched efficient systems to manage and monitor public works projects
- create new contractors who will execute public works projects in villages
- expand labour-based methods to line ministries and government as well as to the private sector.

The gains achieve by the adoption of labour-based methods are numerous and have benefited the cause of employment generation in Egypt. They have helped to achieve:

- enhanced project sustainability due to local ownership
- development of community capacity to execute projects thorough local contractors
- enhancement of skills, leading to greater employment potential after project withdrawal
- creation of a macro-economic cycle in communities
- generating a positive work mentality amongst youth and other participants in the projects
- minimising emission from fuel consumption by using labour rather than equipment
- allowing small contractors to conduct business without large capital investments in equipment
- creating connectivity of local communities to the job market
- enhancement of livelihoods by infrastructure development
- creating a form of central alliance of local communities to construct rural infrastructure.

One of the most important steps taken by the SFD Public Works Programme is to mainstream labour-based technology in the Small Contractor Training Programme.

It is hoped that the seminar will produce achievable conclusions. It is an honoured audience.

7.2.2 Ms Loretta De Luca, the Acting Director of the ILO Area Office, and of the Multidisciplinary Advisory Team for Northern Africa, Cairo, Egypt

Decent employment — that is productive, adequately remunerated, and safe — is now widely recognised as the key to a healthy, balanced, and sustainable development. It is essential to provide individuals,
both women and men, income security and thus freedom from poverty. They also need a feeling of self worth, human identity, and dignity. It is essential to make humans feel an integral part of the society in which they live and thus they will be willing to contribute to its stability and progress. It is also essential to the economic community, both nationally and globally, so it may find sufficient markets for its products and the stable, dynamic yet open, environment it needs to thrive.

It is also widely recognised that economic growth is necessary to create employment opportunities, but this is by no means sufficient. Jobless growth is a frequent phenomenon worldwide, and one that is on the increase. Even impressive economic performances do not necessarily translate into employment creation and poverty alleviation. Despite the growth of the world economy in the recent years, the ILO estimates that over 1 billion persons (1/3 of the world’s workforce) are still unemployed or underemployed.

The potential economic population is projected to grow faster than the rate of job creation. Increasing the employment intensity of growth is therefore imperative. It basically means favouring employment intensive sectors and activities, and favouring employment intensive technologies.

Employment needs to become the major focus of economic decisions. It needs to become an integral part of economic, financial, and social policies. An employment-intensive growth strategy needs to be developed urgently in view of the growing employment needs. Developing such a strategy requires the coordination and mobilisation of many national and international actors, and at the level of local communities and enterprises.

The need for urgent and coordinated action is creating a momentum for this to occur and we (the ILO) should ride this momentum. This seminar comes at an excellent time. At international level, a number of developments have taken place. In 1995, the World Summit for Social Development, organised by UN, called for putting the promotion of employment at the centre of strategies and governments. It called upon UN agencies, particularly the ILO, to help it in this challenge. Last June, a special session of the UN World Assembly entitled ‘World Summit for Social Development and Beyond’, stressed the need to elaborate a coherent and coordinated strategy on employment. It invited the ILO to facilitate the exchange of best practices in the field of employment generation. The G5 Summit, held in Cairo last June, reiterated the urgency for the ILO to develop a comprehensive employment strategy so as to stimulate employment creation in all developing countries.

Also worth mentioning is the important and welcome change occurring in the World Bank and International Monetary Fund. Where these organisations had previously fixated on restrictive policies and economic stability, they are now turning towards poverty
alleviation and employment creation. At their annual joint development meeting in Prague last month, the theme was ‘Making the Global Economy Work for Everyone’.

Indeed, the global economy has performed poorly in meeting people’s expectations of employment, so this theme is particularly opportune. It also opens the way for cooperation with organisations like the ILO, which has been working on these issues for some time.

The ILO is organising a World Employment Forum in November 2001 to which national and international contributions are most welcome. The ILO has been developing a programme called ‘Jobs for Africa’ that advocates and pursues, in 17 countries including Egypt, an approach for employment creation based on boosting investment and reorienting the pattern of public and private investments towards employment intensive activities and technologies. This is a programme based on the involvement and coordination of the main national stakeholders, various ministries and public institutions, employers and workers organisations, and also the academic community, NGOs, and other representatives of the civil society.

In Egypt, the ILO has been developing a national employment programme at the request of His Excellency the Prime Minister. The programme is being developed by a senior member of the ILO in Egypt. It comprises a short to medium term plan for tackling unemployment with, as one of its five pillars, the development of a nationwide labour-based public works programme. The ILO Cairo Office is gladly lending its support to this national employment programme, and to the Jobs for Africa, Egypt Programme. It will shortly be starting a joint venture to build the capacity of local contractors, with the SFD.

The ILO Cairo Office hosts a team of resident specialists working in six technical areas: labour markets, small to medium enterprises, vocational training, occupational safety and health. At the end of this year we expect two specialists in labour relations and employment-intensive technologies. This should enable us to intervene in these areas more effectively and quickly. This does not mean that we do not need ASIST. We know they are overworked, but this is the price of a job well done. We will continue to rely on their valuable support.

In conclusion, the opportunity for employment-intensive work in the developing countries is huge. It includes infrastructure, environmental projects, historical sites, etc. The potential benefits of employment-intensive technology are not only for employment creation. They can also address a number of priorities such as providing cost effective and technically sound works; developing small to medium enterprises, an entrepreneurship mentality, community self reliance; and limiting the need to import expensive machinery.
These opportunities still need to receive broader recognition. Ideally we should look to achieve a mainstreaming of employment-intensive goals into the work of sectoral ministries and core general policy ministries. This is a key challenge that calls for solid arguments, proofs, and strong partnerships at all levels. We are ready, in the ILO Office, to promote employment-intensive activities and technologies. We look forward to partnerships and to this seminar to provide us with the invaluable experience that all of you bring from your own countries.

7.2.3 Ms Jane Tournée, Director of ILO/ASIST, Harare, Zimbabwe

The ASIST Programme operates within the ILO. ASIST stands for Advisory Support, Information Services, and Training. We give advisory support on:
- policy
- planning
- technical issues
- project and programme design
- coordination, monitoring and evaluation
- reviews of urban and rural labour-based programmes
- access and rural employment programmes, and
- integrated rural accessibility.

Our information service synthesises published and unpublished documents. They are kept in electronic and hard copy form, as well as videos. There is also an enquiry service, which is possibly one of the most important resources. Anyone can come to ASIST and ask for information on any topic related to labour-based technology or rural accessibility. ASIST also provides training support through international courses at the Kisii Training Centre in Kenya, supports national training institutions, curriculum development, and cooperation with universities.

There is conclusive evidence that labour-based methods can be up to 30% more cost effective than equipment-based methods. They can reduce foreign exchange requirements by 50 – 60% and create two to four times the employment for the same level of investment. In addition to these benefits, labour-based technology should be technically sound, of good quality, and produce a proper-engineered infrastructure. These issues cannot be separated.

ASIST has put together a paper covering topics that are regularly brought up by colleagues all over the world. The topics include:
- money and politics
- what drives local-level investment planning to success
• can employment-intensive investments really be considered as part of mainstream economic development?
• who influences technology choice and how
• how contractor-like are the small contractors? Are they independent? Can they access markets independently?
• what is our stance on decent work; what should be included in regulations and codes of practice?

Very often we see that the different levels of government, at regional and district level, do not have the capacity to meet these challenges. There are financial and technical constraints to their responding to global trends. What is driving the planning process? There appears to be limited resources at crucial levels of government. Inappropriate local politics also results in inappropriate distribution of these resources. In many areas there is a total absence of effective local governance, absence of appropriate technical standards, and inappropriate contractual arrangements.

Many partners are providing inputs into creating a conducive environment for responsible local governance. Together with other actors, we are looking at enhancing partnerships with governments and development organisations to create a concerted effort at the local level. We are assisting in the creation of planning tools that will assist with local-level planning decisions. We have also been involved in raising awareness.

To achieve a positive impact, we need both money and good politics. As I have just mentioned, we need responsive local-level planning and this demands appropriate tools, reasonable funding, and good governance. In the future, we would like to be part of a concerted effort to build capacity at this level, to cooperate with an increasing number of partners, and to continue tool refinement.

Can we mainstream into economic development? It is not clear what contribution labour-based works make to GDP. There are many questions still to be clarified, such as the economic viability of labour-based works, and their level of formal and informal interactions. There is currently no consistent means of measuring the contribution of labour-based works to GDP, so there is a need to support studies at a wider national and international level. There is conclusive evidence of their competitiveness, but the hurdle is convincing people that this is so.

We feel that labour-based technology must become part of the formal sector in order to achieve true recognition and make a real contribution. This is the future. There is no reason why employment-intensive investment and labour-based technology cannot play a major role in the national economy. The challenge is to make investors aware of the benefits, and to believe in the quality of the
products. Only then can we expect higher levels of commitment from development funds.

Who influences technology choice? Is it the client, the government, or the private sector? These are important questions. We need to ensure that whoever is choosing technology, the needs of all stakeholders are being met. It is possible that the private sector is being forced into technology choices by government legislation, rather than willingly selecting the approach themselves. Policies need technical support. It is important that they become translated from the higher level and are implemented on the ground.

The focus on small contractors has been ongoing for some time. Their capacity and capability has been debated since 1995. It is important to learn from the past, but so to is a coordinated effort that will take into account the range of financial and training packages that are needed to get small contractors into the market place.

Also, workers in labour-based programmes must be ensured of good working conditions. This must include good productivity. The ILO is very concerned with decent work and what this means. The future target must be to include in this debate workers' organisations, and the trade unions that represent them.

7.3 ANNEX 3: KEYNOTE ADDRESS BY GEOFF EDMONDS, DIRECTOR OF IT TRANSPORT, UNITED KINGDOM

Ladies and Gentlemen, I would like to say what a pleasure it is to be here amongst so many friends and colleagues. When I started in the business some 25 years ago, we were a small group of enthusiasts. It is gratifying to see such a large gathering dealing with a subject that most of our careers has concerned.

I am trying not to sound like a fraternity elder remembering the good old days. However, I do have to say that in the early seventies promoting labour-based technology was not easy. We were rather evangelical, preaching the word on labour-based and hoping that no one would notice, like the emperor, that we had no clothes. That the only piece of real practical evidence to back up our ideas was a six-kilometre piece of gravel road in the Philippines, where our first pilot project was. The gathering here confirms what I believe is true: that labour-based has become acceptable, even commonplace. It has become part of the development lexicon and we can look at several examples of the success of the use of labour-based methods. The Minor Roads and its successor the Roads 2000 Programme in Kenya. The LCU in Lesotho, the Feeder Roads Programme in Ghana, and here the work in Egypt with the Social Fund for Development, and many other projects in several countries throughout the developing world.
Some would say that labour-based has become, in the present jargon, mainstream. However, this is where I have some reservations. There are many labour-based projects around the world. However, how many would survive, or indeed would have survived, the withdrawal of donor funding. The answer is, I fear, very few. Arguments in favour of labour-based are well known. Three times as much direct employment creation as compared to equipment. Several times more indirect employment. Huge saving in foreign exchange. On top of that labour-based methods are generally cheaper. Moreover, labour-based roads are of high technical standard and look beautiful.

Despite all this, labour-based is not mainstream. Very few governments outside South Asia and China have implemented labour-based programmes without assistance, some might say insistence, of donors. Labour-based methods are still not considered as part of the range of techniques that engineers have at their disposal.

The question then has to be asked: why, if labour-based methods are so beneficial, are they not generally adopted? Why have so few governments, without external promoting, incorporated labour-based methods into their programmes?

Over the years several ideas have been put forward. First and foremost has been the argument that engineers are not trained in the use of labour-based methods, and therefore they have difficulty adopting them. The ILO responded to this by incorporating modules into university courses. However, one of the concerns raised by the universities and colleges is that, whilst they have seen the intellectual value of these modules, they do not see the market for use of labour-based methods. The next argument was that there needed to be political commitment so that engineers would feel that they were part of a movement that was assisting their country. Further arguments have been presented suggesting that labour-based methods were second rate, backward technology, that these methods smacked of colonialism or, even worse, exploitation.

All of these arguments may of course have validity. However, if the benefits of labour-based methods are as obvious as we believe, surely the obstacles would have been overcome?

Perhaps therefore, we need to think again. We are clear on what are the benefits. But actually who benefits? People will generally adopt something new if they can see the benefits to them. Certainly we believe that labour-based methods will also provide national economic benefit by reducing the drain on foreign exchange. We also believe that roads and other infrastructure can be produced cheaper. However, these are longer term, rather intangible benefits. Direct benefits go to the workers on the site, and these are people who have very little voice in society.
We have concentrated our efforts on training engineers and trying to convince engineers that labour-based methods are the best option. Many of us are engineers and believe that all engineers are open to rational and logical arguments. However, what benefits will they get from using these methods? Very little it seems to me. I am always impressed by the commitment of engineers who are involved in labour-based programmes. The more so because if, as a practising civil engineer, I was earning $100 a month, I would certainly want to be sure that getting involved with labour-based methods was at least not going to be detrimental, and if possible positively beneficial, to me in my career, or in any other way.

Might it not be that we have to concentrate on a broader audience on a more general framework within which labour-based methods are applied? By applying more effort to the overall framework within which rural infrastructure is implemented, it may be that the obstacles to the acceptance of labour-based methods and other initiatives to promote the use of local resources for infrastructure can be overcome. We tend to focus on labour-based methods first and on the environment they operate in second. We believe these methods are appropriate, and look for ways to shape the environment for their effective use. Perhaps we should concentrate on the environment first.

What are some of the key elements of the framework in which labour-based methods seek to operate?

**Institutions**

Most of the labour-based programmes have been concentrated in the roads sector. From an institutional point of view this has generally meant that the focus has been the ministry that is responsible for roads. These ministries still spend most of their funds and human resources on the main road network. Rural roads receive limited funding and are viewed as the poor relation. When rural road units have been set up in technical road ministries, they are not seen by engineers as a productive career path.

The vast majority of funds going into rural roads come from donors. Consequently, whilst technical ministries have less interest in rural roads, they generally do not want the responsibility devolved to any other agency.

Most donors, including the financing institutions, have accepted in principle the validity of labour-based methods. Why then is it still a continuous struggle to ensure that rural road programmes, for example, are orientated to labour-based? I do not believe that it is because of the natural aversion to labour-based. On the other hand, experience suggests that rural road programmes work most effectively when they are decentralised. However, locating these programmes in an agency that is solely responsible for rural roads enhances the chances of labour-based methods being adopted.
This is not necessarily to the benefit of the main road agency, and strong arguments are advanced regarding lack of capacity at local level, lack of equipment in rural areas, and tendering procedures that require central approval.

In one country in South East Asia over the last four years, a rural roads labour-based programme has been implemented using local contractors. The agency through which this has been executed is the Ministry of Rural Development, which has very few civil engineers. It is doubtful that the Ministry has a strong view on labour-based methods. As far as it is concerned these methods work and good roads are being built. If funds continue to be available then there is every reason to suppose that more roads will be built using the labour-based contractors. This is because the institutional agreements were set up from the start specifically in relation to rural roads to facilitate the implementation of the programme.

In another country in central Africa, a small contractor development programme was set up as part of a donor project on feeder roads, and was run through the central road agency. Contractors were trained, good roads were built, the project ended, and there was no further work for the contractors.

Lesson learned? In both cases the funds were loan funds. In the first case labour-based was not an issue. Contractors were trained on site and then preceded to carry out contracts. In the second case the whole school for labour-based contractors was set up separate from the Ministry of Works school. Not only was it donor driven, when the funds ran out, the Ministry felt no obligation to put some more funds in. The Ministry felt no ownership of the project.

Decentralisation

Decentralisation is a major theme of government policy in many countries. In practice this can often mean de-concentration. That is to say, responsibility is devolved but often without authority, and even more frequently without financial allocation. Nevertheless, the potential for local governments to take responsibility for their own affairs is there. In planning rural infrastructure for which they are responsible, local authorities are keenly aware that it is in their interest to use local resources. This is partly because funds from central government are limited but also, at least in democratic societies, that using local resources is popular with the voters. In Kenya in the 1980s, the head of the labour-based rural access roads programme was a very popular person with local MPs, who lobbied him to bring the project to their area. He was not popular because he was an engineer, but because his programme provided jobs and income to the potential voters.

When programmes were directed from the centre, often the only parties supporting labour–based methods are the donor and rural
people who have no voice at this level. With decentralisation, the list of potential proponents not only grew to include local officials, but also the major beneficiaries, the rural people, are closer to the decision-making bodies.

Because human resources are limited we often see decentralisation as a problem in the sense that there is a lack of capacity to manage labour-based works. It seems to me that decentralisation is something that we need to support and understand more fully, as it provides an opportunity for using local resources including labour-based methods.

The use of accessibility planning provides a positive experience. Here is a simple planning tool, which uses the level of access to facilities, measured by time or distance, as a criterion for defining rural infrastructure priorities. Its strength as a planning tool relies on actual data from the rural population on their access needs rather than a perceived need by the planner.

It is as fair to say that accessibility planning has been extremely successful in six of seven countries where it has been applied. The reasons for its success and more importantly its acceptance is partly to do with its simplicity and relatively low cost. However, its main appeal to local planners is that, for the first time in many cases, they have a tool that they can use. They have some control over their own work, and they are able to use the skills that many of them undoubtedly have but are frustrated from using. To use another buzzword, they have been ‘empowered’. In a time when decentralisation is in vogue, such a tool is likely to become more and more appreciated.

Accessibility planning responds to the need at local level. It provides benefits in terms of planning. More important for its acceptance, the people who are responsible for using it feel that they benefit from it. And finally, it fits into an overall framework that is conducive to its application.

Community involvement

Community involvement has also become a major issue over recent years. This has had much to do with the belief that communities should be provided with the possibility of taking advantage of their own resources. It is the extension and the refinement of bottom-up development. It is the result of an about-face in development strategy on poverty alleviation. There is now less emphasis on the top-down provision of enabling environments and basic social services, and much more emphasis on developing people’s assets — human, natural, physical, financial, and social. The philosophy is now incorporated in the World Bank’s development report for 2000 and the Sustainable Livelihoods approach of DfID.

As long as the policy is focused on developing people assets and providing responsive institutional mechanisms, this approach is very
positive. It must not be seen, however, as a way of absolving the governments (and the donors) of the responsibility for the provision of basic services.

In relation to infrastructure, community involvement all too often means the provision of labour and resources either for the provision of assets or more commonly for their maintenance. The argument has still tended to be top-down: “We have sufficient funds to construct infrastructure, often from donor funds, but little or no funds for maintenance. As the infrastructure is being provided for the communities, then the communities should be encouraged, or even obligated, to maintain them.”

There is a strong argument that says that, as the state does not have funds for local road maintenance, then the ownership of these roads should be with those who are prepared to manage them. Whilst the World Bank Social Fund can be criticised, the principle that funds for infrastructure will go to communities that are willing to take on the responsibilities for their management has much to commend it. After all, it is the criteria that donors use to governments for nationally administered road programmes.

The use of labour-based methods and the introduction of simple planning techniques such as accessibility planning are the natural adjuncts to a policy of decentralisation and local ownership. They use local resources, provide local employment, and are under the control of the local organisations. The benefits accrue directly to those responsible for the infrastructure.

Donors

It is right to talk of ownership being related to responsibility and authority. However, it has to be accepted that in many countries donors provide up to 80% of the development budget. In several countries this is likely to be the case for some years to come. Whilst donors will work towards the overall goals of a national government, they also have their own agendas and, perhaps more pertinently, time frames. In a perfect organised system, donors would give money to the government and let them decide what to do with it. This is of course not the case. Indeed the phrase ‘donor-driven projects’ is all too often heard. It takes a strong government indeed to tell a donor that what they are offering is not what they want.

It is of course politically difficult for donors to publicly admit that they expect to provide aid to a country for a very long period. However, looking at support, for instance, to the rural roads sector in terms of a three or four-year project is unrealistic. A great deal is spoken about sustainability. However, it is just not feasible to expect to implement a sustainable system for rural road management over a time span of three to four years. Given the scale of donor involvement in the development budget of many countries, a much longer and broader
approach is perfectly feasible and should be adopted. The success of the Rural Access Programme in Kenya was in large part due to a partnership between several donors and the government, and their agreement on long-term targets. This allowed everybody involved to plan for the institutional changes that were necessary for this labour-based programme to flourish.

Summary

Over the last 25 years it has been clearly demonstrated that labour-based methods are technically and economically viable. Several very effective labour-based programmes have been implemented. We have produced a mountain of documentation on all the technical and socio-economic aspects of labour-based works. In many senses we know more about the detail of labour-based work than we do about equipment-based.

Labour-based is accepted and acceptable; however, it is still not mainstream. My view is that it is not due to any fault with the technology itself. If anything it is because we have concentrated too much on the technology and too little on the environment, and on the framework within which we attempted to introduce these techniques.

These methods will be best accepted by the people who will directly benefit from their use. These are unlikely to be people in central ministries and agencies. Decentralised financial programming, management, and implementation provides the best potential for labour-based methods. However, to take advantage of this potential requires that our focus is on assistance to the decentralised agencies in the effective use of the resources that they have available. This means assisting in and understanding the planning process, the management structure, and the financial administration.

Taking our focus closer to the beneficiaries also means that we have to become much more preoccupied with community involvement. There is still too much superficial thinking on how communities will be prepared to be involved in rural infrastructure. The limited resources that are available for the maintenance of rural infrastructure is a critical factor. In dealing with community involvement in rural infrastructure, we need to look in detail at the issues of ownership, responsibility, and authority.

Donors of course have a major influence on development activities. We have spent a great deal of time convincing donors that labour-based methods are technically and economically viable. Other factors however have restricted the more general application of labour-based methods in donor programmes. I suggest that our approach to donors should be more focused on the management of local-level infrastructure development. Certainly, local-level planning and the use of labour-based methods would be part of this. However, we need to show that we are addressing the key institutional, managerial, and financial aspect of local-level implementation. Many of you will say
that we already are. But we are not yet perceived in this way. We are, I feel, seen as labour-based salespersons. We are, and have to be, more than that if labour-based is to become more mainstream.

You have a significant array of topics to cover over the next few days. I am sure that the conference will be a rewarding experience. I hope that the ideas I have presented will have relevance during your discussions.

Thank you.
7.4 **ANNEX 4: SEMINAR EVALUATION**

7.4.1 Questionnaire

**Personal**
Which country are you from? ________________________________________________________________
For how many days did you participate in the Seminar? ________________________________________
Where did you stay (circle your choice)? Sheraton Concord Other

**How did you rate the seminar facilities (circle your choice)?**
| Accommodation: | Excellent | Good | Fair | Poor |
| Sheraton venue: | Too grand | About right |
| Conference rooms: | Excellent | Good | Fair | Poor |
| Sunday reception: | Excellent | Good | Fair | Poor |
| Conference lunches: | Excellent | Good | Fair | Poor |
| Movement between rooms: | Fine | Too slow |
| Translation facility: | Excellent | Good | Fair | Poor |
| Equipment: | Excellent | Good | Fair | Poor |

**How did you rate the management of the seminar (circle your choice)?**
| The Seminar as a whole: | Excellent | Good | Fair | Poor |
| Papers presented: | Excellent | Good | Fair | Poor |
| Plenary sessions and discussions: | Excellent | Good | Fair | Poor |
| Facilitated group discussions: | Excellent | Good | Fair | Poor |
| Field trips: | Excellent | Good | Fair | Poor |
| Number of delegates: | Too many | About right |

**Seminar planning (circle your choice)**

| How did you learn about the Seminar? | By invitation | Through personal contacts | Through the ASIST Bulletin | Other |
| How was your booking handled? | Very well | Well | Poorly |
| When would you prefer to receive the papers? | In advance | On arrival |
| Was the number of papers? | Too many | About right | Too few |
| How did you rate the standard of the papers? | Excellent | Good | Fair | Poor |
| How did you rate the standard of the presentations? | Excellent | Good | Fair | Poor |
| How did you rate the level of discussion? | Excellent | Good | Fair | Poor |

**Future seminars**
What theme would you like to focus on for the next Seminar? __________________________________
What would be your preferred length for each discussion group period? _____________________________
How many papers do you think should be presented? ____________________________________________
What format should be used for the presentations? _____________________________________________
In which country should the next Seminar be held? ____________________________________________

**Any other comments or suggestions?**
____________________________________________________________________________________________
7.4.2 Results

Questionnaires were completed by 117 participants.

**Personal**

Respondents came from Botswana (1), Brazil (1), Cambodia (2), Egypt (16), Ethiopia (3), Ghana (5), Kenya (4), Laos PDR (1), Lesotho (5), Malawi (3), Mozambique (9), Namibia (2), Nepal (1), Norway (1), South Africa (9), Sudan (2), Switzerland (1), Tanzania (11), Thailand (2), Uganda (10), United Kingdom (4), Zambia (7), and Zimbabwe (11). Six respondents did not identify their country.

The majority of the respondents (99) attended for all five days, and nine stayed for four. Six stayed on longer, while three stayed for less.

Sixty-one were accommodated at the Sheraton, 34 at the Concord, and the rest elsewhere.

**How did you rate the seminar facilities?**

![Bar chart for accommodation ratings](image1)

![Bar chart for Sheraton venue ratings](image2)
General comments

- Bed and breakfast accommodation preferred.
- Lunch should be served as a buffet and not as a sit-down meal.
- Support services should include access to email and the Internet.
- Mobile phones should be switched off.
How did you rate the management of the seminar?

**The seminar as a whole**

**Papers**

**Plenary sessions and discussions**

**Facilitated group discussions**

**Field trips**

**Number of Delegates**

- Excellent: 62
- Good: 27
- Fair: 4
- Poor: 2
- No comment: 1

- Excellent: 69
- Good: 26
- Fair: 4
- Poor: 1
- No comment: 4

- Excellent: 51
- Good: 33
- Fair: 8
- Poor: 4
- No comment: 1

- Excellent: 36
- Good: 39
- Fair: 25
- Poor: 3
- No comment: 1

- Excellent: 49
- Good: 32
- Fair: 1
- Poor: 12
- No comment: 1

- Excellent: 82
- Good: 65
- Fair: 32
- Poor: 4
- No comment: 4

- Excellent: 31
- Good: 82
- Fair: 4
- Poor: 1
- No comment: 1

- Excellent: 31
- Good: 82
- Fair: 4
- Poor: 1
- No comment: 1
General comments

- Moderation was below standard, especially in the group sessions; professional and knowledgeable moderators should be used
- Seminar should be longer
- Allow more time for discussions
- Discussion groups should be smaller
- More field trips, and to sites where there are ongoing activities; lessons learned from site visits should be discussed
- Put field trips at the end of the seminar so as not to interrupt the momentum
- A wider spectrum of participants should be invited next time
- Summary conclusions of previous seminars should be provided in print
- Time should be allowed for both ‘news’ presentations, and for serious discussions

Seminar planning

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### General comments

- Generally a good seminar
- Discussions should be more focused

### Future seminars

(Number of respondents in parentheses)

### Themes

Respondents proposed the following (only themes having two or more votes recorded here):

- Mainstreaming labour-based technology in urban and rural infrastructure works (7)
- Sustainability of infrastructure investment (5)
- Labour-based policy (4)
- Innovations in labour-based techniques (4)
- Technical issues, problems and standards (3)
• Procurement of labour-based works (3)
• Social benefits of labour-based works (3)
• Poverty alleviation (2)
• Funding and institutional set-up (2)
• Planning and technology (2)
• Technical research in labour-based (2)
• Training and education (2)

**Length of group discussions**
(Only 42 responded)
• Three hours (4)
• Two and a half hours (2)
• Two hours (12)
• One and a half hours (6)
• One and a quarter hours (2)
• One hour (6)
• Three quarters of an hour (5)
• Half an hour (5)

**Number of papers**
(Only 41 responded)

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Comments on this issue included:
• Papers should be presented in plenary, and not in groups
• Papers should be limited to one per country
• Papers should be more focused on the topic in hand
• Paper presentations should be shorter

**Format for presentations**

Respondents gave widely differing opinions, but most were in agreement with a mixture of groupwork and plenaries. Some favoured smaller groups. Having experienced moderators was considered important (20 per cent of respondents complained about poor moderation).

**Choice of venue for the next seminar**

Respondents voted as follows (15 did not vote):
• Kenya (2)
• Mozambique (92)
• South Africa (3)
• Uganda (1)
• Asia (4)
7.5 **ANNEX 5: LIST OF PARTICIPANTS**

In alphabetical order of last name.

The data contained in these tables has been extracted from the Registration Forms that the participants completed for the Secretariat.

The first section (Nos. 1 to 173) lists the participants; the second section (Nos. 174 to 190) lists the organisers (who were not strictly speaking participants). The three participants who have asterisks after their names were also members of the organising team.
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<td>Abbaker, Mohammed Ali</td>
<td>Mr</td>
<td>ILO c/o UNDP Sudan, PO Box 913, Khartoum</td>
<td>Sudan</td>
<td>(+249) 11 781 239 (+249) 11 787 746 (+233) 21 678 556 (+233) 21 663 047 (+249) 11 783 426 (+249) 11 783 428 (+249) 11 783 428</td>
<td><a href="mailto:walid.ibrahim@undp.org">walid.ibrahim@undp.org</a></td>
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<td>2</td>
<td>Abban, Kofi Richard</td>
<td>Mr</td>
<td>Department of Feeder Roads, P.O. Box 1000, Ministry Post Office, Accra</td>
<td>Ghana</td>
<td>(+233) 21 663 047 (+249) 11 783 428 (+249) 11 783 428 (+249) 11 783 428 (+233) 21 663 047 (+249) 11 783 428 (+249) 11 783 428</td>
<td><a href="mailto:dr@ghana.com">dr@ghana.com</a></td>
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<td>Ahmed, Hany</td>
<td>Mr</td>
<td>Chemistry, Egy, 11, El Shebab St., Aswan, Egypt</td>
<td>Egypt</td>
<td>(+202) 2501 000 (+202) 2501 000 (+202) 2501 000 (+202) 2501 000 (+202) 2501 000 (+202) 2501 000 (+202) 2501 000</td>
<td><a href="mailto:a.mohamed@chem.org">a.mohamed@chem.org</a></td>
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<td>Al Nabi, Ahmed Akram</td>
<td>Mr</td>
<td>ILO Project Office, PO Box 328, Ministry Post Office, Accra, Ghana</td>
<td>Ghana</td>
<td>(+233) 21 663 047 (+249) 11 783 428 (+249) 11 783 428 (+249) 11 783 428 (+233) 21 663 047 (+249) 11 783 428 (+249) 11 783 428</td>
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<td>Ali, Adam Ibrahim</td>
<td>Mr</td>
<td>Roads &amp; House Planning Ministry, Addis Ababa, Ethiopia</td>
<td>Ethiopia</td>
<td>(+251) 01 114 423 (+251) 03 114 423 (+251) 03 114 423 (+251) 03 114 423 (+251) 03 114 423 (+251) 03 114 423 (+251) 03 114 423</td>
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<td>Dr</td>
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<td>Dr</td>
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<td>Mr</td>
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<td>(+256) 45 345 16 (+256) 45 345 16 (+256) 45 345 16 (+256) 45 345 16 (+256) 45 345 16 (+256) 45 345 16 (+256) 45 345 16</td>
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<td>Ministry of Public Works and Housing, PO Box 575 11, Nairobi, Kenya</td>
<td>Kenya</td>
<td>(+254) 256 624 (+254) 256 624 (+254) 256 624 (+254) 256 624 (+254) 256 624 (+254) 256 624 (+254) 256 624</td>
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<td>Mr</td>
<td>Department of Feeder Roads, PO Box 2257, Mombasa, Kenya</td>
<td>Kenya</td>
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<td>Ministry of Works</td>
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<td>PO Box 30918, Lusaka</td>
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<td>International Labour Organisation</td>
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<td>Mr</td>
<td>Ministry of Local Government and Housing</td>
<td>Feeder Roads / District Development Projects, PO Box 510032 Chipata</td>
<td>Zambia</td>
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<td><a href="mailto:ddp@zamnet.zm">ddp@zamnet.zm</a></td>
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<td>Ms</td>
<td>ILO/ASIST</td>
<td>PO Box 60598, Nairobi</td>
<td>Kenya</td>
<td>(+254) 2 713028</td>
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<td>Ms</td>
<td>National Administration of Roads</td>
<td>Av. De Mocambique, 1225, Maputo</td>
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<td>Mr</td>
<td>EIEC</td>
<td>PO Box 480, Rivonia 2128</td>
<td>South Africa</td>
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<td>Mr</td>
<td>World Vision International</td>
<td>Av. Paulo Samuel Kankomba, no. 1170, Caixa, PO Box 2531 Maputo</td>
<td>Mozambique</td>
<td>(+258) 1 301076 (+258) 1 428678</td>
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<td>Ms</td>
<td>Transport Research Laboratory (TRL)</td>
<td>Old Wokingham Road, Crowthorne, Berkshire RG45 6AU</td>
<td>United Kingdom</td>
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<td><a href="mailto:adavis@trl.co.uk">adavis@trl.co.uk</a></td>
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<td>Mr</td>
<td>ILO</td>
<td>PO Box 2-349</td>
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<td>Thailand</td>
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<td>Mr</td>
<td>ILO Area Office, Lusaka</td>
<td>PO Box 32181, Lusaka</td>
<td>Zambia</td>
<td>(+260) 1-22 80 71 (+260) 1-22 32 77</td>
<td><a href="mailto:during@ilo.org">during@ilo.org</a></td>
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<td>Duus, Kristian Risborg</td>
<td>Mr</td>
<td>Danida</td>
<td>c/o Royal Danish Embassy, PO Box 4711, Harare</td>
<td>Zimbabwe</td>
<td>(+263) 4 738 509 (+263) 4 702 665</td>
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<td>Mr</td>
<td>Ethiopian Roads Authority</td>
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<td>Ethiopia</td>
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<td>Ms</td>
<td>Ministry of Work &amp; Transport</td>
<td>PO Box 1283, Maseru</td>
<td>Lesotho</td>
<td>(+266) 316269</td>
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<td>Mr</td>
<td>Swedish National Road Consulting A.B</td>
<td>Box C 263, Causeway, Harare</td>
<td>Zimbabwe</td>
<td>(+265) 4 134345</td>
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<td>Mr Danida / COWI</td>
<td>PO Box 15891, Kampala</td>
<td>Uganda</td>
<td>(+256) 4 2233304</td>
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<td>Mr</td>
<td>Ministry of Works</td>
<td>PO Box 521, Mwara</td>
<td>Tanzania</td>
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<td>Mr</td>
<td>Ministry of Rural Development</td>
<td>169 Soviet Blvd., Phnom Penh</td>
<td>Cambodia</td>
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<td>Mr</td>
<td>Ministry of Works</td>
<td>PO Box 0026, Gabarone</td>
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<td>Mr Botswana Roads Department</td>
<td>Private Bag 7710, Gaborone</td>
<td>Zimbabwe</td>
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<td>Mr</td>
<td>Ministry of Transport Department</td>
<td>PO Box 9423, Dar es Salaam City, 1121</td>
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<td>(+255) 4 247520</td>
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<td>Mr</td>
<td>Ministry of Works &amp; Communications</td>
<td>No. 9, Axtel St, North Fairview Park, Quezon City, 1121</td>
<td>Philippines</td>
<td>(+63) 2 4566456</td>
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<td>Mr</td>
<td>International Labour Organisation</td>
<td>4, Route Des Morrillons, CH-1211 Geneva</td>
<td>Switzerland</td>
<td>(+41) 22 996646</td>
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<td>Mr</td>
<td>Urban Sector Rehabilitation Project / USRP</td>
<td>PO Box 8, Dar es Salaam</td>
<td>Tanzania</td>
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<td>Mr</td>
<td>Ministry of Regional Administration &amp; Local Government</td>
<td>PO Box 115, Mwanza</td>
<td>Tanzania</td>
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<td>Kibaale District Local Government</td>
<td>PO Box 2, Karugzuza, or c/o Embassy of Ireland, PO Box 7791</td>
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<td>Mr</td>
<td>National Roads Board</td>
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<td>ILO/ASIST</td>
<td>P.O Box 210, Harare</td>
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<td>Ms</td>
<td>University of The North</td>
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<td>Mr</td>
<td>Ministry of Transport &amp; Communications</td>
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<td>PO Box 50268, Lusaka</td>
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<td>Ms</td>
<td>Department of Public Works, South Africa</td>
<td>Private Bag x 65, Pretoria Gaveng</td>
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<td>(+27) 12 337 6400</td>
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<td>Mr</td>
<td>Malawi Social Action Fund (MASAF)</td>
<td>Red Cross House Area 14, Private Bag 352, Lilongwe 3</td>
<td>Malawi</td>
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<td>Malawi Social Action Fund (MASAF)</td>
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<td>Markland, James</td>
<td>Mr</td>
<td>National Road &amp; Bridges, Roads and Bridges</td>
<td>Avenue Kuanda 131, Maputo, Mozambique</td>
<td>Mozambique</td>
<td>(+258) 1 478045 (+258) 1 478221</td>
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<td>Mr</td>
<td>ILO/ASIST</td>
<td>PO Box 6898, Nairobi, Kenya</td>
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<td>Mr</td>
<td>Ministry of Public Works</td>
<td>Private Bag A155, Karabo 100, P.O. Box 296, Arusha, Tanzania</td>
<td>Tanzania</td>
<td>(+255) 23989 (+255) 23989</td>
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<td>Mr</td>
<td>Technical College of Agriculture</td>
<td>Private Bag 3, Wils 2090, South Africa</td>
<td>South Africa</td>
<td>(+27) 11 76-2488 (+27) 11 76-2488</td>
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<td>Mr</td>
<td>Contractors Registration Board</td>
<td>3rd Floor, TETEX House, Pamba Road, PO Box 1374, Dar es Salaam, Tanzania</td>
<td>(+255) 22 2137963, (+255) 22 2137964</td>
<td>(+263) 4 702534, (+263) 4 702634</td>
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<tr>
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<td>Mukura, Kenneth</td>
<td>Mr</td>
<td>Ministry of Transport &amp; Communications</td>
<td>PO Box 771, Causeway, Harare, Zimbabwe</td>
<td>(+263) 4 702834</td>
<td>(+263) 4 702734</td>
<td><a href="mailto:mukura@zimnet.com">mukura@zimnet.com</a></td>
</tr>
<tr>
<td>116</td>
<td>Munjoma, Jorge Tomas</td>
<td>Mr</td>
<td>National Directorate of Roads and Bridges</td>
<td>Avenida De Mocambiquè, Maputo, Mozambique</td>
<td>(+258) 475045, (+258) 4 755221</td>
<td>(+255) 22 2137963</td>
<td><a href="mailto:info@vinsat.com">info@vinsat.com</a></td>
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<td>117</td>
<td>Mwalusaka, Frederick</td>
<td>Mr</td>
<td>ILO Feeder Roads Project</td>
<td>PO Box 510023, Chipita, Zambia</td>
<td>(+260) 62 21177</td>
<td>(+260) 62 21177</td>
<td><a href="mailto:eproads@zamnet.zm">eproads@zamnet.zm</a></td>
</tr>
<tr>
<td>118</td>
<td>Mughums, Mohamed Kotb</td>
<td>Mr</td>
<td>Ministry of Local Government &amp; Housing</td>
<td>National Directorate of Roads and Bridges</td>
<td>Tanzania</td>
<td>(+263) 4 702834</td>
<td><a href="mailto:mwalusaka@zamnet.zm">mwalusaka@zamnet.zm</a></td>
</tr>
<tr>
<td>119</td>
<td>Nalivou, Richard John</td>
<td>Mr</td>
<td>Ministry of Home Affairs</td>
<td>PO Box 50192, Perauke, Malawi</td>
<td>(+260) 63 711109, (+260) 66 74554</td>
<td>(+263) 4 702834</td>
<td><a href="mailto:mwalusaka@zamnet.zm">mwalusaka@zamnet.zm</a></td>
</tr>
<tr>
<td>120</td>
<td>Nkondo, Sydney</td>
<td>Mr</td>
<td>Malawi Social Action Fund (MASAF)</td>
<td>PO Box 510023, Chipita, Zambia</td>
<td>(+260) 62 21177</td>
<td>(+260) 62 21177</td>
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<tr>
<td>121</td>
<td>Nkomo, Manoel Azevedo</td>
<td>Mr</td>
<td>World Vision International</td>
<td>Av. Paulo Samuel Kankomba, no. 1700, PO Box 253, Maputo, Mozambique</td>
<td>(+258) 475045, (+258) 4 755221</td>
<td>(+255) 22 2137963</td>
<td><a href="mailto:info@vinsat.com">info@vinsat.com</a></td>
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<td>Noury, Mostafa S</td>
<td>Mr</td>
<td>Carl Bro Management</td>
<td>8 El Amnah Str., Midrand, Giza, Egypt</td>
<td>(+2) 02 338 0971, (+2) 02 338 0970</td>
<td>(+2) 02 338 0971, (+2) 02 338 0970</td>
<td><a href="mailto:mwalusaka@zamnet.zm">mwalusaka@zamnet.zm</a></td>
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<td>Ntchani, Shi</td>
<td>Dr</td>
<td>Ministry of Home Affairs</td>
<td>PO Box 301, Maseru, Lesotho</td>
<td>(+266) 310042</td>
<td>(+266) 310042</td>
<td><a href="mailto:ajuruchukwu.obi@undp.org">ajuruchukwu.obi@undp.org</a></td>
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<td>Obidat, Ziad</td>
<td>Mr</td>
<td>GTZ/German Technical Cooperation Volunteers</td>
<td>PO Box 301, Maseru, Lesotho</td>
<td>(+266) 310042</td>
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<td>Ochuka, Mehdin</td>
<td>Mr</td>
<td>Ministry of Home Affairs</td>
<td>PO Box 4856, Accra, Ghana</td>
<td>(+233) 21 3483680, (+233) 21 3811111</td>
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<td>Omar, Hala</td>
<td>Mrs</td>
<td>OPM Construction Works Ltd</td>
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<td>(+233) 21 3483680, (+233) 21 3811111</td>
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<td>Mr</td>
<td>OPM Construction Works Ltd</td>
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<td>(+233) 21 3483680, (+233) 21 3811111</td>
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<td>Mr</td>
<td>Norconsult International A.S.</td>
<td>PO Box 186, Mwanza</td>
<td>Tanzania</td>
<td>(+255) 282 503020</td>
<td>(+255) 282 501069</td>
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<td>129</td>
<td>Osei-Bonsu, Kwaku D</td>
<td>Mr</td>
<td>International Labor Organization EAMAT</td>
<td>PO Box 2532, Addis Ababa</td>
<td>Ethiopia</td>
<td>(+251) 1 444409</td>
<td>(+251) 1 513633</td>
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<tr>
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<td>Otomo, John Simon</td>
<td>Mr</td>
<td>Ministry of Works, Housing &amp; Communication</td>
<td>Uganda Transport Rehabilitation Project- Feeder Roads Component, PO Box 2237, Mbale</td>
<td>Uganda</td>
<td>(+256) 45 34515</td>
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</tr>
<tr>
<td>131</td>
<td>Ouma, Nekessa Constance</td>
<td>Ms</td>
<td>P.O.Box, or c/o Embassy of Ireland, P.O. Box 7791</td>
<td>Kampala</td>
<td>Uganda</td>
<td>(+256) 41 344345</td>
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<tr>
<td>132</td>
<td>Parikesit, Danang</td>
<td>Dr</td>
<td>Gadjah Mada University</td>
<td>Faculty of Engineering, Civil Eng., Gadjah Mada University of Grafika No. 2, Yogyakarta 55281, Jakarta</td>
<td>Indonesia</td>
<td>(+62) 274 543704</td>
<td>(+62) 274 564138</td>
</tr>
<tr>
<td>133</td>
<td>Pienaar, W J</td>
<td>Prof.</td>
<td>University of Stellenbosch</td>
<td>Private Bag X1, Matieland, 7602</td>
<td>South Africa</td>
<td>(+27) 21 808 2251</td>
<td>(+27) 21 808 2109</td>
</tr>
<tr>
<td>134</td>
<td>Roux, Tobie</td>
<td>Mr</td>
<td>Department of Transport &amp; Public Works</td>
<td>Private Bag X 23, Marshal Town, Johannesburg 2107</td>
<td>South Africa</td>
<td>(+27) 11 355 7306</td>
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<tr>
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<td>Mr</td>
<td>Roads Authority, Namibia</td>
<td>PO12030, Windhoek</td>
<td>Namibia</td>
<td>(+264) 61 2082048</td>
<td>(+264) 61 235325</td>
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<tr>
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<td>Rwelamihla, Pantaleo Mutajwaa</td>
<td>Prof.</td>
<td>University of South Africa</td>
<td>Graduate School of Business Leadership, UNISA, PO Box 392, Pretoria 003</td>
<td>South Africa</td>
<td>(+27) 116 520290</td>
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</tr>
<tr>
<td>137</td>
<td>Sahle, Dejene</td>
<td>Mr</td>
<td>International Labour Organisation</td>
<td>P.O Box 210, Harare</td>
<td>Zimbabwe</td>
<td>(+263) 4 748344</td>
<td>(+263) 4 759427</td>
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<tr>
<td>138</td>
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<td>Mr</td>
<td>UNDP/UNCDF District &amp; Feeder Roads Project</td>
<td>PO Box 186, Mwanza</td>
<td>Tanzania</td>
<td>(+255) 28 2500615</td>
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<td>Kalumba Contractors Limited</td>
<td>PO Box 510157, Chipata</td>
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<td>Mr</td>
<td>ILO/ASIST</td>
<td>P.O. Box 210, Harare</td>
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<td>Mr</td>
<td>Ministry of Works</td>
<td>PO Box 777, Fort Portal</td>
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<td>Mr</td>
<td>Ministry of Work &amp; Transport</td>
<td>PO Box 1283, Maseru</td>
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<td>Rural Infrastructure Development Project</td>
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<td>(+977) 1 431787</td>
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<td>Mr</td>
<td>ILO</td>
<td>ILO, IFP Crisis, P. O. Box 500, Geneva</td>
<td>Switzerland</td>
<td>(+41) 22 7996321</td>
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<td>Mr</td>
<td>Ministry of Local Government</td>
<td>50027, Lusaka</td>
<td>Zambia</td>
<td>(+260) 1 251128</td>
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<td>Mr</td>
<td>ILO/ASIST</td>
<td>P.O Box 210, Harare</td>
<td>Zimbabwe</td>
<td>(+263) 4-369824</td>
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<td>151</td>
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<td>Mr</td>
<td>Department of Public Works</td>
<td>Private Bag X 65, Pretoria</td>
<td>South Africa</td>
<td>(+27) 012 337 2092</td>
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<td>Vientiane</td>
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<td></td>
<td>(+856) 21 412264</td>
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<td>Ssekatawa, John</td>
<td>Mr</td>
<td>ILO/Danida Support to Labour-based Policy</td>
<td>c/o UNDP, PO Box 7184, Kampala</td>
<td>Uganda</td>
<td>(+256) 41 25 4489</td>
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<td>Stenstrom, Tomas</td>
<td>Mr</td>
<td>ILO/ASIST</td>
<td>P.O Box 210, Harare</td>
<td>Zimbabwe</td>
<td>(+263) 4-369824</td>
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<td>Storm, Ornulf</td>
<td>Mr</td>
<td>NORAD</td>
<td>PO Box 884, Dep. N.</td>
<td>Norway</td>
<td>(+47) 22402431</td>
<td>(+47) 22402576</td>
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<td>Tamale, Alphita</td>
<td>Dr</td>
<td>Ministry of Labour</td>
<td>PO Box 261, Av. 24 de</td>
<td>Mozambique</td>
<td>(+258) 428301</td>
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<td>Tawfik, Ahmed</td>
<td>Mr</td>
<td>Ministry of Local Government and Housing</td>
<td>9 Thika Hussein St,</td>
<td>Egypt</td>
<td>(+202) 43410901</td>
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<td>Mr</td>
<td>Ministry of Local Government and Housing</td>
<td>PO Box 10032, Chipata</td>
<td>Zambia</td>
<td>(+260) 62111777</td>
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<tr>
<td>161</td>
<td>Tessem, Telje</td>
<td>Mr</td>
<td>ILO – Employment-Intensive Investment Branch</td>
<td>4, Route Des Morillons,</td>
<td>Switzerland</td>
<td>(+41) 22790408</td>
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<td>162</td>
<td>Thembe, Ladamia</td>
<td>Mr</td>
<td>Independent Development Trust</td>
<td>PO Box 5386,</td>
<td>South Africa</td>
<td>(+27) 152911815</td>
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<td>Toumene, Jean</td>
<td>Ms</td>
<td>Former ILO/ASIST Director</td>
<td>Oberkasseler Str. 20a</td>
<td>Germany</td>
<td>(+49) 222322631</td>
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<td>Mr</td>
<td>Ministry of Works</td>
<td>PO Box 77, Fort Portal</td>
<td>Uganda</td>
<td>(+256) 77480942</td>
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<td>Mr</td>
<td>ILO/ASIST</td>
<td>PO Box 1, Kiboga, or c/o Embassy of Ireland, PO Box 7791</td>
<td>Uganda</td>
<td>(+256) 413344344</td>
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<td>166</td>
<td>Uriyo, Albert</td>
<td>Mr</td>
<td>Contractors Registration Board</td>
<td>3rd Floor, TEKTEX House,</td>
<td>Tanzania</td>
<td>(+255) 221237906</td>
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<td>Mr</td>
<td>ILO/ASIST</td>
<td>PO Box 210, Zimbabwe</td>
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<td>Ms</td>
<td>ILO/ASIST</td>
<td>PO Box 60843, Nairobi</td>
<td>Kenya</td>
<td>(+254) 257928</td>
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<td>Mr</td>
<td>ILO/ASIST</td>
<td>PO Box 2, 2-349, Bangkok</td>
<td>Thailand</td>
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<td>Wattam, Marcus</td>
<td>Mr</td>
<td>I. T. Transport Ltd.</td>
<td>The Old Power Station, Ardington, Nr. Wantage, Oxon, OX12, 8QJ</td>
<td>United Kingdom</td>
<td>(+44) 01235 833753 ( +44) 01235 832186</td>
<td><a href="mailto:marcus.wattam@ittransport.co.uk">marcus.wattam@ittransport.co.uk</a></td>
</tr>
<tr>
<td>172</td>
<td>Were-Higenyi, Frederick Millan</td>
<td>Mr</td>
<td>Ministry of Works, Housing &amp; Communications</td>
<td>PO Box 24814, Kampala</td>
<td>Uganda</td>
<td>(+256) 41 320615 (+256) 41 321690</td>
<td><a href="mailto:cowiebb@infocom.co.ug">cowiebb@infocom.co.ug</a></td>
</tr>
<tr>
<td>173</td>
<td>Winsvold, Marie</td>
<td>Mrs</td>
<td>ILO EMP/INVEST</td>
<td>4, Route Des Morrillons, CH -1211 – Geneva</td>
<td>Switzerland</td>
<td>(+41) 22796408</td>
<td><a href="mailto:winsvold@ilo.org">winsvold@ilo.org</a></td>
</tr>
<tr>
<td>174</td>
<td>Allen, Catherine</td>
<td>Ms</td>
<td>Scott Wilson Kirkpatrick &amp; Co Ltd</td>
<td>Scott House, Basing View, Basingstoke, Hampshire, RG21 4JG</td>
<td>United Kingdom</td>
<td></td>
<td><a href="mailto:catherine.allen@swkeurope.com">catherine.allen@swkeurope.com</a></td>
</tr>
<tr>
<td>175</td>
<td>Ashmawi, Mohamed</td>
<td>Mr</td>
<td>Chemonics Egypt</td>
<td>6, Dokki St., 12311, Dokki-Giza</td>
<td>Egypt</td>
<td>(+2) 02 7600764</td>
<td><a href="mailto:Mashmai@intouch.com">Mashmai@intouch.com</a></td>
</tr>
<tr>
<td>176</td>
<td>El Gayyar, Yasser</td>
<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
<td>Egypt</td>
<td>(+2) 02 338 0972 (+2) 02 3380970</td>
<td><a href="mailto:sfd4@sfdegypt.org">sfd4@sfdegypt.org</a></td>
</tr>
<tr>
<td>177</td>
<td>El Shafei, Raed</td>
<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
<td>Egypt</td>
<td>(+2) 02 338 0972 (+2) 02 3380970</td>
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<td>Mr</td>
<td>Chemonics Egypt</td>
<td>6, Dokki St., 12311, Dokki-Giza</td>
<td>Egypt</td>
<td>(+2) 02 3600764</td>
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<td>179</td>
<td>Fatehy, Khaled</td>
<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
<td>Egypt</td>
<td>(+2) 02 338 0972 (+2) 02 3380970</td>
<td><a href="mailto:sfd4@sfdegypt.org">sfd4@sfdegypt.org</a></td>
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<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
<td>Egypt</td>
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<td>181</td>
<td>Guthrie, Peter</td>
<td>Mr</td>
<td>Scott Wilson Kirkpatrick &amp; Co Ltd</td>
<td>Scott House, Basing View, Basingstoke, Hampshire, RG21 4JG</td>
<td>United Kingdom</td>
<td></td>
<td><a href="mailto:peter.guthrie@swkeurope.com">peter.guthrie@swkeurope.com</a></td>
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<td>Hashem, Mohamed</td>
<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
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<td>Organization</td>
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<td>Mr</td>
<td>Chemonics Egypt</td>
<td>6, Dokki St., 12311, Dokki-Giza</td>
<td>Egypt</td>
<td>(+2) 02 3600764 (+2) 02 3600764</td>
<td><a href="mailto:chemegy@intouch.com">chemegy@intouch.com</a></td>
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<td>184</td>
<td>Korayem, M Aziz</td>
<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
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<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
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<td><a href="mailto:sfd4@sfdegypt.org">sfd4@sfdegypt.org</a></td>
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<tr>
<td>186</td>
<td>Morcos, Farida</td>
<td>Mrs</td>
<td>Chemonics Egypt</td>
<td>6, Dokki St., 12311, Dokki-Giza</td>
<td>Egypt</td>
<td>(+2) 02 3600764 (+2) 02 3600764</td>
<td><a href="mailto:faridamorcos@yahoo.com">faridamorcos@yahoo.com</a></td>
</tr>
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<td>Rashad, Yousef</td>
<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
<td>8 El Aanab Street, Mohandeseen, Giza</td>
<td>Egypt</td>
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<td>188</td>
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<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
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<td>Egypt</td>
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<td><a href="mailto:sfd4@sfdegypt.org">sfd4@sfdegypt.org</a></td>
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<td>Mr</td>
<td>Chemonics Egypt</td>
<td>6, Dokki St., 12311, Dokki-Giza</td>
<td>Egypt</td>
<td>(+2) 02 3600764 (+2) 02 3600764</td>
<td><a href="mailto:chemegy@intouch.com">chemegy@intouch.com</a></td>
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<tr>
<td>190</td>
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<td>Mr</td>
<td>The Social Fund for Development / PWP</td>
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<td>Egypt</td>
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7.6 ANNEX 6: PHOTOGRApHS