

Republic of Kenya



Ministry of Roads and Public Works

# **LABOUR-BASED TECHNOLOGY: A REVIEW OF CURRENT PRACTICE**

*Proceedings of the 11<sup>th</sup> Regional Seminar  
for Labour-Based Practitioners*

2<sup>nd</sup>-7<sup>th</sup> October 2005,  
Mombasa, Kenya

**SEMINAR THEME :**  
**INTEGRATED LABOUR-BASED APPROACH  
FOR  
SOCIO-ECONOMIC DEVELOPMENT**





# **Labour-based Technology: A Review of Current Practice**

VOLUME 1: PROCEEDINGS OF THE 11<sup>th</sup> REGIONAL SEMINAR



**CTP 169**

*11<sup>th</sup> Regional Seminar for Labour-based Practitioners*

*Hosted by the Ministry of Roads and Public Works, Kenya in collaboration with the International Labour Organisation, Advisory Support Information Services and Training (ILO/ASIST) Programme in Mombasa, Kenya.*

**2<sup>nd</sup> - 7<sup>th</sup> October 2005**

## **Labour-based Technology: A Review of Current Practice**

VOLUME 1: PROCEEDINGS OF THE 11<sup>th</sup> REGIONAL SEMINAR

Theme of the Seminar:

### **Integrated Labour-based Approach for Socio-Economic Development**

*Compiled by*

*Prof. F. J. Gichaga and Dr. Gituro Wainaina  
University of Nairobi Enterprises and Services Ltd.*

Republic of Kenya



Ministry of Roads and Public Works



International Labour Organization  
Advisory Support, Information Service  
and Training (ASIST)



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## Abbreviations and Acronyms

<b>ADB</b>	African Development Bank
<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>ASIST</b>	Advisory Support Information Services and Training
<b>BDS</b>	Business Development Services
<b>CBO</b>	Community-Based Organization
<b>CDD</b>	Community-Driven Development
<b>CIDA</b>	Canadian International Development Agency
<b>CSIR</b>	Centre for Scientific and Industrial Research
<b>CTA</b>	Chief Technical Adviser
<b>DANIDA</b>	Danish International Development Assistance
<b>DCI</b>	Development Corporation Ireland
<b>DCP</b>	Dynamic Cone Penetrometre
<b>DDR</b>	Demobilization, Disarmament Reintegration
<b>DFID</b>	Department for International Development
<b>EAC</b>	East African Community
<b>EBT</b>	Equipment-Based Technology
<b>ECSO</b>	European Commission Somalia Operations
<b>EEL</b>	Employment, Enterprise and Livelihoods
<b>EIIP</b>	Employment Intensive Infrastructure Projects
<b>EMP/INVEST</b>	Employment Intensive Investment Branch
<b>EPWP</b>	Expanded Public Works Programme
<b>EU</b>	European Union
<b>FAO</b>	United Nations Food and Agriculture Organization
<b>FHH</b>	Female-Headed Household
<b>FS</b>	Financial Services
<b>GDP</b>	Gross Domestic Product
<b>GoK</b>	Government of Kenya
<b>GoU</b>	Government of Uganda
<b>HIPC</b>	Highway Indebted Poor Countries
<b>HIV</b>	Human Immunodeficiency Virus
<b>ICT</b>	Information and Communications Technology
<b>ICTSU</b>	Implementation Coordination and Technical Support Unit (For EEL Somalia Programme)
<b>IDP</b>	Internally Displaced Person
<b>IFC</b>	International Finance Corporation
<b>ILO</b>	International Labour Organization
<b>IMF</b>	International Monetary Fund
<b>INGO</b>	International Non-Government Organization
<b>IRR</b>	Internal Rate of Return
<b>ITDG-EA</b>	Intermediate Technology Development Group-Eastern Africa
<b>JKUAT</b>	Jomo Kenyatta University of Agriculture and Technology
<b>JNA</b>	Joint Needs Assessment
<b>K</b>	Zambian Kwacha (Exchange rate 1 US\$ = K4,410 as at September 2005)
<b>KFW</b>	Kreditansalt Fur Wiederatufbau
<b>Km</b>	Kilometre
<b>KNUST</b>	Kwame Nkrumah University of Science and Technology
<b>KSA</b>	Kingdom of Saudi Arabia
<b>KTC</b>	Kisii Training Centre
<b>KIHBT</b>	Kenya Institute of Highway and Building Technology
<b>KRB</b>	Kenya Roads Board
<b>KShs</b>	Kenya Shillings

<b>LBA</b>	Labour-Based Approach
<b>LBM</b>	Labour-Based Method
<b>LBRM</b>	Labour-Based Road Maintenance
<b>LBT</b>	Labour-Based Technology
<b>LNGO</b>	Local Non-Government Organization
<b>LVSR</b>	Low Volume Sealed Roads
<b>MBM</b>	Machine-Based Method
<b>MCR</b>	Micro-Concrete Roofing
<b>MDG</b>	Millenium Development Goals
<b>ME</b>	Micro-Enterprise
<b>MED</b>	Micro-Enterprise Development
<b>MF</b>	Micro-Finance
<b>MFI</b>	Micro-Finance Institution
<b>MHH</b>	Male Headed Household
<b>MLGH</b>	Ministry of Local Government and Housing
<b>MOFNP</b>	Ministry of Finance and National Planning
<b>MRPW</b>	Ministry of Roads and Public Works
<b>MOTC</b>	Ministry of Transport and Communications
<b>MRP</b>	Minor Roads Programme
<b>MSME</b>	Micro, Small and Medium Enterprise
<b>MWS</b>	Ministry of Works and Supply
<b>NEPAD</b>	New Partnership for Africa's Development
<b>NGO</b>	Non-Governmental Organization
<b>NRB</b>	National Roads Board
<b>NRFA</b>	National Road Fund Agency
<b>NTB</b>	National Tender Board
<b>OVI</b>	Objectively Verifiable Indicators
<b>PED</b>	Private Enterprise Development
<b>PRE</b>	Provincial Road Engineer
<b>PPPs</b>	Public Private Partnerships
<b>R2000</b>	Roads 2000
<b>RAL</b>	Roads Agency Limpopo
<b>RARP</b>	Rural Access Roads Programme
<b>RAPI</b>	Rapid Assessment of Poverty Impacts
<b>RD</b>	Roads Department
<b>RDA</b>	Road Development Agency
<b>RECs</b>	Regional Economic Commissions
<b>ROADSIP</b>	Road Sector Investment Programme
<b>RSR</b>	Repeat Survey Results
<b>RTS</b>	Roads Training School
<b>SACB</b>	Somalia Aid Coordination Body
<b>SADC</b>	Southern African Development Community
<b>SATCC</b>	Southern Africa Transport and Communications Commission
<b>SDC</b>	Swiss Development Cooperation
<b>Sida</b>	Swedish International Development Agency
<b>SME</b>	Small and Medium Enterprise
<b>SOV</b>	Sources of Verification (For objectively verifiable indicators)
<b>STA</b>	Somalia Telecoms Association
<b>STOC</b>	Seminar Technical Organising Committee
<b>SWM</b>	Solid Waste Management
<b>TA</b>	Technical Assistance
<b>TDIM</b>	Territorial Diagnosis & Institutional Mapping
<b>TFG</b>	Transitional Federal Government
<b>TRL</b>	Transport Research Laboratory



<b>TShs</b>	Tanzania Shillings
<b>UAE</b>	United Arab Emirates
<b>UNCT</b>	United Nations Country Team
<b>UNDP</b>	United Nations Development Programme
<b>UNICEF</b>	United Nations Children's Fund
<b>UNOPS</b>	United Nations Office for Project Services
<b>US</b>	United States
<b>USD</b>	United States Dollar
<b>UShs</b>	Uganda Shillings
<b>VDC</b>	Village Development Committee
<b>WB</b>	World Bank
<b>WHO</b>	World Health Organization
<b>WITS</b>	University of Witwatersrand



## Executive Summary

The 11<sup>th</sup> Regional Seminar for labour-based practitioners was conducted over a five-day period, from 2<sup>nd</sup> – 7<sup>th</sup> October 2005 in Mombasa, Kenya. It was organized and hosted by the Ministry of Roads and Public Works (MRPW) of the Republic of Kenya, in collaboration with the International Labour Organization, Advisory Support, Information Services and Training Regional Programme for Africa (ILO/ASIST). The Seminar Theme was Integrated Labour-based Approach for Socio-Economic Development.

Widespread poverty is one of the major challenges facing developing countries. Consequently employment of friendly labour-based roadworks techniques for implementing infrastructure projects are attractive. Kenya is one of the pioneers in the labour-based technologies under the Rural Access Roads and Minor Roads Programme in the 1970s and 1980s through which employment opportunities were created for the rural poor. The programmes had positive impact in socio-economic development of those rural areas.

The 11<sup>th</sup> Regional Seminar was aimed at bringing together people involved in labour-based works to exchange ideas, experiences, identify and address key issues of concern.

Two hundred and forty eight participants from governments, development partners and other stakeholders from twenty one countries attended the seminar. There were fifteen papers of which fourteen were presented in the plenary sessions and discussed in working groups. There were four sub-themes under the overall seminar theme. The working groups were provided with relevant points to guide them in discussion, for which each group presented the outcome of their deliberations in plenary.

Site visits to six sites around Mombasa and Kilifi districts were organized to demonstrate existing labour-based works. The site visits gave the participants an opportunity to see the results and many challenges that are characteristic of labour-based approaches. It was of special interest, for example, to see how performance contracts using labour-based technologies are managed in road maintenance.

The participants also had the opportunity to visit Bamburi Cement Company's Haller Park where cement quarries have been rehabilitated and converted into beautiful parks with forest, flora and fauna and accompanying wildlife. The participants saw for themselves how environmental management can be integrated in construction works to ensure that there is no environmental degradation.

At the end of the five day event, the participants reviewed the progress against the recommendations made at the last seminar held at Arusha, Tanzania in 2003. The outcomes of the plenary and working group discussion sessions of this seminar were then synthesized and summarized in the form of findings and recommendations formulated into the 'Mombasa Communiqué.' In part the communiqué noted that having deliberated on the current practice, challenges and opportunities for integrated labour-based approaches for socio-economic development, the participants resolved to promote and implement these approaches and to take full advantage of, mainstream and upscale their use in the provision of infrastructure and related services in order to create wealth, particularly among the poor communities. The participants resolved to achieve this through strategies to:

- (i) Create an enabling environment;
- (ii) Build capacity;
- (iii) Allocate resources;
- (iv) Mainstream cross-cutting issues including environment, gender and governance.

The participants resolved to adopt the Mombasa Communiqué and pursue follow-up actions in their respective countries. The progress and actions taken will be reviewed during the next regional seminar to be held in South Africa in 2007.



## 1.0 Structure of the Proceedings

The proceedings of this seminar are documented in two separate volumes.

This Volume 1: **Labour-based Technology – A Review of Current Practice: Proceedings of the 11<sup>th</sup> Regional Seminar**, documents the proceedings over the five days of the seminar, including the discussions and the recommendations from the group discussions and the plenary sessions.

Volume 2: **Labour-based Technology – A Review of Current Practice: Papers of the 11<sup>th</sup> Regional Seminar**, comprises the full text of all fifteen papers. All participants were provided with a copy of Volume 2 during the seminar.

A CD-ROM containing the full text of papers presented and associated PowerPoint presentations, these proceedings and photos of site visits is included at the back of this volume.

Printed copies of both volumes and the CD are available from ASIST or from the ILO Employment-Intensive Branch (EMP/INVEST) in Geneva (refer to the copyright page for full contact details).

## 2.0 The Seminar

### 2.1 Background to the Seminar

This seminar was the eleventh in the series of regional seminar meetings initiated and promoted by the International Labour Organization, Advisory Support Information Service and Training (ILO/ASIST) over the past fifteen years. During these regional seminars, labour-based practitioners from sub-Saharan Africa, Asia, and Europe have met to review developments in the application of labour-based technology and associated issues. A list of previous seminars is shown in Annexure 1. Each seminar has been held in a different country. The early seminars were organized and managed by the ASIST team, and financed by ASIST donors. From the third seminar onwards, ASIST sought to identify and collaborate with local institutions to act as host for the seminar. In order to institutionalize and sustain the regional seminars within the participating community, seminar registration fees were introduced from the sixth seminar and administration, moderation and rapporteur functions were contracted out and paid for from the attendance fees.

This eleventh seminar was hosted and organized by the Ministry of Roads and Public Works (MRPW), Kenya in collaboration with the ILO/ASIST Programme for Africa. The MRPW set up a Seminar Technical Organizing Committee (STOC) to organize and manage the seminar. STOC was charged with the responsibility of coordinating all aspects of the seminar preparation and conduct.

#### 2.1.1 The Collaborator

ASIST Africa is a regional programme of the ILO's Employment-Intensive Investment Programme (EIIP), which provides Advisory Support Information Services and Training on employment-intensive strategies and local resource utilization in the provision of sustainable infrastructure to various countries in East and Southern Africa. ASIST is centred in Harare, Zimbabwe with a liaison office in Nairobi. A regional programme covering Asia-Pacific, ASIST-Asia Pacific, is based in Bangkok, Thailand; while an EIIP Programme covering Latin America is based in Lima, Peru.

The aim of the programme is to contribute towards poverty alleviation by mainstreaming employment-intensive strategies in the provision of infrastructure and services for improved and sustainable livelihood and local economic development.

The objectives of ASIST include:

- (i) To create employment with fair working conditions for men and women;
- (ii) To develop local capacity and build knowledge and skills in government, the private sector and communities;
- (iii) To create and mainstream appropriate and sustainable public infrastructure in a cost-effective and efficient manner.

#### 2.1.2 Administration

Administration Services for the seminar were subcontracted to Gina Din Corporate Communications.

#### 2.1.3 Paper Review

A paper review panel comprising Kenyan experts from different technical backgrounds worked with the STOC. These included:

- (i) Prof. F.J. Gichaga - Professor of Civil Engineering, University of Nairobi;
- (ii) Ms. Gertrude Opiyo - Independent Consultant;

- (iii) Ms. Rosemary Kungu - Independent Consultant;
- (iv) Mr. S.O. Kasuku - Lecturer, University of Nairobi;
- (v) Mr. D.M. Wanjau - Lecturer, University of Nairobi;
- (vi) Eng. S. Gitau - Senior Superintending Engineer, MRPW;
- (vii) Eng. F.D. Karanja-Chief Superintending Engineer, MRPW;
- (viii) Ms. Angela Kabiru-Kangethe - Information Coordinator, ILO/ASIST.

#### 2.1.4 Moderation

Moderation of the seminar was contracted out to Prof. F.J. Gichaga, University of Nairobi Enterprises and Services Ltd. (UNES).

#### 2.1.5 Rapporteur

The rapporteur of the seminar was contracted out to Dr. Gituro Wainaina, University of Nairobi Enterprises and Services Ltd. (UNES).

#### 2.1.6 Participants

The eleventh seminar was attended by 248 participants from a range of organizations including government ministries, research organizations, academic consultants and international organizations. Representatives from twenty one countries attended the seminar, namely:

Bangladesh	2	Ethiopia	12	Kenya	123
Ghana	2	Lesotho	3	Malawi	1
Mozambique	6	Namibia	1	Nepal	1
Nigeria	2	Norway	1	South Africa	21
Sweden	1	Switzerland	3	Tanzania	26
Uganda	12	United Kingdom	4	Zambia	10
Zimbabwe	10	Somalia	6	Laos	1

## 2.2 Seminar Proceedings

### 2.2.1 Seminar Theme

Widespread poverty is a major challenge facing developing countries. The development of infrastructure to support productive sectors and the creation of employment have been recognized by Africa and its developing partners as a key strategy in alleviating poverty. Further, labour-based approaches in infrastructure construction and maintenance have been proved to derive important socio-economic benefits including creating jobs and incomes, beyond the infrastructure itself unlike conventional, equipment-based approaches. In recognition of this and recommendations from previous seminars, the theme of the eleventh seminar - Integrated Labour-based Approach for Socio-economic Development - was selected to facilitate deliberation, sharing of best practice and furthering knowledge on the subject. To focus the discussion and exchange, the following sub-themes were selected:

- (i) Sub-theme 1: Community Participation and Performance-based Contracting;
- (ii) Sub-theme 2: Impact Monitoring and Evaluation, Environmental Sustainability;
- (iii) Sub-theme 3: Training, Research and Development;
- (iv) Sub-theme 4: Policy and Upscaling; Sustainable Financing and Resource Allocation.

## 2.2.2 Seminar Objectives

The seminar aimed at bringing together stakeholders involved in the infrastructure delivery process to exchange ideas and experiences, to be appraised of new policies and developments, and to identify and address key issues of concern in policy, planning, procurement and social aspects related to labour-based works in the infrastructure sector. The objectives of the seminar were:

- (a) To facilitate sharing, learning and expanding of knowledge through presentations, discussion and debate on the state of the art of policy, practice, research and development;
- (b) To review the status of taking forward of the recommendations made during the 10<sup>th</sup> Regional Seminar embodied in the “Arusha statement” and share experiences about strategies, processes and constraints in implementing the statement in various countries;
- (c) To discuss the future regional seminars and their roles to mainstream labour-based approaches.

## 2.2.3 Seminar Structure

The seminar programme was structured to allow for plenary presentations and discussions, group work and reporting, exhibitions and site visits (see seminar programme shown in Annexure 2).

Following the paper presentations under each sub-theme, participants raised questions and comments to which the paper presenters responded. Participants thereafter broke up into four groups for discussion, with facilitators directing and recording the outcome of these discussions. The groups were provided with relevant points to guide them in discussions. Each group presented the outcome of their deliberations in plenary.

## 2.2.4 Papers

The call for papers resulted to submission of thirty abstracts. The panel of reviewers selected fifteen for plenary presentation. The papers were grouped under the four sub-themes mentioned in 2.2.1 above.

The fifteen selected papers were edited, formatted and pre-printed before the seminar and each participant received a copy (volume 2) at the beginning of the seminar.

## 2.2.5 Site Visits

Visits to labour-based work sites took place on day three (Wednesday, 5<sup>th</sup> October 2005) of the seminar. Briefs on the various sites were presented in plenary prior to the visits and participants were provided with handouts on technical details of the sites.

The following sites were visited:

### **In Mombasa district**

Site 1: Improvement of Vikwatani-Mtopanga road to gravel standard

### **In Kilifi district**

Site 2: Bush clearing and stump removal on the Mtwapa-Kilifi road

Site 3: Road camber reinstatement on Mkwajuni-Mazuka road using a towed grader

Site 4: Soil conservation at Ng’ombeni area

Site 5: River training and gabion protection works at Mitangoni bridge

Site 6: Light grading using motorized grader on Kaloleni-Mavuani road

After the site visits, participants were treated to a luncheon at Mnarani Club before proceeding to the Bamburi Cement Company’s (Lafarge Eco Systems) Haller Park to visit the rehabilitated and reclaimed quarries.

## 2.3 Exhibitions

Various organizations and programmes mounted poster and publication exhibitions during the seminar.

Among the exhibitors were:

- (i) Ministry of Roads and Public Works (MRPW);
- (ii) International Labour Organization ASIST – Africa Programme (ILO/ASIST);
- (iii) Kenya Roads Board (KRB);
- (iv) Kisii Training Centre (KTC);
- (v) Bamburi Cement Co. Ltd.;
- (vi) Intermediate Technology Development Group-Eastern Africa (ITDG-EA);
- (vii) M/s Trimbon (K) Ltd. ( Exhibited and demonstrated a tractor towed grader and equipment used for preparing pre-mix manufactured in Nakuru, Kenya.)

## 2.4 Evaluation

During the last day of the seminar, participants were asked to evaluate the seminar through a written questionnaire. Results of this are presented in Annexure 6.

## 2.5 Acknowledgments

The Seminar Organizing Committee thanks the Government of Kenya for hosting the seminar and the Ministry of Roads and Public Works in particular, for its role in organizing the seminar. Many thanks are due to the Kenya Roads Boards (KRB), the Swedish International Agency for Development Cooperation Agency (Sida), ILO ASIST, the Standard Newspapers and the Bamburi Cement Factory for their support and assistance during the organization of the seminar.

Great appreciation goes to Maria Stridsman, Head of Sida, Kenya for her inspiring keynote address during the seminar and all the paper presenters for their excellent effort, as well as the group facilitators, the paper review committee, the moderator and rapporteur for their excellent performance.

Great appreciation also goes to Gina Din Corporate Communications, the administrator, for excellent coordination of logistics and administration which ensured smooth running of the seminar and that all participants were adequately catered for.

Finally, the committee wishes to thank all the participants and their sponsors, without whom the seminar would not have been a success.

## **3.0 Opening Ceremony**

### **3.1 Setting the Scene**

The moderator, Prof. F.J. Gichaga, set the scene by welcoming the participants to the seminar and gave a brief overview of the objectives and the programme for the week.

### **3.2 Summary of Welcome Remarks by Eng. C. F. Kiranga, Engineer-in-Chief, MRPW and Chairman, Seminar Technical Organizing Committee (STOC)**

Eng. Francis Kiranga welcomed the delegates on behalf of STOC. He introduced the members of the STOC. He noted his pleasure to see the seminar getting on its way and commended STOC members for their efforts during the 15-month preparation period. He thanked the sponsors of the seminar for making the seminar possible. He also extended thanks to the authors and presenters of the papers for accepting the invitation. Finally, he wished the participants an enjoyable and productive time during the seminar.

### **3.3 Summary of Welcome Remarks by Eng. Dr. F.N. Nyangaga, Executive Director, Kenya Roads Board (KRB)**

On behalf of the sponsoring organizations, Dr. Nyangaga welcomed the participants. He commended the STOC for their efforts in the organisation and coordination of the seminar.

He observed that the Kenya Roads Board (KRB) had significantly contributed towards the development of the rural roads network in Kenya. The Kenyan government has allocated three billion Kenya shillings (Kshs) (40 million United States Dollars, USD) to be used in the maintenance and improvement of the rural road network this financial year. The administration of these funds by KRB was carried out through technical compliance audits. Dr. Nyangaga noted that the funds were being channelled to all constituencies in Kenya, and would result in significant improvement of the rural network. In conclusion Dr. Nyangaga stated that KRB fully supported the use of LB methods to optimise the pro-poor impact of road works.

### **3.4 Summary of Welcome Address by Ali Ibrahim, ILO Area Office Director for Kenya, Somalia, Tanzania and Uganda**

Mr. Ali Ibrahim welcomed the participants to the seminar and expressed the interest of ILO in the success of regional seminars. He thanked the Government of Kenya for hosting the 11<sup>th</sup> Regional Seminar.

The ILO Director said that a lot of progress had been made on the resolutions made in the Arusha seminar but observed that there was a lot that still needed to be addressed on LBT. He noted that progress towards the Millennium Development Goals (MDGs) set out by different African countries has been slow and worrying, and it was becoming increasingly clear that at the current pace of development, Africa will not achieve the MDGs by 2015. The goals are meant to reduce poverty in the continent.

He noted that leaders of African Union Member States during the Extra-Ordinary Summit for Poverty Reduction and Employment in September, 2004 committed to place employment creation as an explicit and central objective of economic and social policies within the context of Poverty Reduction Strategies and the New Partnership for Africa's Development (NEPAD) to achieve the MDGs. African leaders recognized that finding and nurturing sustainable ways and means of creating adequate, productive and decent employment opportunities for all, is one of the most effective routes to alleviate poverty and empower people to be part of the social, economic and political processes. The ILO played an instrumental role in organizing the Summit and is committed to operationalizing its recommendations and action plans.



He further noted that public sector investment in road building, slum upgrading and irrigation have positive effect on employment that can be integrated into national poverty reduction strategies. The World Bank has recommended that in order for Africa to meet the MDGs, 3-5% of Gross Domestic Product (GDP) should be spent on infrastructure.

He observed that labour-based or employment-intensive approaches have been piloted, adopted and expanded as delivery approaches for infrastructure across several African and other developing countries because of the positive impact on socio-economic development they render beyond the infrastructure asset created. Studies on the impact on socio-economic development in several countries including Ethiopia, Kenya, Mozambique, South Africa, Tanzania and Uganda demonstrate short, medium and long term socio-economic benefits.

He further observed that in nations coming out of conflict, the use of such approaches in the massive investment in infrastructure reconstruction and rehabilitation, which are an essential prerequisite to economic and social recovery offer opportunities for employment creation, social reintegration, and the stimulation of local socio-economic development as witnessed in Mozambique and Somalia.

Employment-intensive investment approaches provide a means through which employment opportunities can be optimized in investments in infrastructure, which at present account for between 40 - 60% of national public investment budgets in developing countries and is likely to grow. The challenge is to upscale employment-intensive programmes, integrate them into socio-economic development and poverty reduction strategies. The Director noted that the successes of past and current programmes and initiatives must be mainstreamed so that employment opportunities in infrastructure investments are optimized and the potential impact on socio-economic development and poverty reduction fully realized. Policy and institutional frameworks, resource allocation mechanisms, implementation capacities, skills and knowledge must be developed. Mechanisms to monitor and sustain progress and the positive impact on socio-economic development and poverty reduction need to be established.

He stated that the ILO is committed to this process. Employment-intensive investment has been emphasized as extremely relevant and key to the ILO's Decent Work Agenda that articulates ILO's contribution to poverty reduction through employment strategies; and to the Global Employment Agenda. ILO views this as a route towards equitable and socially sustainable economic growth essential for poverty reduction.

He underscored the need to empower the poor through employment creation in order to effectively address poverty in the rural areas. In this context, he commended the Government of Kenya in its role in pioneering labour-based approaches in Africa. Finally he called upon the practitioners gathered to share experience and practice and push the boundaries of knowledge and practice.

### **3.5 Summary of Welcome Address by Amb. Eng. M.M. Mahamud, Permanent Secretary (PS), Ministry of Roads and Public Works, Kenya**

In welcoming the participants to the 11<sup>th</sup> Regional Seminar, the Permanent Secretary noted that the seminar brings together practitioners, planners, policy makers, researchers, development partners and various stakeholders in the infrastructure sector to share knowledge and experience on the innovative application of integrated labour-based approaches (LBA) in infrastructure development. He noted that the East African sub-region is keen to utilize employment intensive and community-managed approaches to infrastructure development. He further noted that experiences in infrastructure development have shown that when the right environment is created and a careful choice of technology is made, such an investment can produce significant socio-economic benefits particularly more jobs. In concluding his remarks, he said that he expected the 11<sup>th</sup> Regional Seminar to come up with practical approaches for the realization of full implementation of Labour-based Technology (LBT).



He then invited the Minister for Roads and Public Works, Hon. Eng. Raila Odinga, to address the delegates and formally open the seminar.

### **3.6 Summary of Opening Address by Hon. Eng. Raila Odinga, Minister for Roads and Public Works, Kenya**

Hon. Eng. Raila Odinga started by acknowledging the delegates from the various countries. Noting that the seminar provided an excellent opportunity to examine and appreciate the role of labour-based methods in the development of infrastructure to improve the economy, he thanked participants for choosing Kenya as the venue for the 11<sup>th</sup> Regional Seminar for Labour-based Practitioners.

The Minister noted that the use of labour-based methods by any country meant increased use of local resources in an economically efficient and sustainable manner. The approach is economically competitive with the existing alternative equipment-based methods.

He underscored the role of the infrastructure sector in transforming Kenya's economy and its' contribution to poverty reduction through the creation of employment opportunities. With the majority of Kenyan population residing in the rural areas, improving rural transport infrastructure was an essential component of the economic development and poverty reduction.

The use of this technology for road works, the Minister noted, has been an important aspect of the strategy to improve rural transport infrastructure in Kenya for the past 30 years. This technology not only produces gravel roads of comparable quality those built with equipment-based methods but also generates rural employment in a cost-effective manner.

He noted that labour-based methods provided rural areas characterized by high levels of poverty, unemployment and an abundant labour supply with a cost-effective means to develop a much-needed sustainable infrastructure.

The Minister noted that the Government of Kenya attached great importance on development of physical infrastructure to enhance economic development. The government, he observed has fully embraced the labour-based approach in its economic recovery strategy for wealth and employment creation as demonstrated by the Roads 2000 strategy for the rehabilitation and maintenance of roads using labour-based methods whenever these were cost-effective. The strategy covering 37 out of 72 districts in Kenya, is supported by various development partners including Africa Development Bank (ADB), the European Union (EU), the Government of France, Germany and the Swedish International Cooperation Development Agency (Sida). These development partners have pledged a total of Kshs. 6.241 billion for the next five years. The Government of Kenya has committed Kshs. 1.468 billion as counterpart funds in the same period.

The Minister noted that his Ministry had plans to improve the major roads in Kenya especially those linking Kenya to its neighbours including the Northern Corridor Transport Improvement Programme, which includes the rehabilitation of the Mombasa-Nairobi-Malaba corridor at a cost of 275 million USD with financial assistance from the European Union, the Nordic countries and the World Bank.

The Minister decried reliance on donor funds and emphasized the importance of resource mobilization for infrastructure development to enable Sub-Saharan countries break the vicious cycle of poverty.

The Minister appreciated collaboration with the International Labour Organization (ILO) in organizing the seminar and recognized the efforts being made by ILO worldwide as something worth noting especially in their endeavours in promoting the use of labour-based methods in public investment programmes.

With support from ILO, the Swiss Development Corporation (SDC) and the Swedish International Development Cooperation Agency (Sida), the Government started the first national and international courses for labour-based road works at the Kisii Training Centre (KTC) in the nineties.



The Minister particularly thanked the ILO/ASIST for their continued support for KTC on curriculum development and quality control of International Course for Engineers for many years.

The Minister expressed optimism that the seminar would address the issues that hamper the economic growth of developing countries and make appropriate recommendations on the way forward.

### **3.7 Keynote Address by Ms. Maria Stridsman, Head of Sida, Kenya**

Ms. Maria Stridsman thanked the Kenya government for inviting her to participate in the 11<sup>th</sup> Regional Seminar. She started her speech by diagnosing of the causes and the impact of poverty in developing countries and indicating that Sida's objective was to support efforts to make it possible for the poor to improve the quality of their lives. She noted that the problem facing Africa in general and Kenya in particular, has not been lack of ideas, policies, plans or strategies but those in decision making positions have not effectively addressed the issue of reducing inequality in the society. Referring to a study on an integrated economic analysis of Kenya, she explained that the findings were that macro economic policies were pro-rich, pro-men and pro-urban. She emphasized the need for leadership to develop and implement policies which reflect the values of the society that the country wishes to build for sustainability and challenged the leadership of developing countries to rise to the occasion and address poverty.

Ms. Stridsman called for more emphasis on pro-poor policies if poverty reduction is to be realized and that good ideas/plans will only be realized through proper implementation of such policies. Additionally, she said that accountability and transparency would ensure fair distribution of resources and reduce the gap between the rich and the poor.

Ms. Stridsman noted that community participation was a right and therefore should be aggressively embraced. She observed that technical solutions are necessary but they are not sufficient to adequately address the issue of poverty. She added that it was important to identify actors and drivers who were going to take people from one step to the next in eradicating poverty. Referring to the Kenyan Roads 2000, she noted that the programme had identified the key actors. It has further found a good balance between process and outcome; and between technical and social issues. She further noted that the programme was structured to involve 30% women and 10% youths.

The youth involvement in the infrastructure delivery process through LBA was of paramount importance, as the youth would always look for other ways of getting money, including using illegal means, if employment opportunities were not provided.

Finally, Ms. Stridsman congratulated the Government of Kenya for hosting the 11<sup>th</sup> Regional Seminar.

### **3.8 Setting the Scene: Joe Connolly, Chief Technical Adviser, (CTA) ILO/ASIST-Africa**

Mr. Connolly, gave a brief overview of the progress made in the regional seminars over the years. The first regional seminar held in Mbeya, Tanzania, dealt with basic technology issues, standards and modification of equipment, such as culvert moulds and tractor trailer hitches. Since then, discussions had broadened to include the need to move from project level to national implementation, the role of governments in setting appropriate policies, to the present discussions on how to measure impact on poverty.

He noted that major progress had been made at regional level on policy matters. Despite the strides taken, a lot still needed to be done in building capacity and institutions that would address issues relating to Labour-based Technology (LBT). Mr. Connolly said that pioneer LBT projects were driven by lack of recognition/understanding of LBT as a way of eradicating widespread



poverty, and underscored the need to talk the language of other professionals like the economists so as to optimize the impacts of labour-based projects. He observed that the private sector contracting capacity was still very weak and measures should be put in place to strengthen it. In addition, substantial financial allocation to labour-based technology (LBT), failure to address regulatory measures to support LBT and bureaucracy, were still stumbling blocks to efficient implementation of LBT programmes.

Finally, Mr. Connolly observed that LBT had come a long way and the policy makers needed to rise to the occasion and address the new realizations in LBT. He urged the participants to make firm commitments and follow up on implementation of the recommendations.



## 4.0 Paper Presentations and Discussions

The papers were grouped under the four sub-themes of the seminar:

- (i) Sub-theme 1: Community participation and performance-based contracting;
- (ii) Sub-theme 2: Impact monitoring and evaluation; environmental sustainability;
- (iii) Sub-theme 3: Training, research and development;
- (iv) Sub-theme 4: Policy and upscaling; sustainable financing and resource allocation.

The following sections present a brief overview of each sub-theme, the paper presentations and discussions. It should be noted that summaries of the paper presentations have been supplemented with material from the actual papers to provide the reader with a fuller overview of the papers. The full text of the papers is provided in Volume II.

### 4.1 Sub-Theme 1: Community Participation and Performance-based Contracting

Often communities, whom are the beneficiaries of infrastructure projects, are not given sufficient space to participate in the identification, planning, design and implementation of the infrastructure. In the last thirty years, there has been a global realization that for projects to foster socio-economic, political and environmentally sustainable development for all stakeholders, they require to generate public awareness and participation so that they are planned and implemented to mitigate all negative impacts.

Papers in this sub-theme raised issues and debate related to community participation in more areas than just road works. The first paper shared the experience, lessons learnt and recommendations from the ILO East Africa Regional Programme Promoting Public Private Partnerships (PPP's) in Municipal Service Delivery. The second paper focused on a Ghanaian urban paving project where locally manufactured concrete paving blocks were used in paving pedestrian paths and cycle paths.

Road maintenance delivery has gradually shifted from execution by public highway agencies to private sector contractors. Many agencies in Europe and the USA have adopted performance-based contracting. However, in Sub Sahara Africa, performance-based contracting is currently in the piloting stage. Performance-based contracting is proving to be more efficient in the use of resources especially those that are locally available when compared to direct labour or force account approaches which have been common in the past in infrastructure development, and even more so in maintenance. The Zambian experience of performance-based contracting for routine maintenance of roads was presented in this session.

## 4.1.1 Public Private Partnerships (PPPs) and Community Involvement – An Approach for Sustainable Municipal Infrastructure and Service Delivery Benefiting the Urban Poor

By Dr. Kumbwaeli Salewi, ILO Area Office, Dar- es- Salaam, Tanzania. Presented on his behalf by T. Stenström of ILO/ASIST, Harare, Zimbabwe

### Introduction

Municipalities in Africa are faced with many challenges including:

- (i) Rapid urbanization in the context of inadequate resources for facilitating implementation of urban development plans;
- (ii) 50-70% of urban areas are informal and lack basic services;
- (iii) Employment opportunities are limited with majority being forced to survive in the informal economy where conditions and security are poor;
- (iv) Traditionally beneficiaries are not involved in planning, implementation or maintenance of services or projects;
- (v) Absence of policies and flexibility in adopting by-laws to deal with problems emerging from squatter and informal settlements.

Mismanagement of meager municipal resources and overly bureaucratic and ineffectual management has led to problems of absent and deteriorating services and infrastructure. Municipal governments are increasingly looking for viable solutions and options to provide services. Such options include:

- (i) Transforming the role of informal sector to play a more dominant role in service delivery;
- (ii) Encouraging community participation through enabling and participatory strategies to provide the basic services;
- (iii) Checking the deterioration of the urban physical environment and existing services especially in the informal settlements;
- (iv) Improving urban management and governance with decentralized authority to local governments, Community-based Organizations (CBOs), Non-Governmental Organizations (NGOs), etc from the Central Government.

These options call for a paradigm shift, which involves looking to the private sector and community groups for support in delivering services in a sustainable manner. They entail attention towards issues of community participation, capacity building, integration, variability and diversity, gender marginalization and role of existing service providers. The paper describes projects by the city of Dar-es-Salaam to introduce Public Private Partnerships in municipal service delivery.

### Case Study: Solid Waste Management (SWM) in Dar- es- Salaam (1998-2003)

Solid waste management services in Dar-es-Salaam and in a few other municipalities have been franchised out to private companies, NGOs and CBOs including women and youth groups. Many other municipalities continue to express interest in establishing partnerships with local private sector to provide municipal services such as waste collection.

The strategies and action plan that were adopted in the privatization process were based on integrated approach, comprising:

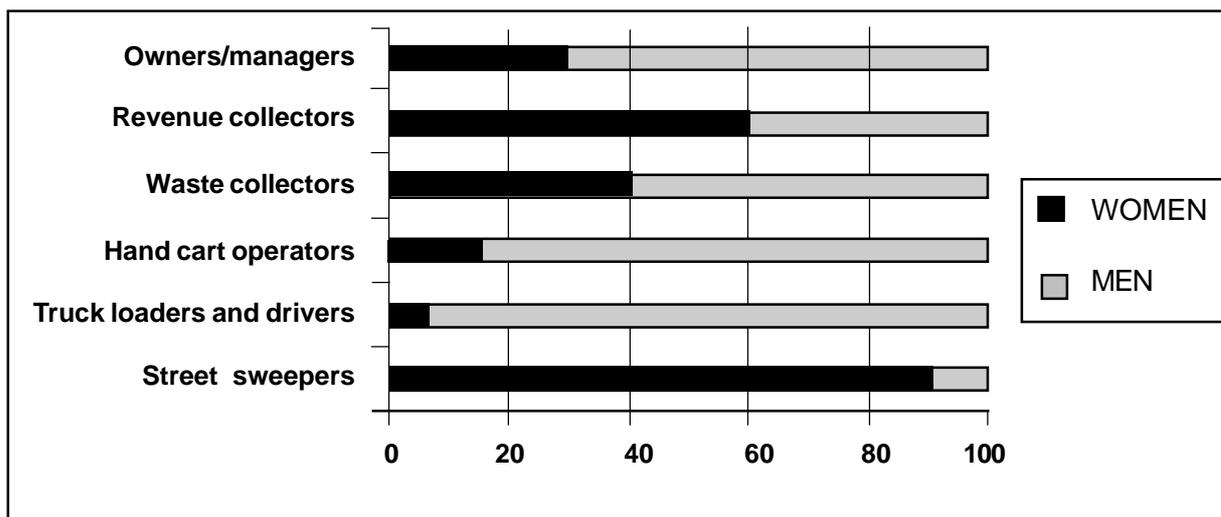
- (i) Privatization of SWM services by enacting by-laws;
- (ii) Community-based solid waste collection and disposal;
- (iii) Minimizing the generation of waste through recycling including composting.

In the case of the Dar- es- Salaam solid waste management project, the main objectives were to create sustainable income generating activities, and to improve cleanliness of the city and reduce the amount of waste through recycling.

## Project Profile

Poverty profile of waste workers:

- (a) 75% primary level education only (or partial);
- (b) 70% had dependants and women had more than men;
- (c) 50% of women are divorced/separated/widow;
- (d) For 68% of women, waste collection was the first paid job; for men: 30%;
- (e) For 92 % this was the “only job they could find”;
- (f) Average monthly income for men US\$38, for women US\$ 30;
- (g) 98% assessed themselves as belonging to the poor.



Graph showing extent of involvement of women and men in waste collection

Working and labour conditions of waste workers:

- (i) 75% without any protective gear;
- (ii) Improvised self-protection is highly inadequate and uncomfortable;
- (iii) 90% without written labour contract (but many have verbal agreements);
- (iv) 84% have no welfare assistance or compensation for injuries;
- (v) 75% are satisfied - CBO workers more satisfied than those in companies;
- (vi) No child labour found in franchised enterprises but some in autonomous initiatives;
- (vii) High incidence of child labour at waste collection points and dump sites.

## Achievements

The project registered several achievements including:

- (a) Employment creation and income generation for the urban poor - more than 2000 jobs (60% women) involving more than 50 franchisees in waste collection;
- (b) Waste collection increased from 4 to 40%;
- (c) Environmental cleanliness;
- (d) Child labour was eliminated in the SWM activities where the franchisees were performing well;
- (e) The project created demand which the Municipal Service Delivery Programme 2004 – 2006 is now upscaling in scope to cover Kenya and Uganda and more municipalities in Tanzania.

## Challenges

The project encountered a number of challenges, some of which remain to be addressed including :

- (a) Insufficient managerial capacities;
- (b) Struggle financially to survive – lack of working capital, access to credit and equipment;
- (c) Waste fee collection - requires enforcement of by-laws;
- (d) Transport to dump site/secondary collection;
- (e) Many low-income areas lack services;
- (f) Franchisees lacked working capital and business/administrative skills at the start of business;
- (g) Franchisees lacked access to credit and equipment;
- (h) Many franchisees, especially CBOs, were unable to transport the waste collected to the disposal site because of the high costs involved in the hiring of trucks;
- (i) Handling of hazardous wastes discarded by some homes, dispensaries, and small backyard industries and high-tech and electronic waste generated by imported technology;
- (j) Lack of protective gear suitable for the hot weather;
- (k) Rejection of low-income areas by franchisees;
- (l) Small contractors lack protection from the procurement system;
- (m) Working conditions and contracting approaches showed serious shortfalls in the system;
- (n) Lack of national policy framework.

### **Lessons Learnt and Recommendations**

- (a) PPP's in this context are a good strategy for SWM for improved services and the fight against unemployment.
- (b) Waste management should deal with gender equality and be transformed into decent work.
- (c) Solid waste management offers great potential for improving living conditions, contributing to poverty reduction, especially for women and young people.
- (d) Commitment and cooperation by stakeholders is a pre-requisite, particularly to achieve political support.
- (e) Need for continued capacity building and support eg on contracting issues.
- (f) The need for a national policy framework, the organization of transport from transfer points to properly maintained disposal sites, access to credit and equipment for franchisees, appropriate technology, etc.

### **Case Study: Employment Creation in Municipal Service Delivery in East Africa – Improving Living Conditions and Providing Jobs for the Poor (2004-2006)**

Building on the lessons of the Dar-es-Salaam project approach, this project approach was based on:

- (a) Capacity strengthening of municipal authorities and waste collectors, through awareness raising training, network and organisation development;
- (b) Technical advice on enabling systems for small enterprise based service delivery including pro-poor contracting, revenue collection, and monitoring and evaluation;
- (c) Support to broad policy development on issues related to poverty reduction, service delivery and employment creation through advice and knowledge development and dissemination.

A number of tools were developed, adapted and used in the project including:

- (a) Informal Economy Training Guide;
- (b) Start Your Waste Collection Business;
- (c) Pro-poor procurement guidelines under development (community contracting guidelines);
- (d) Monitoring and Evaluation Systems;
- (e) Format for information gathering to assess potential for PPP's;
- (f) Better Services & More Jobs Training.

## **Case Study: Community-Driven Settlement Infrastructure Upgrading-Hanna Nassif, Dar- es- Salaam**

The project involved:

- (a) Improvement of roads and drainage works;
- (b) Improvement of water supply system;
- (c) Solid waste management;
- (d) Micro-enterprise development in an informal settlement setting in Dar- es -Salaam.

The approach has been replicated in 31 settlements in Dar- es- Salaam through World Bank support.

### **Achievements**

The achievements of the project include:

- (a) Community acquired technical skills;
- (b) Gravel roads were constructed;
- (c) Road crossings and footbridges were built;
- (d) A water pipeline was laid;
- (e) The area which was originally vulnerable to flooding was reduced from 56% to 30% which led to a substantial decrease in water-borne diseases.

### **Key Elements for Success**

The following considerations for successful and sustainable implementation of PPP in service delivery are drawn from the project experiences and lessons learnt:

- (a) Sustainability concerns;
- (b) Partners;
- (c) Tapping the power base;
- (e) Respect for all;
- (g) Plan, implement, manage and celebrate together.

### **Community Participation in Practice**

Community participation can take many forms including:

- (a) Contract between CBO and a funding agency;
- (b) Formation of Project Steering Committee (PSC) for which there is need for a constitution of the PSC in which its functions are clearly defined and remuneration at implementation stage also properly articulated.

Attributes of a successful community participation specialist include:

- (a) Knowledge, with facilitative skills, patience and trust;
- (b) Could be a project engineer or an external facilitator.

### **Conclusions**

PPP in municipal service delivery requires:

- (a) Government support at the highest level for success.
- (b) Capacity building of technical staff, especially engineers and planners, in areas beyond their traditional domains including social sciences such as sociology, communication and negotiating skills, participatory management.
- (c) Flexibility in design options and standards.

Above everything else, these approaches require patience as results may take a long time to come.



## Plenary Questions and Clarifications

**Q** *Are men interested in participating in SWM activities?*

**A** Yes, and more so as they realize SWM can be good business. We, however, noted that men and women take on different roles in the SWM enterprises. In street sweeping activities, there are many women.

**Q** *How are the SWM collection fees paid and is this a problem?*

**A** The municipality is contracting out SWM on a franchise basis, which means that the SWM entrepreneur is responsible for servicing a certain area including collecting fee at household level. There are by-laws in place. However, there is a need for further awareness-raising amongst communities on payment of fees and municipal authorities should play a more active role here.

## 4.1.2 Expanding the Application of Labour-based Methods - The Potential of Urban Paving

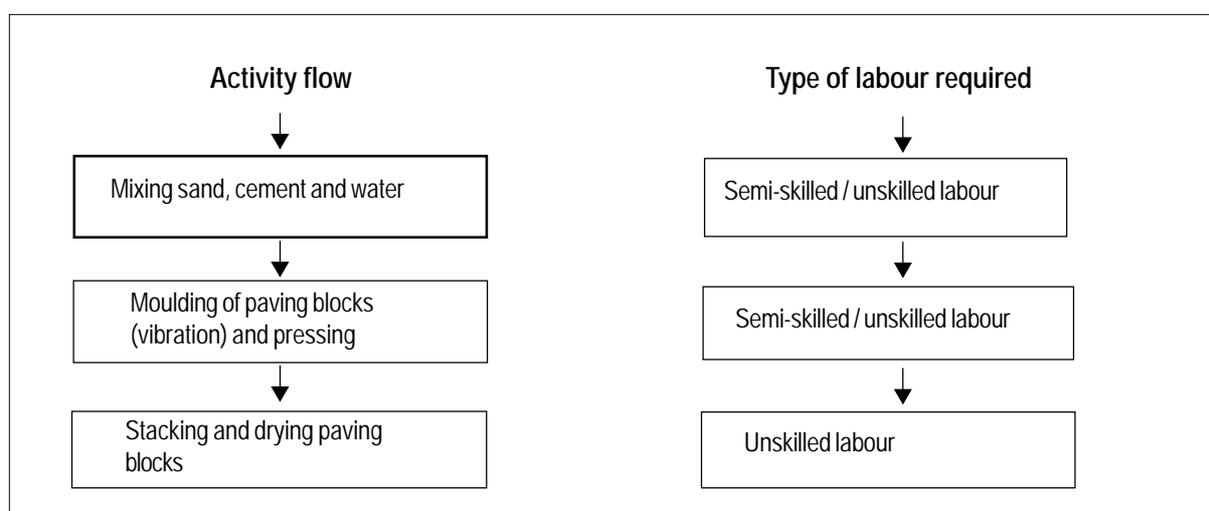
By Dr. Samuel I. K. Ampadu, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

### Introduction

The presentation started by outlining urban unemployment statistics and trends in Africa and more specifically in Ghana. It went on to outline successful use of labour-based technology in rural road works in Africa, noting that it can be used to provide for urban infrastructure such as street paving and create jobs for the unemployed urban youth who are primarily engaged in street hawking. The use and manufacture of interlocking concrete block paving for urban pedestrian walkways and light trafficked areas was described.

### Manufacture of Interlocking Concrete Blocks

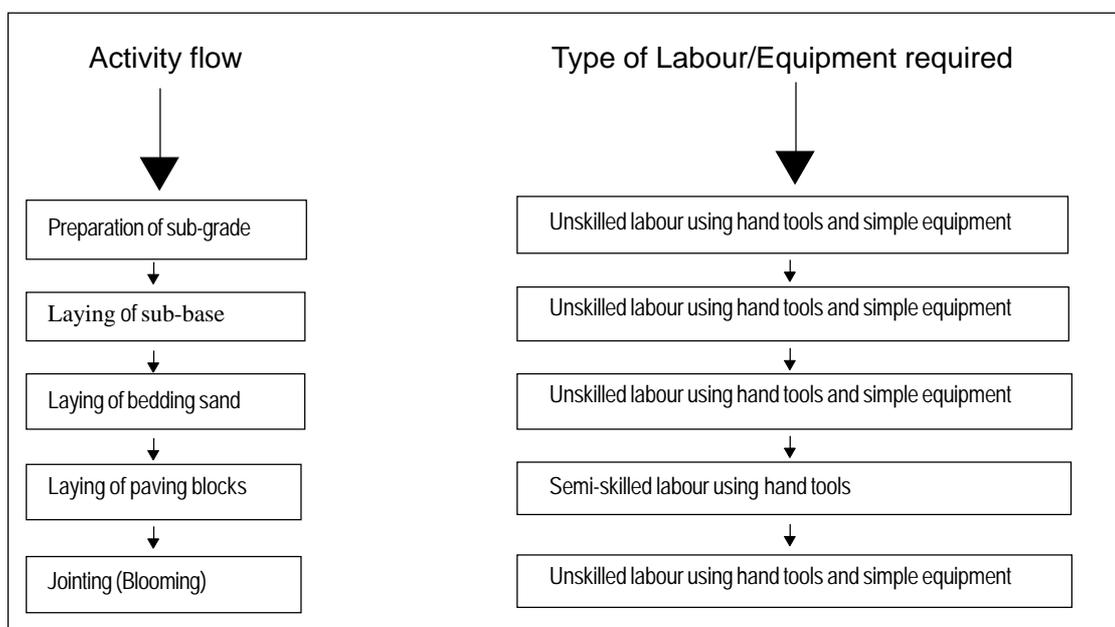
The manufacturing process as illustrated below is amenable to labour-based methods:-



Depending on the scale of the production either a hydraulic press or a hand press can be utilized. Hand pressed blocks may result in lower and variable strength blocks but this can be controlled by better quality control measures and introducing vibration into the compaction process. Micro-concrete roofing (MCR) tile technology could be adapted and adopted for paving block manufacture. MCR technology is labour-intensive, suitable for small-scale local production and is amenable to the involvement of women.

### Installation

The installation process is very similar to rural gravel road construction, and allows for the use of semi and unskilled labour.



## Procurement Options

Two options possible:

### 1. Conventional Contracting

- (a) Client – Metropolitan Authority;
- (b) Engineers – Department of Urban Roads and / or Private Sector Consultants;
- (c) Contractors:
  - Small-scale contractors for manufacturing and installation;
  - Large-scale contractor manufactures, small-scale contractor installs.

### 2. Community Contracting

In the case of an unplanned settlement, community contracts can be used with defined roles, rights and responsibilities of each party, i.e. Metropolitan Administration, the private sector contractors and the residents in the community. The contract clearly defines community contribution in terms of supply of labour, paying for part of the works and their role in constructing the pavement or maintenance. Options which involve the use of specialized manufacturers to supply the paving blocks or training of small manufacturers to manufacture the blocks to meet set standards can also be integrated.

## Labour Source

A study in the Central Business District of Kumasi in Ghana revealed that there appears to be some willingness on the part of street hawkers to engage in concrete paving block construction. However, the wage rate required to attract them away from hawking into construction may be higher.

## Conclusions

The high unemployment rates in urban areas and the large deficit of infrastructure needs make the application of labour-based methods to the provision of infrastructure in the urban areas timely. The use of interlocking concrete block paving for urban pedestrian walkways, cycle ways and light trafficked areas can have several advantages over the use of poured concrete paving or asphalted pavement and it is also amenable to labour-based methods. However, there is the need to consider:

- 
- (a) The quality of output of small-scale paving block manufacturers through possible modification of the technology, the provision of credit, and the opening of new opportunities.
  - (b) Pilot projects to learn the detailed problems to be encountered in the urban setting and what types of training are required.
  - (c) The appropriate methods of procurement.

### **Plenary Questions and Clarifications**

**Q** *What other options of pavement have you considered?*

**A** Several options are available in pavement design and construction. However, manufacturing the pavement blocks and the involvement of a large labour force in the construction using blocks provides a big opportunity for employment creation.

**Q** *How can you further reduce the cost of paving using the proposed method since it seems costly?*

**A** There is space for reducing the proportion of cement in the mix as long as the compressive strength is not compromised and this will greatly reduce the final cost of the project.

**Q** *How will the method ease congestion in the streets?*

**A** Paving of the footpaths will help get people off the main carriageway.

### 4.1.3 Performance-based Contracts Case Study in Zambia

By Eng. K. Siwale, Road Development Agency, Zambia

#### Introduction

To address the challenges that the Government was facing with regard to road maintenance, the Government of the Republic of Zambia, in 1994, came up with a deliberate strategy to gradually move away from the traditional public sector delivery to performance contracts by the private sector.

From independence in 1964 up to the 1990's, Zambia continued to maintain its road network through traditional force account. There was a decline in road maintenance funding for the period 1977-1992, which resulted in sharp deterioration of roads which were in fair and good condition. As a result of poor road maintenance management in the 1980's and 1990's, only 20% of the road network was in good condition. In 1994, the Zambian government came up with a deliberate strategy to move away from traditional methods of maintenance to performance contracts.

Following the adoption of the Transport Policy of May 2002 and the subsequent legislation, all public roads have been placed under the jurisdiction of the Road Development Agency.

#### Performance Contracts

The Road Development Agency is now carrying out performance contracts on all roads that are in good and fair conditions. These are 12-month contracts in which contractors are given portions of road sections to carry out routine maintenance using labour-based methods. Performance contracts are referred to "as payment based on performance (or results) achieved". This type of routine maintenance has been carried out in Zambia since the year 2000.

The main agents for performance contracts in routine maintenance are the Ministry of Works and Supply (MWS), Road Development Agency (RDA), Ministry of Local Government and Housing (MLGH) and the National Roads Fund Agency (NRFA).

Performance of contractor's work is rated in two stages:

- (a) First assessment, which helps in monitoring of progress over the contract period;
- (b) Second assessment for payment.

The project manager's responsibilities include:

- (a) Giving out possession of site within seven days after signing the agreement;
- (b) Paying up to 20% within 14 days of demand;
- (c) Assessing performance every month;
- (d) Paying certificates within 28 days of approval;
- (e) Issuing completion certificates.

The contractor's responsibilities include:

- (a) Starting the job within 14 days of signing the agreement;
- (b) Submitting a programme of work;
- (c) Taking third party insurance;
- (d) Achieving performance targets.

National level objectives include:

- (a) Supporting and inducing local contracting industry;
- (b) Providing an enabling environment for increased entrepreneurial opportunities within the economy;
- (c) Providing increased employment opportunities for small-scale contractors as well as other Zambians.

## Performance Standards

A performance standard is a description of the required condition level for the work item being maintained. There are three main groupings of performance standards:

- (a) Site organization;
- (b) Verges and drainage;
- (c) Road furniture.

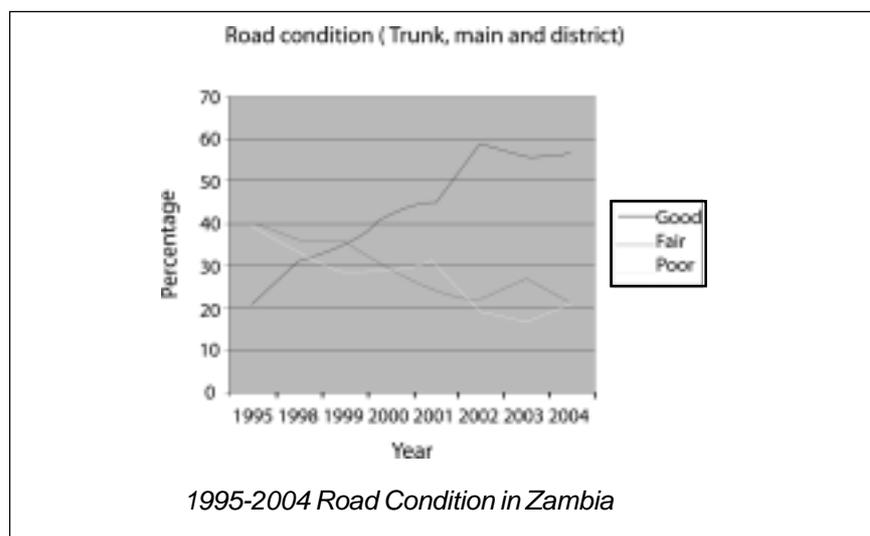
The performance standards for each grouping are combined to give a Target Performance for the whole road. In 1994, Zambia took a deliberate policy to move from Force Account to Performance Contracts and trial contracts were awarded and successfully implemented in 1998 -2000. In May 2000, a workshop was held with stakeholders in order to come up with modalities to introduce Performance Contracts. By September 2000, the first contracts were awarded on selected roads in good and fair condition. These contracts did not call for any substantial investment for pavement strengthening or upgrading of the road. By 2004, MLGH and RDA created over 30,000 labour-based jobs for small-scale contractors and local inhabitants.

## Road Financing

According to the NRFA Annual Report of year 2004, about 47.86 billion Zambian Kwacha (K) was spent on 18,467 km of the road network comprising trunk, main, district urban and feeder roads in maintainable condition under performance contracts. About 15,000 km of the road network under MLGH was under performance contracts at an estimated cost of K15.4 billion. In addition, during the year under review, the committees of NRFA reviewed and recommended 105 performance contracts for routine maintenance covering a total distance of 2,033.78 km worth about K28.3 billion under both MWS and MLGH.

Roads in good conditions increased from 21% in year 1995 to 57% in 2004, indicating that a lot of money had gone into reconstruction and rehabilitation. The roads in poor conditions also reduced from 39% in 1995 to 21 percent in the year 2004 as shown in the figure below.

Fuel levy remains the main source of financing for routine maintenance and there has been considerable improvement in remittance of fuel levy funds.



## Challenges

Although performance contracting is successful, good and cost effective, it has faced many challenges including:

- (a) Inadequate capacity within the road agencies and local consulting industry to manage



and supervise the national programme, including inadequate engineers, inadequate transport for supervisory staff.

- (b) Entrenched poor attitudes within road agencies and partner organizations and lack of capacity and motivation to embrace and implement new concepts and ideas.
- (c) Inadequate capacity of the local contracting industry with required experience to satisfactorily implement road maintenance works.
- (d) Lack of reliable road network data, traffic data and road condition data to effectively plan for maintenance needs.
- (e) Long procurement procedures and problems with the bonds for small-scale contractors.
- (f) Erratic remittances of fuel levy by the Ministry of Finance and Economic Planning.

## Conclusions

There has been marked improvement in the management of roads in good condition and this has been attributed partly to road financing and consistent maintenance. The case study demonstrates that performance contracts in routine maintenance to manage the roads by utilizing fuel levy are a workable option. Some of the benefits accrued from carrying out performance contracts include:

- (a) Reduced overall administrative costs;
- (b) Reduced capital cost of under-utilized equipment;
- (c) Induced competition;
- (d) Support and induced local contracting industry;
- (e) Provides an enabling environment to increase entrepreneurial opportunities within the economy;
- (f) Provides increased employment options and opportunities for many Zambians.

It was noted that the programme has realized a substantial reduction in capital budget allocations to replace specialized maintenance equipment.

## Plenary Questions and Clarifications

**Q** *How is road management in Zambia being addressed?*

**A** Road management and construction is being taken over by the private sector.

**Q** *Are there other sources of funding besides fuel levy fund?*

**A** No, but the government is currently looking into alternative sources.

**Q** *Do the communities have the power to change the way that performance contracts are carried out?*

**A** The community's powers are still limited and they are mainly involved at the initial stages of the project.

#### 4.1.4 Discussion Points/Questions for Sub-theme 1

The following discussion points and questions were provided to the four groups for discussions:-

##### **Groups I and II (community participation):**

- (i) What roles would communities play in infrastructure development and service delivery?
- (ii) Identify key challenges in community involvement in infrastructure development and service delivery.
- (iii) How would you promote community involvement in infrastructure development and service delivery?

##### **Groups III and IV (performance contracting):**

- (i) Why should we adopt performance-based contracting?
- (ii) What are the strengths and weaknesses of performance contracting?
- (iii) How can we enhance community involvement and utilization of local resources in performance contracting?

#### 4.1.5 Reports from Groups

Group I and II: (community participation)

##### ***(i) What roles would communities play in infrastructure development and service delivery?***

- (a) Project identification based on community needs.
- (b) Prioritizing of projects taking into account constraint of resources, and based on a community's needs and priorities.
- (c) Participation in planning and design to assist in tailoring the project to the needs of the community by taking into consideration their values at the initial stages of the project thus making the end product meet the fundamental requirements of the community.
- (d) Funding - Communities can provide part of the funds to be used in the project, as this would make them own the project and fully participate in all the stages of the project.
- (e) Implementation of projects - The community can be involved in the provision of labour as this will help in the creation of job opportunities hence reducing poverty.
- (f) Monitoring and evaluation - The community should be involved in assessing the performance of the project against certain set bench marks during implementation and after.
- (g) Operations and maintenance - Routine and periodic maintenance of the project should be carried out by the members of the community in which the project is based. This will provide employment opportunities to those who get involved in the maintenance.

##### ***(ii) Identify key challenges in community involvement in infrastructure development and service delivery?***

- (a) Unfair representation of stakeholders – Ensuring fair representation of all members of the community is a challenge. Unequal or lack of representation of all sections of the community leads to the development of projects that do not address the community's most pressing needs.
- (b) Unfamiliar guidelines/specifications - Projects funded through NGOs use guidelines and specifications designed according to requirements of the funding agency. This in most cases reduces community involvement unlike the case where public funding is used.
- (c) Lack of skilled human resource- Community involvement is reduced in projects that require skilled manpower. Sustainability of the trained labour force is also difficult since the community is not engaged in projects continuously.
- (d) Time constraint – Ensuring participation is time consuming. In addition, learning curve slows implementation, and since most of those to be involved are unskilled and inexperienced, this slows the progress of projects.

- (e) Balance between technical and community inputs - This is pronounced in projects in which there are conflicts arising between the technical requirements and the community requirements.
- (f) Conflicts of interest in a project influences the way the project is carried out. In project prioritizing, some members of the community may influence projects to suit their needs at the expense of the general good of the project to the entire community.
- (g) Legal limitations - contract documents may not accommodate community involvement in the project.

**(iii) How do we promote community involvement in infrastructure development and service delivery?**

- (a) Development of institutional framework - This can be aided by legislation that is pro-community involvement.
- (b) Capacity building - Training members of community would assist in developing and incubating knowledge and skills required for projects.
- (c) Sensitization of the community - the community could be made aware of the benefits that would accrue following their involvement in the project. This would assist in making the community appreciate the importance of their input in all the stages of the project.

## **On Performance-based Contracting**

**(i) Why should we to adopt performance-based contracting?**

- (a) Adoption of performance-based contracting helps transfer risks from the public sector to the private sector that has a better capacity to handle the risks more effectively.
- (b) More efficient and optimal use of resources. As the contractor is paid according to the results achieved, the contractor will always try to achieve the required results with least resources by avoiding unnecessary wastage. It was also observed that performance-based contracting provides solutions to the shortcomings in force account.

**(ii) What are the strengths and weaknesses of performance contracting?**

### **Strengths**

- (a) Reduced supervision on the contractor since the contractor's payment is based on the quality of the work at the end of the contract. This arrangement makes the contractor put a lot of effort in providing quality during construction.
- (b) Capacity building in private sector - the contractor trains his employees on how best to perform their duties so as to realize best results which form the basis of his payment.
- (c) Improved quality of works.
- (d) Generates income for the local economy as resources are used and job opportunities are created locally.

### **Weaknesses**

- (a) Specifications of projects that are done under performance-based contracting are not well defined because more emphasis is put on the end product and less on the processes involved.
- (b) Performance-based contracting requires attitude change on the part of the contractor since traditionally, contractors are not self-driven towards realizing quality but on profit maximization.
- (c) Performance-based contracting gives room for corruption.
- (d) There is loss of control over the method of delivery since all focus is put on the performance of the end product. The method of delivery is entirely put in the hands of the contractor and other stakeholders have little input on the process.
- (e) Emergencies are not well addressed in performance-based contracting since the contract documents rarely put into considerations the unforeseen events at the time of tendering.



***(iii) How can we enhance community involvement and utilization of local resources in performance contracting?***

Community involvement and utilization of local resources can be enhanced through the following:

- (a) Community organizations - the members of a community organization can be trained on a given project and the skills so acquired used every time such a project is implemented.
- (b) Public training - the public can be made aware of and trained on skills required in a project through public meetings.
- (c) Simplifying standards and making them easily understood even by people with basic education.
- (d) Government can create an enabling environment that facilitates community involvement and local resource utilization by undertaking legislations that are pro-community involvement.
- (e) Creation of decent working conditions including providing protective clothing to the workers and also giving good remuneration, etc.



## **4.2 Sub-theme 2: Impact, Monitoring and Evaluation; Environmental Sustainability**

As with other development projects, the impact of labour-based infrastructure projects on poverty development is often not adequately monitored. Labour-based projects often use varied approaches and methodologies to gather baseline data, monitor and evaluate the impact of the approach and establish linkage between the effects of specific development interventions and poverty levels – making it difficult to contrast the clear benefits against other methods. Two papers were presented on impact assessment. The first paper focused on the Rapid Assessment of Poverty Impacts (RAPI) methodology developed by ILO was applied. RAPI is a cost effective survey based method for poverty assessment over a period of time which provides a comprehensive methodology for assessing the impact of employment-intensive projects/ programmes on the quality of life of the intended beneficiaries. The second paper reviewed baseline and impact assessment studies carried in Botswana, Kenya, Uganda and Tanzania and reviewed the methodologies used and the outcomes. Overall conclusions drawn from the studies are that labour-based methods are indeed cost effective up to a certain wage rate depending on prevailing local wage rates and do bring significant socio-economic benefits to the communities.

A third paper presenting a case study on the Kenyan experience of integrating labour-based methods into environmental management activities in rural access road projects summarized possible labour-based environmental management intervention in rural roads projects.

## 4.2.1 Rapid Assessment of Poverty Impacts (RAPI) Methodology: Lessons from the Field Application of the Approach in Ethiopia

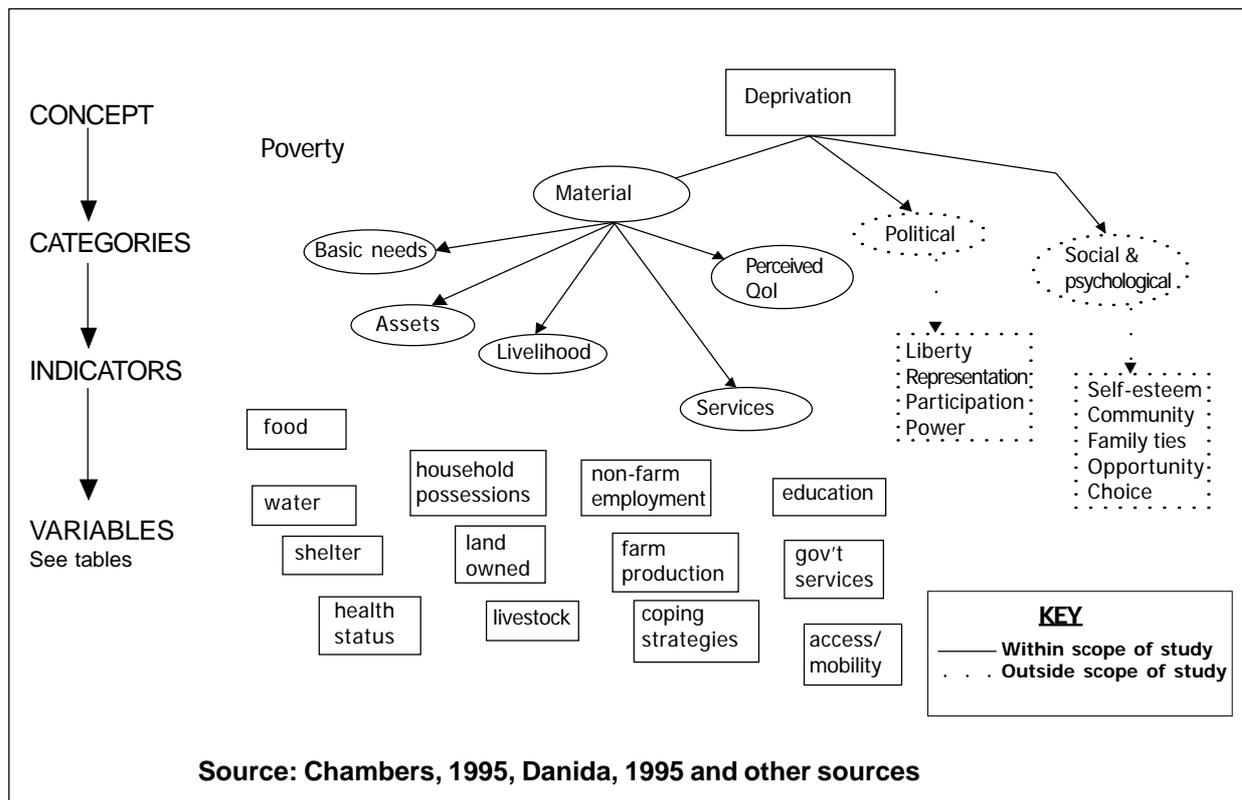
By Kwaku Osei Bonsu, International Labour Organisation (ILO), Addis Ababa and T. Mangesha, Consultant, Ethiopia  
Presented by Kwaku O. Bonsu

### Background

The presentation described the steps taken during the trial field application of RAPI on a labour-based road construction programme in the Tigray region of Ethiopia. RAPI is a methodology developed by the Employment-intensive, Investment Branch of the ILO (EMP/INVEST). It employs a conceptual approach which defines poverty as the deprivation of “possessions and services.”

The methodology uses rapid but rigorous sampling at household level based on the use of a short questionnaire and probability (cluster-based) sampling of households within a specified geographical area. The collection of minimal household-level data provides necessary poverty indicators and household characteristics. Supplementary data is gathered from community-level interviews. The design of the survey incorporates ‘with’ and ‘without’ project interventions. The method calls for a ‘study’ and a ‘control’ site, and the changes over time are monitored or assessed by a ‘before / after’ design: involving a baseline and follow-up surveys (short-run at about year two and long-run at about year five to six). The application of rigorous and quantitative data on set poverty change over time provides valuable information for use by planners, donors and decision makers. The methodology aims at plausibly attributing observed changes to both immediate and indirect effects of employment intensive construction projects and resulting increase in economic activity.

Figure 1. Poverty: From concept to indicators



## Tigray Field Survey

The field survey incorporated areas 'with' and 'without' project interventions. Following the reconnaissance, training and pre-testing, sampling of the baseline data in the study and control areas, the survey data using sets household and community questionnaires are gathered. The data is then turned into poverty measures by analysing with the Statistical Package for Social Sciences (SPSS 10). The indicators for each of the poverty measures are based on non-income dimensions, seen as the deprivation of basic capabilities rather than merely low - level income. The indicators are considered to be 'markers' of change and related to the nature of the objectives and intended impact of EIP.

## Limitations of RAPI

- (a) Poverty assessment is viewed in the short-term. The inter-relationships of the various elements and complexity of multi-dimensional nature of the problems require a long-term perspective.
- (b) The selection of control and study areas is very critical as various factors make the selection process challenging and time consuming.
- (c) The RAPI method includes perception of quality of life as an indicator. Despite the compelling need to deal with the subjective perception, this aspect is over-simplified, resulting in difficulties of gathering data from reliable responses. It also seems that the income/ expenditure aspects do not receive sufficient emphasis. This leads directly into a discussion of where the root cause of poverty lies, the economic system or otherwise.
- (d) As far as survey instruments are concerned, it should be stated that there is no provision for adequate direct observation for validating data collection in-advance. The duration of the assignment does not allow sufficient time for interaction and for returning to the field to collect additional information.

## Lessons Learnt

The outcome of the work carried out in Tigray region so far, justifies the suitability of the RAPI methodology as a useful tool in assessing poverty.

The field application demonstrated that the RAPI method is generally a cost-effective method for assessing the impact of small-scale employment-intensive projects on the quality of life of the intended beneficiaries.

Careful planning is critical to avoid mistakes, particularly by way of pre-testing the survey and field methods, to ensure that the procedures are workable and the survey is understandable. Detailed guides should be issued as part of planning of the survey.

## Conclusions

- (a) Poverty assessment should be viewed not only in a short term, but also in a long term perspective, considering the realities, uncertainties and change.
- (b) Assessment of perceived quality of life need to be further developed. This would enable one to overcome a wide variety of interpretations of the 'term' and the semantic confusion that has arisen.
- (c) The method would be further enriched by defining more concretely an indicator and 'threshold' consumption expenditure or income in order to ascertain whether future levels reflect a condition of poverty with signs of decline or improvement.
- (d) Direct observation should be included as a survey instrument in advance to check the validity of data collection more comprehensively.
- (e) Although the approach was developed for road projects, it could be adapted and applied to other small-scale local / regional sector projects if the objective is to examine net impacts and focus on material indicators of poverty. Multi-sector, community-based projects may better be served by combining participatory methods with some survey based on household and or community level data collection.

## Plenary Questions and Clarifications

- Q** *The RAPI method seems complicated as it involves study and control areas, with and without project intervention as well as the hiring of enumerators and other personnel. It also requires baseline and follow-up surveys (over two to five-year periods) for tracking impact on changes in poverty status. What is RAPID about it?*
- A** The RAPI method is considered to be rapid and efficient as it is based on simplified survey instruments (household and community questionnaires), and the conversion of raw survey data using 'dummy output' tables. Essentially, the method requires rigorous techniques of probability sampling (simple random sampling). The method is therefore rapid considering the soundness of the analytical techniques that provide for generating useful and reliable information on poverty status. Yet, as the 'baseline' survey has just been completed, there are opportunities for testing the rapid nature of survey instruments, data entry, data processing and analysis. Adjustments could then follow.
- Q** *To what extent and in what respect is the road project being used to impact changes in the deprivation of assets, which is the centre of impact assessment?*
- A** The project road (about 95 km long) is designed to enhance employment. It is labor-based and employment-intensive. It provides employment for over 300 to 400 people over three-year period. One of the objectives is to improve household assets through the purchase of essential items in the context of addressing the issue of 'vulnerability'.
- Q** *Are the respondents of the questionnaire those who work on the road?*
- A** Yes. However, not all respondents (at baseline) expressed interest to be employed in road works.
- Q** *What can you do with the results of the impact assessments and how?*
- A** The information generated from the impact assessment should feed back to the planning and decision-making cycle. It is expected that the results would provide inputs to policy design and strategy and programme formulation.
- Q** *How about including social cost–benefit analysis?*
- A** The method does not provide for social cost-benefit analysis, as the fundamental objective of the method is to assess changes in poverty status.
- Q** *Shouldn't follow-up surveys be carried after five years, in addition to the two years?*
- A** It is anticipated that a follow-up survey would also be carried out after five years, as project impacts as compared to project effects, involving ultimate changes in living conditions would largely be realized in the long-run.
- Q** *Shouldn't it be appropriate for monitoring to include vulnerability characteristics?*
- A** The method incorporates indicators relating to 'vulnerability'.

## 4.2.2 Impact Monitoring and Evaluation of Labour-based Programmes in Africa

Eng. S. Mambo, Gibb Africa, Kenya

The presentation reviewed impact evaluation of labour-based road works projects in Kenya, Tanzania, Botswana and Uganda.

### Impact Evaluation in Rural Roads Programmes in Kenya

The Rural Access Roads Programme started in 1974. It was the largest road construction project in Africa implemented with labour-intensive methods. An Impact Evaluation Study of RARP was carried out between 1979 and 1984. Farm household surveys were carried out before and after the road construction. Traffic counts, including origin/destination surveys for the same roads, were repeated every year over a period of five years. In addition, aerial surveys of roads and non-road blocks were carried out.

The key findings of the RARP impact evaluation study were:

- (a) There was a slight increase in traffic, although 90% of such traffic was pedestrian;
- (b) Supply of labour was generally adequate though occasionally, temporary shortages did occur;
- (c) Background of labourers was generally linked to relation between market wages. Wherever RARP task rate (set by the Ministry of Labour in accordance with wage guidelines issued by the Ministry of Finance) was higher than market wage rate, better-off labourers were attracted. Wherever RARP wage was equal to or less than market wage, as in Central province and close to urban centres, poorer persons tended to be attracted including women, landless and small farmers. An increase in RARP wage was in fact followed by a decrease in the number of women workers;
- (d) Aerial surveys of 60 RARP roads showed that, within impact zones of 2 km either side, about 40% of land was cultivated. It is important to note that size of impact zone was constrained by physical factors such as mountains, rivers and so on within the two km distance in about 75% of all cases;
- (e) Results of the two rounds of the seven-road farm household survey showed the following changes before and after RARP:
  - (i) The programme contributed to increased production and sales of food crops, livestock, milk and poultry;
  - (ii) The programme appeared to have contributed to decreased production of cash crops;
  - (iii) Increased food crops and livestock products were primarily marketed;
  - (iv) The rural access roads contributed to increased cash earnings from both farm and non-farm sources;
  - (v) Increased cash earnings were spent primarily on food (about half of all expenditures), household supplies and transportation.

### Comparative Study of Labour-based Versus Equipment-based Methods in Road Works in Tanzania

In 2003, the Ministry of Works, Tanzania with financial support from the International Labour Organization (ILO) commissioned a comparative study on the impact of labour-based versus equipment-based methods in road works in Tanzania.

The following is a summary of the major findings that are relevant to this presentation:

- (a) The study showed that Tanzania had made considerable improvements in macro-economic performance. The key challenge that remained was to translate the macro-level achievements to improved standards of living of the majority of the people in households and communities especially in the rural areas.
- (b) The positive impacts of labour-based roadworks came through employment and income



generation and improved standards of living among rural households and communities. In addition, they were found to be more consistent with participatory development and empowerment, when compared to equipment-based works.

- (c) The development of the local construction industry is hampered by low capacity of contractors, inadequate work opportunities aggravated by inappropriate contract packaging of works, corruption and limited access to credit facilities. Many of the contractors who were interviewed in Morogoro and Mwanza were positive on the use of labour-based technology. However, conditions on the ground were difficult, especially procurement procedures and regulations and access to LBT equipment and facilities.
- (d) Public awareness and commitment towards labour-based and community-based delivery arrangements was still low. Communities were not empowered enough to put across their preference for LBT even where it was clear that it benefited them.

### **Impact of Evaluation of the Labour-based Road Works Pilot Project in Botswana**

A pilot project carried out to develop experience and collect information on the application of labour-based methods for the maintenance of sealed roads, with a view to expanding the approach to 520 km of sealed primary and secondary roads was carried in Botswana. The pilot project further aimed at testing and assessing the feasibility of constructing roads using the private sector.

An impact evaluation study took place, six months after the completion of the demonstration project. This allowed individual households, community leaders and local business owners to comment on any differences between their socio-economic situation during the project and in the post-project period. Fifty households were interviewed in the control community. The data shows that the communities along the project roads, both as a whole and as individual households, felt that they had benefited from the project. The following is a summary of the impact study findings:

- (a) Earnings were sufficient to enable households, including those who only worked on the project for a short period, to 'invest' in resources that have a medium to long-term benefit.
- (b) The majority of households that invested in medium to long-term resources spent money to upgrade their plots or houses.
- (c) There was ample evidence that injection of earnings into the community by households created casual employment opportunities for other people in the community.
- (d) There was also ample evidence, particularly from the formal business sector, that the injection of cash into the community through the project assisted with business development, in some cases created additional jobs.
- (e) More households were able to pay school fees, and children attending school were better clothed and cared for. Patients in the HIV/AIDS home-based care programme were also better cared for because households had the cash to buy basic needs and more nutritious food. Community leaders reported that there was an all-round better atmosphere in the communities.

### **Macro-economic Impact Evaluation in Uganda**

In Uganda, a study was carried out in order to evaluate the potential of using employment-intensive technology in the rehabilitation of feeder roads as a means of generating employment and combating poverty. The study concentrated on the economic aspects rather than technical ones. The main conclusions indicated:

- (a) That a switch towards more labour-based methods could generate very significant benefits for the poor in the form of employment opportunities.
- (b) Labour-based methods were less costly than equipment-based method - in direct financial terms they cost 18% less for full rehabilitation of feeder roads and 50% less for spot rehabilitation.

- (c) In economic terms, labour-based methods were even more advantageous - 38% lower for full rehabilitation and 60% for spot rehabilitation.
- (d) A macro-economic model showed that the indirect effects were even greater than the direct effects. For each job directly created, another two jobs are generated elsewhere in the economy through a multiplier effect.
- (e) Labour-based methods were found to generate more income to households, increase gross domestic product (GDP) faster than equipment-based methods.

## Challenges

Challenges in impact monitoring and evaluation:

- (a) Curricula at universities and tertiary institutions do not include LBT as an infrastructure delivery option. Therefore practitioners are not aware of the option.
- (b) Lack of training on monitoring and evaluation techniques.
- (c) Baseline survey data may be unavailable or unreliable.
- (d) Even where baseline surveys are carried out, impact monitoring and evaluation is irregular, absent or inadequate.
- (f) Failure to take action on recommendations from impact assessments.
- (g) Failure to carry out effective maintenance - therefore impact and benefits are eroded.
- (h) Environmental impact assessments are not done nor given enough weight.
- (i) Other development activities have socio-economic impacts that are difficult to isolate.
- (j) Resources are not allocated to monitoring and impact assessment.

## Recommendations

- (a) Comprehensive terms of reference for impact monitoring and evaluation should be prepared and adequately catered for in the budgets of road investment projects.
- (b) Baseline surveys should be carried out before construction commences and regular monitoring and audit done.
- (c) Labour-based contractors and supervisors should be continuously trained and tender documents simplified.
- (d) Include LBT in curricula of universities and other relevant institutions.
- (e) Leaders and the communities should be sensitized.
- (f) Recommendations resulting from evaluations should be adopted and effective maintenance carried out on completion of the projects to preserve the asset and optimize the impact.

## Limitations of the Paper

The data presented was sourced from secondary sources and some of the studies were incomplete.

## Plenary Questions and Clarifications

- Q** *The results presented on impact are attributed to LBT. If the roads were improved using equipment-based technology (EBT), similar results would perhaps have been obtained. How can it be concluded that the LBT approach was the reason for the results obtained rather than the end result - the improved road?*
- A** It is true some of the results presented could be obtained using either LBT or EBT. But the study carried out in Uganda clearly demonstrated that LBT has certain advantages over EBT in certain circumstances. These advantages include:
- (i) LBT is cheaper than EBT if wage rates are < US\$4 per day per worker;
  - (ii) LBT generates more employment than EBT;
  - (iii) LBT results in savings of foreign exchange;
  - (iv) LBT can be used as a vehicle to build capacity of local contractors since EBT principally favours the established contractors who are in most cases foreign based.



**Q** *Once impact monitoring and evaluation has been carried out, what is the use of the data obtained?*

**A** The data obtained is of value in many ways that include:

- (i) Confirms whether the constructed facility has had an impact on the socio-economic status of the community;
- (ii) Confirms whether or not the facility was good value for the money spent;
- (iii) Lessons learnt can be used in future planning of projects;
- (iv) Data is of value to future investors of similar projects.

**Q** *Were the results on increased agricultural production-based on a baseline survey?*

**A** Yes, they were. The increased agricultural production reported for Kenya, were based on baseline surveys. A consultant was engaged to carry out baseline surveys on selected roads and later performed repeat surveys every six months to measure the progressive impact of the roads on the community. Finally surveys were carried out after the roads were completed and the roads were in use for a period of time.

### **4.2.3 Integrated Labour-based Methods in Environmental Management for Rural Access Roads Projects**

By Sylvester O. Kasuku, University of Nairobi, Kenya

#### **Introduction**

Before 1970s, governments in Sub-Saharan Africa, just like their counterparts in the rest of the world, raced with the building of access roads to open up the hinterland for among other activities agriculture, mining and administration. However, as more countries embraced industrialization principles, the number of competing resource uses increased hence, it became apparent that the environment was continuously being exploited in a manner that reduced its quality and did not secure the needs of future users.

Concerns for sustainable environmental management began in the USA in 1970s after it was realized that infrastructure and settlement developments among a host of other human productive activities like industrialization were being undertaken in an 'extractionist' manner. There were rising pollution levels, which later led to health problems, social exclusion, threat of extinction to rare species of animals and plants, poor environmental quality and general loss of bio-diversity. The situation is currently equally critical in the Third World countries where issues of poverty are contributing to greater environmental devastation.

With increased population and growing demand for land, it became necessary to embrace environmental management principles and the Kenyan Government took firm action with the enactment of the Environmental Management and Coordination Act of 1999. Under this Act, it is a mandatory requirement to undertake an Environmental Impact Assessment for all infrastructure development projects.

#### **Impact of Infrastructure Projects on the Environment**

Studies show that over 85% of travels in Kenya are undertaken in rural areas mostly involving productive activities like taking produce to the markets, factories and sourcing production inputs.

Access road construction leads to irreversible consumption of land, which is an obvious impact on the environment, most conspicuous in the case of large projects. In rural areas, new road construction disproportionately takes higher quality agricultural land since both tend to avoid the steeper slopes. Inevitably they also result in loss of cherished landscapes and variable habitats. Rural areas host relatively fragile ecosystems composed of diverse flora and fauna of which some are considered endangered species.

The linear nature of roads leads to separation or split of natural habitat thus reducing habitat size and reducing interaction of community. Transport infrastructure thus has a major impact on visual landscape. As linear features, roads can be discordant with the contours of rural landscapes. It is of interest to note that the 2005 Government of Kenya (GoK) environmental impact assessment study on the southern bypass road for Nairobi City showed negative impacts on the Nairobi National Park.

#### **Case Study of Central Kenya**

##### **Environmental Characteristics Along the Rural Access Roads Central Kenya**

The rural access roads in Nyandarua, Murang'a and Maragua districts are essential in the functioning of the national economy. The roads are key to facilitating access to agricultural inputs as well as delivering of agricultural harvests to factories and markets. The region of the three districts is a catchment zone for several large rivers including Tana River, River Maragua, River Malewa, River Ewaso Nyiro and a host of other minor water channels that drain in different water bodies in the country.



This area is characterized by run-offs from the mountainous regions causing damage to bridges while landslides frequently destroy sections of access roads. Poor drainage of soils in the flat areas causes rampant water logging. Drainage ditches are not clearly defined and have not been properly maintained, and as a result are blocked and covered with vegetation. Soil erosion is a serious problem due to steep slopes and depleted vegetation caused by over-cultivation. There is considerable pollution of rivers and other water sources by eroded soil materials and solid wastes emanating from settlements. The drier areas to the east of the districts are characterised by long dry spells, bare soils and poor vegetation growth. Increased motorized vehicle speeds and conflicts with wild animals reduces the level of road safety in the area. Encroachment of economic activities onto the road reserve at most trading centres as well as along many access roads in the three districts increases the cost of improving roads by between 10 % and 20%. Encroachment of vegetation poses a danger to the traffic as it increases the side friction and reduces the sight distances which affects safety. Such vegetation also blocks drains and leads to water-logging of access roads in the districts.

## Conclusions

Numerous opportunities for integrating labour-based methods into environmental management of rural access roads to mitigate environmental hazards resulting from road infrastructure exists such as:

- (i) Measures for erosion control including drainage cleaning.
- (ii) Planting vegetation on road sides to improve on aesthetics and environmental quality.
- (iii) Measures for rehabilitating excavated material sites, landscaping/reinstating and re-planting vegetation in gravel pits to reduce the visual intrusion caused by the excavation and clearing works during maintenance.

Using labour-based methods in environmental management provides opportunities for creating jobs as well as improving environmental quality.

## Plenary Questions and Clarifications

- Q** *How are integrated environmental impact studies carried out at the beginning of projects and how are employment issues integrated in the studies?*
- A** Economic components are included in the environmental impact assessments studies. These are done at the initial stages of the project.
- Q** *Is there a generalization of the relationship between HIV/AIDS prevalence and labour-based projects?*
- A** Research indicates that there is a relationship between labour-based projects and HIV/AIDS prevalence.



#### **4.2.4 Labour-based Approaches: Are These Good Vehicles Driven by Mechanics?**

**By Deborah Ongewe, Consultant, Kenya**

This paper was not presented. However, the full text of the paper is included in Volume II.

## 4.2.5 Discussion Points and Questions for Sub-theme 2

The following questions and discussion points were provided to the four groups for group discussions:

### Groups I and II

#### ***On Impact Monitoring***

- (a) How do you measure socio-economic impacts of labour-based technology within the local economy?
- (b) What leads to variations in impacts of labour-based technology for different projects under the same conditions?
- (c) What are the strengths and weaknesses of implementing the RAPI methodology?

### Groups III and IV

#### ***On Environmental Sustainability***

- (a) How can we mainstream environmental management in labour-based infrastructure development and maintenance?
- (b) What are the possible ways of measuring environmental impacts?

## 4.2.6 Plenary Discussion of Reports from Groups

Reports from group discussions on the discussion points and questions were presented for further discussion in the plenary. The outcome of the discussions is summarized as follows:

### **On Impact Monitoring and Evaluation**

- (i) *How do you measure socio-economic impacts of labour-based technology within the local economy?*

The participants discussed different ways of measuring socio-economic impacts of labour-based technology within the local economy and identified the following socio-economic indicators:

- (a) Employment created;
- (b) Average Daily Traffic (ADT) - ADT count provides a measure of the level of economic prosperity in an area;
- (c) Level of income;
- (d) Traveling time - time saved from reduced travel time as a result of improved access can be utilized in other economic activity;
- (e) Volume of sales in the local market;
- (f) School enrolment;
- (g) Visits to health facilities;
- (h) Gender involvement in development projects.

- (ii) *What leads to variations in impacts of labour-based technology for different projects under the same conditions?*

- (a) Variations in impacts of labour-based technology for different projects under same conditions are realized due to cultural differences of beneficiaries. Cultural differences influence people's perception of the project and therefore differences can arise on the impact of the project even if same conditions prevail.
- (b) Level and quality of participation - projects governed by principles of transparency, inclusiveness and responsiveness to the community needs and desires will ultimately have better impact than those that are not.
- (c) Differences in methodology and processes deployed in various projects may also bring variations on the impacts of the LBT. Some processes are more efficient than others and therefore will yield better results even if the conditions under which they operate under remain the same.

- 
- (d) The level of training and skills for those involved in the project. The availability of appropriate skills and experience will ultimately improve the delivery the rate and results, and therefore the impact of the project.

(iii) *What are the strengths and weaknesses of implementing the RAPI methodology?*

### **Strengths**

- (a) Poverty measurements are achieved through diverse indicators and are not limited to income.
- (b) RAPI methodology uses primary source of data from the communities as opposed to other methods that depend on secondary data, making it very sensitive to variations in poverty indices.

### **Weaknesses**

- (a) Contamination of control group is likely.
- (b) Variables are limited to socio-economic aspects only.
- (c) Costly compared to other methods of measuring poverty.
- (d) It is not politically correct to use the control group only as a source of information.

### **On Environmental Sustainability**

(i) *How can we mainstream environmental management in labour-based infrastructure development and maintenance?*

- (a) The creation of environmental awareness at all levels of stakeholders would assist in mainstreaming environmental management in labour-based infrastructure development and maintenance. This would enhance understanding of individual player's role and involvement on matters that pertain to environmental management.
- (b) Reviewing, formulating and adopting environmental legislation - obsolete laws guiding environmental management should be reviewed and more modern legislations put in place to facilitate managing the environment.
- (c) Application of environmental standards both at the design and implementation stages to ensure implementation of environmental standards at all levels of the project.
- (d) Joint planning with other infrastructure development stakeholders - involving other infrastructure development stakeholders on environmental matters will assist them appreciate the fundamental principles of environmental management and therefore make them incorporate the principles in their work.

(ii) *What are the possible ways of measuring environmental impacts?*

- (a) Identification of appropriate environmental indicators and mechanisms to measure them.
- (b) Carrying out baseline studies and repeat surveys to create easily accessible environmental data bank.



### 4.3 Sub-theme 3: Training, Research and Development

Training, research and development are essential for widespread application of labour-based approaches into infrastructure construction, delivery and service provision.

Three research papers were presented describing on-going research, studies and development of alternative standards and surfacing options for low-volume roads using labour-based approaches. The first paper described a regional research programme to develop appropriate, service oriented standards and user friendly quality control procedures for rural roads that favour local resource use. The research being carried out by Transport Research Laboratory (TRL) and ILO ASIST, seeks to help determine the performance trends (life-cycle) of roads in different environments. This will enable roads to be constructed to standards that ensure acceptable levels of traffic ability and passability for pedestrians and other modes of transport at an affordable cost.

The Roads Agency Limpopo (RAL) Gundu Lashu project, work with CSIR implementing the SADC guidelines for low volume sealed roads using labour-based methods was described in the second paper. The RAL required to explore alternatives to the recurring regraveling cycle on the unpaved provincial road network due to lack of good quality wearing course gravel, increasing traffic levels and high road user costs due to rapid deterioration. The paper describes the Agency's experience implementing the just launched SADC guidelines for low volume road sealing.

While a technique for labour-based macadam black top surfacing developed through research work by the University of Witwatersrand and Macadam Franchise Company was described in the third paper. Research work carried out in Soweto, South Africa has led to an improved slurry bound macadam (SBR) technique; and to the development of modified, improved and affordable equipment used to construct the SBM layer. The approach is labour-intensive with all activity carried out on site and requires at least three times more labour; and compares favourably in terms of cost and production rates with conventional surfacing techniques.

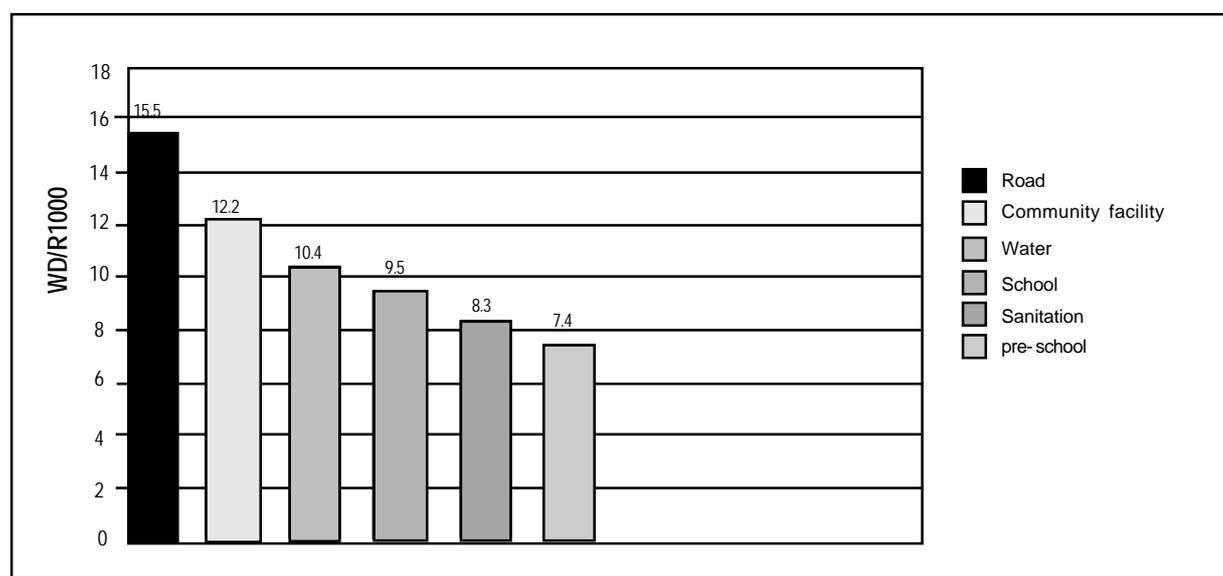
The Kisii Training Centre of the Kenya Institute of Highways and Building Technology, Ministry of Roads and Public Works, one of the pioneers of labour-based road works training, presented the training programme designed for the Kenya Roads 2000 Programme.

### 4.3.1 Fighting Poverty Through the Delivery of Essential and Quality Assets

By Dejene Sahle, International Labour Organisation/ASIST Africa, G. Morosiuk, Kenneth Mukura and Tony Greening Transport Research Laboratory (TRL). Presented by Kenneth Mukura.

#### Introduction

The labour-based approach has proven its effectiveness in the creation of employment and in producing cost-effective and quality infrastructure assets. The contribution of this approach to fighting unemployment and improving the livelihood of the poor is well documented. Of all the different types of infrastructure, the road sector has the highest potential for direct employment creation in the rural areas as shown in the figure below:



*Employment Creation Potential of Different Infrastructure Types*

However, the approach is yet to be widely accepted by both technocrats and policy makers, which has hindered its wide scale adoption. Considerable effort has been placed on raising awareness by decision makers of the benefits of using locally available human and material resources and of the resulting positive contributions towards growth of local economy. During the 6<sup>th</sup> Regional Seminar for Labour-based Practitioners held in Jinja, Uganda, 1997 practitioners identified the need to develop appropriate and service oriented standards and user friendly quality control procedures to enhance to wide spread adoption of the approach. Following this, a research programme to develop appropriate engineering standards and life-cycle costs for low-volume roads was developed and is jointly being implemented by ILO and TRL. Various development partners including Danish International Development Assistance (DANIDA), Development Corporation Ireland (DCI), Department for International Development (DFID) and Swedish International Development Agency (Sida), and governments including Ethiopia, Ghana, Lesotho, Mozambique, Uganda and Zimbabwe have funded and are involved in the research programme. The research seeks to obtain information on road deterioration, review standards and specifications based on research findings, develop quality assurance specifications and procedure guidelines and life-cycle costing methodology.

## Research Programme

The objective of the research project is to reduce the life time cost of unpaved roads by promoting appropriate engineering standards, planning tools and work procedures including using labour-based methods for maintenance and construction. One of the main tasks is to determine the rate of deterioration of gravel roads constructed by labour-based techniques to enable predictions to be made of their future performance. As it is too time-consuming and costly to consider all of the factors that affect the performance of such roads, five principal factors outlined below were selected for inclusion in the experimental design:

Factors	Aspects considered
Terrain+ Geometry	Topography of the terrain, ie lowland, hilly or mountainous
Climate	Rainfall
Material Properties	Mainly plasticity and grading of the sub-grade and wearing course
Construction Standards	Primarily level and type of compaction; drainage
Traffic	Low trafficked roads, ie ADT < 200 Vpd

The research has been completed in Ghana, Uganda and Zimbabwe and is on-going in Ethiopia, Lesotho and Mozambique. Monitoring and analysis of data is carried out over a three-year period. Monitoring involves:

- (I) Taking levels on cross-section profiles;
- (II) Measuring roughness with Merlin on wheel tracks;
- (III) Carrying out surface condition surveys (recording potholes, corrugations, etc);
- (IV) Testing materials;
- (V) Obtaining rainfall data from Meteorology Departments.

The analysis carried out involves:

- (i) Calculating of levels on the carriageway, i.e gravel loss and rate of gravel loss;
- (ii) Calculating International Roughness Index (IRI) (<8-good; 8-12-poor; >12-very poor);
- (iii) Establishing the influence of material properties, traffic etc on road deterioration.

The presentation provided a brief overview of the analysis and performance of the gravel loss, roughness, material specifications and the review of the specifications for each country based on the performance.

Life-cycle costs methodology used in the research includes construction, re-gravelling and routine maintenance costs, and these vary with material quality and traffic volume. Using the combined performance results from each country, a life-cycle costs methodology was developed based on agency costs, quality of wearing course materials and traffic. A spread sheet programme has been developed for computing life cycle costs using the regravelling cycle. The research has led to development of a relationship between life-cycle costs and traffic levels for different materials.



## Recommendations

The preliminary findings of the research led to recommendations that would consider surfacing/sealing of low volume roads as an option. The recommendations arrived at include:

- (a) Trial new specifications for grading and plasticity in wearing course materials selection.
- (b) Materials quality zones and life-cycle costing can be used as a wearing course design tool.
- (c) Life-cycle costs can be used to determine appropriate surfacing options.
- (d) Where subgrade meets wearing course design criteria use the subgrade as wearing course unless directed otherwise.
- (e) Grading frequency model can be used for planning and execution of performance-based maintenance.
- (f) Models can be used to prepare facts for negotiations with funding agencies, governments and other financiers.

## Conclusion

- (a) Appropriate standards, specifications and progressive road investment are key to sustainability of rural roads.
- (b) Sustainability of rural roads is key to investment and development of rural economies.
- (c) Rural economic development is key to poverty reduction.

The research is on-going and will be reported more fully in subsequent meetings and workshops.

## Plenary Questions and Clarifications

**Q** *Why use a calibration factor for HDM-4 predictions on roughness?*

**A** HDM 4 uses default values and the results should be correlated with values obtained from roughness measurements carried out on sites.

**Q** *Why not use level of maintenance as a parameter for assessment?*

**A** It is considered in the research but not presented due to time constraints.

**Q** *Why not determine life-cycle costs using HDM-4?*

**A** It is not possible currently hence the need for the research, and also HDM-4 is not readily available and needs expertise to run it properly.

**Q** *Why not use rapid roughness measurement methods such as bump integrator since Merlin is slow?*

**A** Sections under consideration for the research are short – 200 m per test section.

### 4.3.1 Implementation of the SADC Guideline for Low Volume Sealed Roads on Labour-based Projects in Limpopo Province, South Africa

By Jon Hongve, International Labour Organisation (ILO) and P. Paige Green, Centre for Scientific and Industrial Research (CSIR), South Africa  
Presented by R. C. Kuhn, CSIR

The Roads Agency Limpopo (RAL) with technical assistance from ILO has implemented a successful three-year pilot programme, Gundo Lashu, in labour-based road construction using emerging small-scale contractors. The programme was originally conceived as a re-gravelling programme, but it was soon realized that pursuing the re-gravelling strategy would not be sustainable for many reasons, viz:

- (i) Good quality wearing course gravel was largely unavailable;
- (ii) High traffic levels on most provincial roads, many carrying 200-500 vpd;
- (iii) Using the available gravel sources on these roads would result in rapid deterioration, unacceptably high road user costs due to corrugation, high maintenance costs and levels of dust pollution, rapid depletion of the remaining gravel sources and environmental degradation.

RAL therefore decided to look into alternatives to the recurring re-gravelling cycle on the unpaved provincial road network and in conjunction with the CSIR developed improved construction techniques that would enable the inexperienced labour-based contractors to produce high quality pavements for low volume roads with bituminous seals.

The continuation of the Gundo Lashu Programme under the umbrella of the National Expanded Public Works Programme (EPWP), which was launched in May 2004 and largely modelled on Gundo Lashu, coincided with the official launch of the Southern Africa Development Community (SADC) guideline for Low Volume Sealed Roads (LVSR). With guidelines available, the recommended philosophies and recommendations are being applied in the design of 15 labour-based projects for 2005/6.

#### Labour-based Versus Machine-based Methods Cost Comparison

A labour-based methods (LBM) versus machine-based methods (MBM) cost comparison study carried out using data from Gundo Lashu and other comparable projects demonstrated LBM are financially at par with MBMs of construction, even with the relatively high wage levels in South Africa compared with most other African countries.

	Units	LBM	MBM
Average cost per km with 14% VAT	ZAR/km	427,002	426,632
Average cost per kilometer without VAT	ZAR/km	374,563	374,239
Profit and overhead	%	12%	12%
Average cost per kilometer excl. profit/o/h	ZAR/km	329,616	329,330
Unskilled lab.	%	45%	12%
Skilled lab.	%	9%	10%
Plant	%	10%	29%
Fuels	%	7%	20%
Materials	%	29%	29%
TOTAL	%	100%	100%
Profit and overhead	ZAR/km	44,948	44,909
Unskilled lab.	ZAR/km	148,327	39,520
Skilled lab.	ZAR/km	29,665	39,520
Plant	ZAR/km	32,962	95,506
Fuels	ZAR/km	23,073	65,866
Materials	ZAR/km	95,589	95,506

## Design Approach

The SADC guideline document does not provide specific design options (eg catalogues). It provides a detailed section on the philosophies and decision processes necessary to achieve cost-effective and appropriate pavement designs without unnecessarily increasing the risk of failure of the pavement. An extensive list of references regarding specific design issues is provided in the document.

The general rule in the design of LVSR is not to relax more than one critical input parameter simultaneously. The road should be divided in sections that has more or less uniform features in terms of in-situ/ sub grade materials, traffic, climate and topography. The pavement life should be tailored to the various design inputs, primarily the traffic.

After field investigations and workshops to discuss the guidelines, changes to the designs were made based on the following considerations:

- (a) More attention given to the climate regime and drainage;
- (b) Pavement thickness is reduced where in-situ materials have adequate strength;
- (c) In-situ materials are treated where appropriate;
- (d) Adapting pavement structure to local conditions thereby avoiding fixed pavement structure for the entire road.

The design approach recommended to the consultants assigned to the individual projects was to try and implement the SADC guideline as far as possible in order to minimize the overall cost of the roads. The primary tenets to be followed were - to use local materials as far as possible, to design the pavement appropriately for the current and predicted traffic, making as much use as possible of the in-situ materials and 'pavement structure' and to make use of appropriate bituminous seals instead of the less sustainable gravel wearing courses.

## Design Philosophy

The objective of low volume sealed roads is not to increase the risk of failure. Good engineering judgment is necessary and the factors that could lead to premature failure need to be identified and managed during the design and construction process. Where a higher risk is likely, it is important that this is clearly defined, that the client understands this risk and agrees to carry at least part of the risk in return for economic benefits of the lower cost option.

Even if a premature localized failure caused by variability in the in-situ materials that was not picked up during the design, may occur, it will be more economical to the client to accept this 'risk' and carry out local repairs as and when needed rather than raising the design standards for the whole project.

## Cost Savings

The efforts undertaken to arrive at optimum designs for the new projects have shown that cost savings up to 20% can be achieved by following the design philosophy of the SADC guidelines compared to the common approach, i.e. using inappropriate specifications, one pavement design for the whole road without regard for local variations and the in-built strength of the existing "pavement" and relying on import of materials from borrow pits rather than optimizing the use of in situ materials.

On a typical 5 kms road contract costing around R600,000/km, these savings could amount to around R500,000. The additional investment of, say, R50,000 for additional materials testing and inputs by the design engineer would thus give a return in the order of 10 times the investment, not bad in anyone's view.



## Economic Analysis

The costs and benefits of each project were determined using SuperSurf (Sabita 2005). The results obtained for a road with relatively high traffic (about 400 vpd) are:

- (a) It is seen that without any social benefits, the internal rate of return (IRR) is about 19%;
- (b) Including various nominal social benefits equivalent to about R3,000 /km/year the IRR increases to nearly 27%.

## Construction

Where the local materials are of marginal quality, the first option is to look at improving them through mechanical or chemical stabilization, in order to minimize haulage costs. In addition, if the subgrades are poor, their quality needs to be raised to at least a CBR of 15 per cent (not necessarily a soaked CBR, depending on the topographic environment and climate). The thickness of the base course also needs to be controlled to ensure adequate protection of the subgrade, with a thicker layer where underlying materials are of inadequate strength and/or depth.

For construction of light pavements for sealed roads, and even for gravel wearing courses when the gravel conforms to wearing course specifications, construction techniques using a steel shutter system have been adopted. Where correctly used the system ensures:

- (a) Uniform thickness of the base layer which is critical for light pavements for LVSR;
- (b) A smooth vertical and horizontal alignment;
- (c) Correct camber or cross fall;
- (d) Good riding quality.

## Soil Stabilization Products

A number of short trial sections using various proprietary soil stabilizers were carried out:

- (a) RBI grade-81 is an inorganic, hydration activated powder-based stabilizer that reacts with soil particles through a complex inter-particle framework ;
- (b) Permazyme is a non-toxic formulation of enzyme-rich materials;
- (c) Ecobond is a polymer bituminous resin that considerably hardens a very wide range of soils and makes these water-resistant.



The table below shows the results from the experiment on the soil stabilization products:

Product and date of testing	Mean test result		
	Moisture content (%)	In situ density (kg/m <sup>3</sup> )	Approx in situ CBR ( from Dynamic cone Penetrometer DCP)
<b>RBI Grade-81</b>	5.2	1914	87
12/04/05	4.4	1855	93
29/04/05			110
17/05/05			95
01/06/05			247
14/06/05			
<b>Permazyme</b>	8.5	1955	-
12/04/05 (being constructed)	2.0		30
17/05/05			93
01/06/06			300
14/06/06			
<b>Ecobond</b>	13.9	1958	-
05/05/05 (being constructed)	3.0		62
17/05/05			
01/06/06			110
			296

## Sealing Options

Different sealing techniques were also tried and assessed as shown in the table below:

Seal type	Suitability for LBM (labour component)	Expected life (years)	Advantages	Disadvantages	Comments
Single chip	Marginal	4-6	Proven track record	Hot binder costly aggregate	Requires good design and construction quality
Sand	Very good	1 - 4	Local aggregate	Needs second seal within 8 months to one year	Insensitive to poor application
Slurry	Very good	2 - 4	Prepare on site	Grading critical Very thin	Needs very smooth base
Otta	Good	8 - 10	Local aggregate No prime required	Requires hot binder	Needs sand seal as well
Double Otta	Good	10 - 14	Local aggregate No prime required	Requires hot binder	Double mobilisation for second application
Gravseal*	Good	8 – 10 ?	Semi-priming, bitumen remains flexible due to polymer additives	Use proprietary bitumen products, Processed aggregate Hot binder	Commercial product
Cape Seal	Good	8 - 10	Smooth finish	Processed aggregate Hot binder	Construction not as critical as chip seal alone
Otta/gravseal using emulsion*	Very Good	8 – 10 ?	Cold binder	Processed aggregate	Specifications still to be established
Cold mix asphalt*	Very Good	10+ ?	Cold binder, self healing of minor cracks?	Use proprietary bitumen products, High cost	
Hot mix asphalt	Poor	15 - 20	Low maintenance	High cost	



## Conclusions

The Gundo Lashu Programme has provided very good opportunities to implement recent research and developments in the low volume sealed roads arena. The programme demonstrates that:

- (i) For a successful implementation of the SADC guidelines in project design, it is vital to have informed clients as well as designers;
- (ii) A modest increase in money spent on the design may give huge returns in terms of savings on construction costs;
- (iii) The implementation of the guidelines, probably requires more engineering judgement and understanding than required using a conventional catalogue-type pavement design.

A proactive approach by the client is needed to overcome the resistance from designers in the application of new philosophies that clash with accepted norms and standards and therefore are perceived as carrying a higher risk.

### 4.3.1 Labour-based Macadam Black Top Surfacing

By J. Hattingh, Macadam Franchise Company (Pty) Ltd and R.T. McCutcheon, University of the Witwatersrand, South Africa

Presented by J. Hattingh

#### Introduction

The construction industry is the third biggest employer in the Republic of South Africa and the roads sector has the highest potential for improvement with respect to job creation. Recent research into labour-based technology has proved that labour-based road surfacing can be done to similar standards and specifications as machine-intensive asphalt layers. Macadam technology has been identified as one of the most appropriate technologies to increase job creation and empowerment. The need for job creation through labour-based road construction projects led to the development of the composite and slurry-bound macadam construction techniques.

**Slurry-bound Macadam (SM):** Consists of coarse aggregates orientated by means of light pedestrian type rollers or plate compactors. A slurry, produced from sand and bitumen emulsion is forced into the voids between the coarse aggregate until the voids are filled using the same light pedestrian type rollers.

**Composite Macadam (CM):** Consist of a lower portion of dry or water-bound Macadam and a top portion of Slurry-bound Macadam.

#### Research Work

Research work has shown that surfacing can be done in applications from a thickness of 15 mm to 50 mm. The application of slurry-bound macadam has been improved with equipment that is light and easy to handle. Unlike concrete blocks or asphalts mixes, no outside batching plants are required which implies that all labour-based activities can take place on site. Macadam pavements consist of high quality layers constructed with single size 13 mm to 53 mm aggregate, which is stabilized by filling the voids with suitable fines. Costs and production rates compare favourably with conventional surfacing techniques.

Recent research work at the University of the Witwatersrand developed laboratory techniques to test the complete Slurry-bound Macadam layer in terms of Marshall criteria similar to hot-mix asphalts. The Marshall-test regime is accepted worldwide as the basic testing criteria for asphaltic materials. The preparation of Marshall-briquettes using the SBM-technique was one of the major breakthroughs during this research work.

#### Analysis of Labour-based Road Technologies

The most important criteria when analyzing a labour-intensive technology are costs, production time, quality, suitability, and the potential labour component. A five-point scale based on this criteria was developed to holistically analyze these technologies.

#### Equipment

The rollers are designed to have a low mechanization level, be human friendly, require low skill levels and have small building element dimensions. With appropriate management, high production rates can be achieved at attractive profit margins.

#### Conclusions

To-date over 400 km streets have been constructed using the new generation macadam types. Although the structural performance of these roads is very good, the riding quality caused some



problems due to minor surface irregularities caused by the manner in which the pedestrian drum and plate vibratory rollers were operated. The equipment has been continuously modified and improved, but has remained affordable, light and easy to handle.

The use of Slurry-bound macadam (SBM) surfacing techniques increases the labour-force at least threefold. No outside batching plants are required and all labour-based activities take place on site. Thus retained earnings by communities where the SBM – technique is used can be as high as 25% of the construction costs. The improved construction techniques and modified equipment result in a superior finish with excellent riding quality. Laboratory test methods in accordance with the Marshall method have been designed to enable engineers to design, specify and monitor quality in a scientific-manner.

### **Plenary Questions and Clarifications**

- Q** *Given lack of maintenance, are you considering using rapid measuring methods for monitoring performance?*
- A** Yes, rapid measuring methods are being seriously considered since this will greatly enhance the level of maintenance.

### 4.3.2 Roads 2000 Training Programme

By Kisii Training Centre, Kenya and Henry Orwa, KFW Roads 2000 Programme, Kenya

#### Introduction

Following the success of the Rural Access Road Programme (RARP) and the Minor Roads Programme (MRP) of the 1980s and 1990s, the Government of Kenya (GoK), through the Ministry of Roads and Public Works (MRPW), has adopted a new maintenance strategy, with a generic name Roads 2000. The immediate objective of the Roads 2000 strategy is to bring the road network back to an acceptable level of accessibility and maintainability, through the use of appropriate technology and locally available resources. It also aims at promoting the use of the private sector (particularly small-scale contractors and consultants) for road infrastructure works.

The Roads 2000 concept mainly focuses on the following areas:

- (i) Planning road work interventions based on an integrated road network approach rather than prioritized areas;
- (ii) Routine maintenance and spot improvement works;
- (iii) Use of local resources as much as possible;
- (iv) Use of employment-intensive methods of work where these are cost effective;
- (v) Partnership with the private sector.

The Roads 2000 strategy when initially piloted in the early nineties lacked ownership at the highest management levels and the pilot project was seen as a donor project. The strategy was neither coordinated nor considered as the standard approach to road maintenance. The strategy has now finally been re-discovered as a vehicle to provide effective maintenance of the classified road network on a national basis following reforms in the public sector; and for its contribution to the governments poverty reduction strategy. The strategy is now fully adopted and the government has entered into agreements with a number of support agencies to assist in the implementation of the programme. These agencies include:

- (i) German Funding Agency (KfW ) for support to Rift Valley Central region;
- (ii) African Development Bank (ADB) for support to Rift Valley Northern and Southern region;
- (iii) Swedish International Development Agency (Sida) for support to Nyanza region.

The Roads 2000 programme intervention in all these regions have already started.

#### Coordination

Roads 2000 is coordinated at three levels through:

- (a) R2000 National Steering Committee at the highest policy level;
- (b) R2000 National Coordinating Committee consisting of all road agencies and stakeholders;
- (c) National working group which deals with technical issues.

#### Training for the Roads 2000 Strategy Implementation

The Roads 2000 Programme management identified training as a key component to develop the management and implementation capacity of all stakeholders ranging from road agency personnel to private sector practitioners and from road agency headquarters to the district level for the success of the programme. A comprehensive training needs assessment was carried out and a comprehensive and structured training programme developed. The Kenya Institute of Building and Highway Technology's (KIBHT) and Kisii Training Centre (KTC) has been charged with the responsibility of coordinating the training. This means that besides delivering training courses, KTC will manage the implementation of the entire Road 2000 training package.

## **Training Needs Assessment**

A detailed Training Needs Assessment (TNA) was carried out to assess the training gaps and the needs of the implementing agencies including the entrepreneurs (small-scale contractors) and other stakeholders. This involved:

- (a) Identification of implementation arrangements;
- (b) Identification of required training prerequisites;
- (c) Review of the training providers/regulatory framework;
- (d) Review of existing training and reference materials.

Some of the outcomes of the training needs assessment were as follows:

- (a) There are highly trained engineers at the headquarters but not at district level;
- (b) The network approach and labour-based approaches in road maintenance are not fully appreciated by all stakeholders;
- (c) There was no formal training available on contract/business management;
- (d) Labour-based contracting is not highly appreciated at the district level.

## **General Training Plan**

From the training needs assessment carried out, a comprehensive and appropriate training plan to meet the identified needs has been developed (referred to as the General Training Plan). The plan provides for standardized training approach for all projects contributing to Roads 2000. The training is managed and coordinated by KTC. The plan comprises modules for the programme managers, contract managers/supervisors and contractors.

In addition, to further ensure uniform implementation of the Roads 2000 Programme at national level, the following manuals and guidelines have been prepared.

### **(I) Roads 2000 Operations Manual**

This sets out road maintenance strategy and policies on technical and operational matters. It describes the technical procedure to be used in Roads 2000 Programme. Additionally, it gives guidance on work planning, organization and control of road maintenance and improvement works.

### **(II) Appropriate Bidding/Contract Document**

These documents integrate poverty alleviation measures and encourage increased access to work by small-scale contractors. They also encourage bidders to facilitate employment for socially disadvantaged members of the society. The document encourages use of labour-based methods whenever cost effective.

The document is in two volumes:

- (a) Level 1 - for routine maintenance works;
- (b) Level 2 - for spot improvements/rehabilitation works.

### **(III) Contract Management Manual**

These provide procedural and managerial guidelines for all parties to the contract. The document is in two volumes:

- (a) Volume 1 - for routine maintenance works;
- (b) Volume 2 - for spot improvement/partial rehabilitation.

## **Monitoring and Evaluation**

The monitoring and evaluation of the training is performed by KTC.



## Plenary Questions and Clarifications

**Q** *On institutional development, is Kenya moving towards the formation of a road agency?*

**A** Yes, the government is moving towards setting out an autonomous road authority.

**Q** *Do you follow up and assess the impact of the training offered to your students after the graduation?*

**A** Yes, follow-ups on the performance of students are always done, for example through national forums.

### 4.3.3 Discussion Points and Questions for Sub-theme 3

The following discussion points and questions were provided for group discussions.

#### Groups I and II

##### **On Training**

- (i) Identify the various stakeholders who should be trained in the labour-based approaches.
- (ii) How can we mainstream training for labour-based methodologies in all sectors?
- (iii) Who should pay for labour-based training and how can it be sustained?

#### Groups III and IV

##### **On Research and Development**

- (i) Who decides what research is to be carried out?
- (ii) Who should undertake research and development of labour-based approaches?
- (iii) Who should finance research and development work/projects?
- (iv) How can we promote the application of research findings in labour-based approaches?

### 4.3.4 Plenary Discussion of Report from Groups

During plenary discussions, groups presented their recommendations regarding the discussion points and questions for further discussion. The outcome of the discussion for sub-theme 3 is summarized as follows:

##### **On Training**

(i) *Identify the various stakeholders who should be trained in the labour-based approaches?*

- (a) Officers from road authorities;
- (b) Policy makers;
- (c) Contractors;
- (d) Local authorities;
- (e) Communities.

(ii) *How can we mainstream training for labour-based methodologies in all sectors?*

- (a) By introducing labour-based curriculum into tertiary institutions.
- (b) Through the enactment of legislation which is pro-labour-based.
- (c) By officially recognizing and accrediting LBT training institutions and courses offered as a motivation to the trainers and trainees.

##### **On Research and Development**

(i) *Who decides what research is to be carried out?*

- (a) Governments should initiate research in consultation with technical experts and other stakeholders.
- (b) Academic and research institutions should also initiate research to be undertaken i.e universities and other research bodies.

(ii) *Who should undertake research and development in labour based approaches?*

The following were identified as being capable of undertaking research and development:

- (a) Road authorities.
- (b) University institutions.
- (c) Specialized research institutions eg Centre for Scientific and Industrial Research (CSIR) Transport Research Laboratory (TRL).



(d) Private researchers.

(iii) *Who should finance research and development work/projects?*

- (a) Central government through the road authorities;
- (b) The industry that benefits from the research findings;
- (c) Development partners;
- (d) Other funding agencies.

(iv) *How can we promote the application of research findings in labour-based approaches?*

The promotion of the application of research findings in labour-based approaches can be done through:

- (a) Seminars, workshops and conferences;
- (b) Training programmes at all levels;
- (c) Continuous Professional Development (CDP).

The participants also noted that the creation of political goodwill is key in the promotion of the application of research findings in labour-based approaches.



#### **4.4 Sub-theme 4: Policy and Upscaling; Sustainable Financing and Resource Allocation**

Labour-based approaches have successfully been applied at projects and programme levels for several years and their benefits are well proven but are yet to be upscaled and mainstreamed into national policy and implementation strategies. Many labour-based programmes are donor funded and often fizzle out once the donor funds cease.

Four papers were presented in plenary under this sub-theme. Two papers addressed what is required to move beyond piloting, policy statements, and technical documentation of the best practice, to sustainable implementation. While two other papers dealt with special circumstances, one on land acquisition for infrastructure projects and the issue of compensation in Nepal and the other on a programme for reconstruction and economic recovery in Somalia following many years of crisis.

## 4.4.1 Local Resource Use in Infrastructure – From Policy to Large-scale Action

By Jan de Veen, International Labour Organisation (ILO)

Presented by Terje Tessem, ILO, Employment-Intensive Investment Branch (EMP/INVEST), Geneva, Switzerland

### Introduction

Economic growth and distribution of wealth rely on the level of access by the poor to economic and social services and opportunities, including employment among others. Continuous efforts must therefore be made to improve the level of access to a range of services and facilities, while epitomizing local participation and local resource use.

Expenditure on infrastructure continues to be a very large and an increasing item in most developing country budgets as a functional infrastructure is crucial to economic activity. The infrastructure delivery process presents massive opportunity to create productive employment, improve services, and create of assets for production and improved standards of living. Using participatory, local resource-based approaches in the delivery of infrastructure works could easily triple the impact of the investment on poverty elimination and job creation. For example, the Transport Sector Programme in Madagascar, has re-oriented some US\$ 50 million to local resource use in the context of its rural roads component. This programme component will generate annually between 110 and 150 contracts of around US\$100.000 each for small and medium-sized local enterprises using locally available human and material resources.

### Employment Policy Objectives in Africa

African leaders, their governments and their development partners have all increasingly realized that reducing poverty relies to a great extent on creating employment opportunities, reducing the growing inequalities and social exclusion. These are now central to poverty reduction strategies and development frameworks and programmes such as the Millennium Development Goals (MDGs) and Highly Indebted Poor Countries (HIPC). African Union African Heads of State reiterated and committed to placing employment creation at the centre of their economic and social policies and identified infrastructure and public works as priority sector through which this could be achieved during the Extraordinary Summit on Poverty and Employment in Ouagadougou, Burkina Faso in September 2004.

### Local Resource use in Public Works

Local resource use and participation in public works is too often only regarded as a short term response to crisis situations, yet excellent proven opportunities for employment-intensive participative infrastructure works and services exist including in natural resource rehabilitation and maintenance, watershed protection, soil conservation, drainage and irrigation, water collection and storage, public and community facilities, reforestation and tree plantation, sanitation, solid waste management, road and street works etc. Such works, when programmed to be executed through the cost effective use of locally available resources, create business opportunities for small and medium-sized enterprises, while enhancing rural development through participation and increased local employment.

Public works programmes can therefore become an instrument for making poverty reduction strategies operational with a significant and sustainable impact on people's lives. To achieve this, poverty reduction strategies need to be harmonized with infrastructure development strategies. This can be achieved in two ways:

- (i) For specific situations (emergencies, vulnerable groups):
  - (a) For temporary cash-for-work programmes;
  - (b) For social redistributive programmes eg social safety nets;

- 
- (ii) By mainstreaming policy for:
    - (a) Structural poverty reduction through systematic use of local resources, where cost effective;
    - (b) Investment for and with the poor, not compensation;
    - (c) Integration (enabling environment – enterprise – community participation).

### **Structural and Large-scale Impact of Local Resource Use**

For many years, practitioners have worked at various levels and in many countries to introduce the cost-effective use of local resource-based approaches to infrastructure development and maintenance. Yet the approaches are not widely adopted and mainstreamed for large scale impact. The challenges for upscaling and sustainability remains in developing mutually reinforcing policies; which in turn can be translated into strategies, directives and long-term programmes financed from regular sources. This requires the development of joint stakeholder vision and policies that take into consideration:

- (a) Macroeconomic measures (eg local resource use, employment, taxation and other fiscal policies);
- (b) Cross-sector aspects (eg private sector development, procurement, decentralization, capacity building);
- (c) Sector-specific (eg transport, irrigation, reforestation, housing, water supply).

Translating poverty reduction objectives and policies into workable strategies requires:

- (a) Sector analysis of where the biggest potential for local participation and local resource use lies.
- (b) Analysis of investment decisions and technological choices and consideration of issues concerning employment creation potential, skills development, participation and decent work.
- (c) Consideration of feasibility of redirection of regular and investment funding in infrastructure towards local resource use.
- (d) Examination of what measures are needed to ensure cost effectiveness, mainstreaming and sustainability.

To achieve wide-scale sustained impact, a number of areas require attention including:

- (i) Assessment and monitoring of the impact of national policies on poverty reduction and taxation.
- (ii) The creation of awareness and demand from beneficiaries through advocacy and public information.
- (iii) The establishment of functional (decentralized) environments at local level.
- (iv) The development of pro-poor procurement systems including:
  - (a) Developing enabling procedures, ie appropriate specifications, contract award and payment systems, labour and management systems;
  - (b) Developing contracting systems that enable participation of communities and micro-enterprises;
  - (c) Ensuring involvement of relevant local stakeholders;
  - (d) Putting in place support measures such as business development, credit, capacity building.
- (v) Provision of guidance and capacity building for:
  - (a) Planners and implementers;
  - (b) Communities;
  - (c) Provincial and local governments.
- (vi) Provision of employment information and support services that enables assessment 'market potential' of implementers.



## Programme Sustainability and Large-scale Impact

Ensuring policy coherence, stable flow of funding, institutional support, relevant skills development and coordinated, broad application in as many sectors as possible are key for large-scale impact and sustainability. In addition to this, mainstreaming gender and environmental consideration, and ensuring core labour standards and decent working conditions are also important.

In order to ensure that local resource-based approaches are considered as a serious option at the very early stages of policy-making and programme design, Employment and Investment Policy Units can play a crucial role. The ILO has promoted the establishment of such units in different countries (Madagascar, Namibia, Uganda and Ghana). These should ideally be part of the government department with overall responsibility for the public investment programme and be in a position to coordinate and integrate employment-friendly approaches to infrastructure development and maintenance into the national planning process.

### From Policy to Practice Some Options

- (i) Targeted procurement in the public sector i.e provision of goods and services to public sector can constitute a suitable vehicle for accelerating employment creation if targeted at socio-economic policy goals in addition to primary objectives. Targeted procurement can entail various policy directives such as:
  - (a) Classification and unbundling of contracts (packaging tenders into smaller contracts);
  - (b) Increasing the labour content of contracts where practicable;
  - (c) Enhancing the accessibility of contracts to small and medium-sized enterprises.
- (ii) Price incentives for contractors - the private sector can assist substantially to increase the labour absorption capacity of the economy if such initiatives can be shown to represent sound business opportunities. To stimulate this, governments can undertake various measures (eg price incentives for contractors who can demonstrate local participation, and the development and utilization of local resources in their bidding descriptions, or cater for the costs of training and decent work related initiatives.
- (iii) Community participation and contracting – community based initiatives can also make a valuable contribution to rural economies in terms of employment and infrastructure. Such initiatives can be both internally and externally funded, and can be planned, managed and executed by communities themselves.

## 4.4.2 Roads 2000 Road Maintenance Strategy in Kenya: A Case For Sustainable Financing and Resource Allocation

By Eric Goss, Danish International Development Assistance (DANIDA) Technical Adviser, Roads 2000 and Frank D. Karanja, Ministry of Roads and Public Works, Kenya

### Overview of Labour-based Programmes in Kenya

Kenya was one of the pioneers in labour-based technology and implemented the Rural Access Roads (RAR) Programme in the 1970's and 1980's, which improved 8,000 kms of access roads. There was also the Minor Roads Programme in the 1980's, which improved 4,000 km and maintained 12,000 km. These programmes not only created quality roads but also employment for many Kenyans. The MRP programme also developed systems (though not institutionalized) and a training programme resulting in a substantial crop of trained personnel. Both programmes were donor funded and came to a halt with the end of these funds, despite the existence of trained staff and fuel levy funds, which were channelled into improvement works by machine-based contractors.

### Roads 2000

In the early nineties and before the end of the Minor Roads Programme (MRP), the Government of Kenya (GoK) started developing a new labour-based strategy for rural roads maintenance termed Roads 2000 Roads Maintenance Strategy. This was built on the strengths of the MRP but also took cognizance of some of its weaknesses.

Some of the components of the Roads 2000 strategy in relation to sustainability were:

- (a) Using a combination of equipment (intermediate technology) and labour-based solutions;
- (b) Integrating the implementation structure within Roads Department and not creating a separate labour-based organization within the Roads Department.
- (c) Instituting a sliding scale for government contribution with government slowly taking over the financing from the development partners.
- (d) Instituting a 4% training levy to ensure capacities and skills are built.
- (e) Lowering cost of the interventions through a network approach with partial rehabilitation (road formation) and spot improvements (gravelling and drainage improvement) instead of full-scale rehabilitation of a few links.
- (f) Continuing the use of force account.

Three Roads 2000 Programmes were implemented from the late 1990's up to 2005. These programmes were supported by development partners Swedish International Development Agency (Sida), European Commission (EC), Danish International Development Assistance (DANIDA) and incorporated training of labour-based road maintenance and improvement contractors.

## Review of Programmes

	Description	Positive features	Negative features
1	R2000 Pilot Project: 92-94 Force Account Partial Rehabilitation, maintenance, spot Improvement	<ul style="list-style-type: none"> <li>+ New strategy proved</li> <li>+ Employment created</li> <li>+ Roads for access</li> <li>+ Network approach</li> <li>+ Integrated in ministry structure</li> <li>+ 4% training levy</li> <li>+ Sliding scale – increasing Government of Kenya (GoK) funding.</li> </ul>	<ul style="list-style-type: none"> <li>- Project</li> <li>- Donor funded</li> <li>- Heavy towed grader</li> <li>- Roads 2000 manual not completed</li> <li>- Strategy did not take off</li> </ul>
2	R2000 Nyeri /Kirinyaga projects (Central province) 1997-2004 Both force account and contractors used Sida funded	<ul style="list-style-type: none"> <li>+ Employment</li> <li>+ Improved Network 60%</li> <li>+ Integrated in District Ministry structure</li> <li>+ No parallel systems</li> <li>+ Training, Capacity</li> <li>+ Increasing GoK funding – RMLF</li> <li>+ Soil conservation</li> <li>+ Trained 23 maintenance labour-based (MLB) contractors</li> </ul>	<ul style="list-style-type: none"> <li>- Donor Project.</li> <li>- Delay in funds</li> <li>- Trained contractors not utilised</li> <li>- No routine maintenance contractors</li> <li>- Impact not documented</li> <li>- No national system</li> </ul>
3	R2000 Coast Province Project 1999-2003 Both force account and contractors used Danida funded	<ul style="list-style-type: none"> <li>+ Employment.</li> <li>+ Improved network by 60%</li> <li>+ Integrated into district ministry structure</li> <li>+ No parallel system</li> <li>+ Training resulting in capacity development</li> <li>+ Increasing government funding – RMLF</li> <li>+ Trained 110 RM SSC contractors routine maintenance small-scale contractors</li> </ul>	<ul style="list-style-type: none"> <li>- Donor Project</li> <li>- Delay in funds</li> <li>- No improvement contractors</li> <li>- National systems - project systems developed</li> </ul>
4	R2000 Eastern Province Project 1997-2004 Improved links instead of network, mainly with machine based contractors EC funded	<ul style="list-style-type: none"> <li>+ High quality roads</li> <li>+ Value for money contracts</li> <li>+ Materials testing</li> <li>+ LB improvement contractors used for last contracts</li> </ul>	<ul style="list-style-type: none"> <li>- R2000</li> <li>- Donor Project</li> <li>- Delay in payments</li> <li>- Slow implementation</li> <li>- Little network improvement</li> <li>- Not district based</li> <li>- No training</li> <li>- No capacity built</li> <li>- No national systems</li> </ul>

## Analysis of Sustainability

Both Central and Coast provinces' projects were successful. Capacities were built and they were fully integrated. They were prepared with a sliding scale in which the government's contribution to the funds for the projects increased in each successive year, while that of the development partner decreased. This ensured that the end of the development partners' contribution did not result in a sudden demand for an increase in the government contribution. The annual funding for road works in the four Coast districts was only reduced by 20 to 30% when the DANIDA funding ended. The Eastern Province programme was not sustainable and capacity was not built.

Although the financial sustainability for road maintenance and spot improvements was ensured through the collection of fuel levy following the 1993 legislation, these funds were not channelled to maintenance due to political pressure to direct funding elsewhere.

## Lessons Learned

The lessons learnt from the initial Roads 2000 programmes included:

- (i) The need to institutionalize the implementation of Roads 2000 projects into government, ie the Ministry and the Kenya Roads Board (KRB) and Road Agencies through development of coordination committees and a strategic plan for national implementation.
- (ii) The need to implement a strategy nationally with or without donor support (using fuel levy);
- (iii) The need for a common national training syllabus.
- (iv) The need for national planning, implementation (contracting) and reporting systems.
- (v) The need for maintenance driven systems.
- (vi) The need to fully involve the local communities in identification and monitoring of road works.
- (vii) The need to sensitize road users and opinion leaders on maintenance culture.
- (viii) Donor support to be seen as added advantage but not a necessity.

## Progress of the Roads 2000

Building on the lessons learned from the earlier programmes, the government has now developed a strategic plan and coordination process for Roads 2000. National systems for operations, training, planning, contracting and reporting have been developed for use by all and documentation is available. These common systems incorporate the following principles:

- (i) Network planning that includes routine maintenance, spot improvements and partial rehabilitation.
- (ii) Training of routine and spot improvement contractors.
- (iii) Training of the ministry supervisors in contract supervision and management.
- (iv) Provision of adequate supervision, vehicles and office equipment.
- (v) Consideration of environment and other cross-cutting issues.
- (vi) Use of community participation in projects identification and prioritisation.
- (vii) The use of government procurement and financial procedures.
- (viii) The use of technical assistance only for training and essential technical support but ensuring the district and provincial road engineers are fully in control of works.
- (ix) The use of development partner financing to transform the poor network to maintainable condition through partial rehabilitation and spot improvements and government funds for all maintenance activities.

The Roads 2000 programmes are still mainly being implemented in districts with donor support. Currently, donors are supporting the implementation in 43 of 71 districts. Government input into the programme is mainly to support implementation of donor programmes leaving few resources



to develop sustainable labour-based implementation without donor support. Furthermore, most capacity building and training is donor funded with limited funding from the government. Although the Roads 2000 strategy is captured in policy documents, it is still perceived as a donor driven initiative to some extent and the capacity to implement self sustaining labour-based road programmes remains to be seen. There is still need for further sensitization at political and public road user level.

### **4.4.3 Land and Property Acquisition and Compensation in Road Projects - Assessment from Pro-poor Perspectives of Policies and Practices on Land and Property Acquisition and Compensation by Road Programmes in Nepal**

**By Shuva K Sharma, Scott Wilson and Laxmi. Subedi, Roughton International, Nepal  
Presented by Laxmi Subedi**

#### **Introduction**

Over the past 15 years alone, Nepal has increased the size of its road network from 10,000 km to 25,000 km, an increase of nearly 250%. Most of the roads constructed are rural roads where demand for road access is high. The construction of rural roads results in loss of land, property and livelihoods of families living the along the road's length. The Government of Nepal pays compensation for land for some strategic roads, especially those funded by multilateral donors, but there is no formal and complete land and property compensation practice in rural roads which comprise about 10,000 km to date. The owners of land who are typically poor, whose land and property is taken away, consumed or destroyed by these massive lengths of roads passing through the poor rural regions of the country are not paid and are often coerced to 'donate' their land and property 'for the sake of the community' so that the road can be built to 'benefit all members of the community'. These rural areas are characterized by low agricultural productivity, low levels of literacy, strong social and gender hierarchy based on castes and economic status, gender based discrimination and very few economic opportunities.

#### **Integrating Pro-poor Elements in Road Project Design**

To ensure that roads benefit the rural poor, the following considerations need to be integrated into the road programme:

- (i) Labour-based construction approach – labour-based technology is poor friendly in that it allows the poor to participate in the road construction. On the other hand, the impact of machine-based road construction is very small on poverty alleviation both at the construction stage as well as post construction stage.
- (ii) Transport plus' activities - while road construction gives good opportunity to inject cash into a rural poor economy through employment, other non-transport programmes such as literacy programmes, skill enhancing training, women groups activities etc provide opportunities for the disadvantaged communities and women to get together to initiate income generating activities.
- (iii) Compensating the poor for the land and property lost – cash compensation and support to help initiate income generation activities.

#### **Compensation Policy Considerations**

The following considerations should be built into compensation policy:

- (i) No individuals and families should be worse off due to implementation of road programmes.
- (ii) All the affected persons should be consulted honestly and fairly.
- (iii) The compensation should be at fair and full market price.
- (iv) All the loss due to the project is eligible for compensation.

Compensation for land and property loss has several dimensions at actual implementation level, which give rise to complex financial and economic debits on the viability of the projects. A number of key issues and questions need to be discussed to determine the most appropriate ways for policy implementation. These include:

- (i) Budget is limited: Should the road be built or not?

- 
- (ii) Knowing when it is voluntary or involuntary contribution.
  - (iii) No road case - is this a threat or a realistic message.
  - (iv) Compensation payment - issues around the timing and the bureaucratic procedures.
  - (v) Bargaining with the poor - corruption discredits good cause.

## Conclusions

Payments of land and property compensation is relatively new and therefore receives resistance. To facilitate acceptance, the following key issues need to be addressed:

- (i) The impact of land acquisition for road construction and its impact on the poor needs to be better understood to derive more examples and cases in support of the compensation policy.
- (ii) There is lack of awareness among the poorer and the disadvantaged communities on their rights regarding their properties resulting in coercion. This can be addressed through greater awareness of citizen's rights to protect their property.
- (iii) The cost of compensation should be treated as an integral part of road development project and not as a luxury with the option to do it or not.
- (iv) Government should have transparent mechanism to establish rates for compensation. Too low rates hurt the poor while inflated high rates encourage the corrupt practice that again hurts the poor.
- (v) Land and compensation policy should encourage voluntary free donation by the rich to reduce cost but this needs to be done in a very transparent and effectively monitored process that ensures that the poor are not forced into voluntary donation.
- (vi) The compensation policy must include social development and livelihood enhancement programmes as road impacts will be enhanced when the beneficiaries are equipped with additional skills to benefit from increased opportunities.
- (vii) The labour-based projects need to include provisions for fair compensation of land and property.

## Questions and Answers from Plenary

**Q** *Is the title of your paper exhaustively covered in the presentation?*

**A** Yes, the paper covers issues relating to acquisition of and compensation for property and livelihoods from a pro-poor perspective. It covers the experiences and lessons learnt in Nepal.

**Q** *Who should evaluate the cost of compensation?*

**A** In most of countries there is Land Acquisition Act which provides for land compensation determination committees. These committees determine the compensation for those who loose their property as a result of a project development. The Act also invests powers on people/ individuals who may want to appeal in case of a disagreement with the rates.

**Q** *What is a fair market price?*

**A** A fair market price is the market rate of a property that is mutually acceptable to both of the parties of the bargain.

#### **4.4.4 Designing an Upscaled Programme and Process for Enterprise, Employment and Livelihoods in Post-war Somalia**

By Joseph Connolly, Gerry McCarthy, Michiel Ter Ellen, International Labour Organisation, Somalia Programme. Presented by Gerry McCarthy

##### **Introduction**

The presentation described a programme designed by ILO, UN Food and Agriculture Organisation (FAO), World Bank, European Commission (EC) and other development partners to assist Somalia in its recovery from more than a decade of conflict.

##### **Rationale**

Lasting peace depends on a wide range of measures. Critical among them is access to decent work and livelihood. This helps to re-orient people's minds from conflict and destructive activities. It improves their material welfare, improves their capacity to access basic services (water, education, health and shelter), and reduces poverty and social exclusion. Productive activities provide human security, a channel of social healing and a means of reducing the plight of the diverse conflict affected vulnerable groups (like jobless youth, demobilized combatants, disabled people, refugees, returnees, the internally displaced and the female headed and dependent households whose numbers soar during conflicts). Building on past ILO interventions, private sector studies and socio-economic mapping exercises the programme seeks to provide:

- (i) A practical response to the threat to maintaining and establishing peace.
- (ii) Alternative economic opportunities to reduce chronic single commodity (cattle) vulnerability.
- (iii) A comprehensive interim employment creation and local economy revitalization.
- (iv) A focused economic recovery response, coordination and process building.

##### **Problem Analysis**

The large-scale employment for peace programmes responds to the prevailing infrastructure, employment and livelihoods crisis due to:

- (i) Limited resources, institutional and human resource capacities to rehabilitate critical infrastructure.
- (ii) Weak enabling environment at macro and grass-roots levels for promoting investment and encouraging entrepreneurship.
- (iii) Limited private sector capacities to diversify the economy to reduce chronic over-dependence on livestock that limits availability of new jobs and livelihood opportunities (the effect of which is widespread chronic poverty and idleness).

##### **Programme Design Issues**

The programme consists of key parallel and linked components that simultaneously kick-start employment creation while laying solid foundations for the creation of longer term job and livelihood opportunities in a diversified economy. The programme's design considerations include:

- (i) Private sector-led diversification of the economy, which is crucial to the creation of large numbers of new sustainable jobs and livelihoods but is a long-term vision at this point. An appropriate response is needed to fill the employment gap and inject cash into fragile/ depressed local economies whilst rehabilitating critical infrastructure.
- (ii) Series of appropriately packaged simultaneous parallel and interlinked responses are needed at macro, institutional and enterprise levels.
- (iii) Top-down approaches are neither realistic nor practical given the fledgling status of institutions and limited human resource capacities and means.
- (iv) Responses that address widespread poverty and idleness and the needs of special target groups including large numbers of women-headed and dependant households.

- (v) Processes of operationalizing the programme and its transfer to local ownership;
- (vi) Transparency crucial to confidence and peace building;
- (vii) Flexibility to upscale in response to various scenarios and to link with the UN Joint Needs Assessment (JNA).

To address the above the programme comprises three interlinked programmes:

- (i) **Employment Intensive Infrastructure Projects (EIIP):** to create jobs, revitalize local economies and rehabilitate critical infrastructure;
- (ii) **Enabling environment:** with macro-economic and local-economic development sub-components;
- (iii) **Enterprise and livelihoods:** with sub-components for financial services development, and technical assistance for private enterprise development, micro-enterprise development, and productive livelihoods development.

## Programme Objectives

- (i) **Overall goal** – To contribute to the alleviation of poverty and to the promotion of a more peaceful, equitable and democratic society in Somalia.
- (ii) **Overall objective for all three programmes** - To contribute to sustainable economic growth and diversification in Somalia leading to the creation of new sustainable job and livelihood opportunities.
- (iii) **Purpose**
  - (a) EIIP programme: Opportunities created to inject cash into local economies through locally-managed labour-intensive works targeting improved infrastructure and services delivery.
  - (b) Enabling environment programme: Enabling environment for promoting investment and encouraging entrepreneurship enhanced.
  - (c) Enterprise and livelihoods programme: Enterprise and production growth and diversification kick-started and accelerated.

## Implementation Responsibilities

In absence of local capacities, programme component management will be by relevant UN Technical Agencies to develop and harmonize standards and approaches, to provide technical backstopping and quality and monitoring assurance, and to strengthen local institutional capacities and processes for gradual transfer of ownership. Sample possibilities according to technical strengths are as follows:

- (i) Enabling environment programme.
  - (a) Macro Environment Component: United Nations Development Programme (UNDP);
  - (b) Local Economic Development Capacities Component: ILO.
- (ii) EIIP programme: ILO and UN-HABITAT.
- (iii) Enterprise and livelihoods programme.
  - (a) Financial services development component: UNDP.
  - (b) Micro, small and medium enterprise (MSME) development component: ILO.
  - (c) Agri-productive livelihoods components: FAO (Livestock and animal products, fishing, farming, beekeeping, gums, resins and natural products).

## Implementation Practicalities and Strategy

The complexities of the post conflict situation and reconciliation processes will require an institutional framework which recognizes the fragility of the peace process as well as the embryonic nature, capacity and influence of the new Somalia.

In the absence of strong central institutional capacity, an area development approach is proposed



to be adopted. This will focus on developing the capacity of community-based decision making systems so as to develop capacity to manage local development and create a true sense of ownership. This may be a Village Development Committee (VDC), Irrigation Committees, Farmer's Association or any other that will be recognized as a legitimate entity by the local authority.

These would then form the basis of information gathering, data collection, identification of bottlenecks, and prioritization which in turn feed into and develop the capacity and legitimacy of the district, regional or national authorities.

Capacity building, training and retraining is thus considered as one of the most important elements of the programme both in the short-term, during the implementation phase, and in the long-term as regards sustainability of the recovery process. The strategy will thus:

- (i) Focus on 'islands of peace';
- (ii) Consider EIIP as entry point with new communities followed by mapping, action plan and mixed EIIP/Local Economic Development (LED) support interventions as appropriate;
- (iii) Consider post-mapping action plans and mixed EIIP/LED support interventions as appropriate for areas already mapped (eg Somaliland and Puntland);
- (iv) Work on umbrella inputs relevant to all of Somalia such as research, training materials development, training of trainers and so forth, financial services and MSME development, and critical macro-environment issues.

## Conclusions

Designing the upscaled Somalia EEL programme has been a real challenge but shows what can be achieved through making good use of sound background information and firsthand knowledge of Somalia while combining ILO and partner staff skills in EIIP and multi-component enterprise development programme design and execution. The authors take the opportunity to draw the following conclusions from the EEL exercise for reference by practitioners in future post-crisis operational responses, and EEL programme design and interventions:

- (i) **Get Moving:** Put rapid and useful EIIP interventions in place with local communities to relieve immediate post-war poverty, destitution, unemployment and pressure and to promote social dialogue by creating wage-labour employment in works that start to rebuild community life and inject badly needed cash into depressed local economies.
- (ii) **Get Mapping:** Adapt/improve the comprehensive tool kits ILO has designed for Somalia and South Sudan to the local country/regional situation. Train local people to and counterparts to expand the mapping outreach and backstop with expertise. Combine findings of multiple mapping exercises and other studies to identify portfolios of Phase II labour works opportunities and leveraged responses to common market-led and demand-driven enterprise and productive livelihood opportunities and needs.
- (iii) **Get the Broader Picture:** Simultaneous with mapping, complete a rapid private sector appraisal including any sub-sector overviews as well as a microenvironment critical needs picture to identify market-led supply chain, inputs and service opportunities, needs to develop these and short-medium term technical/other training opportunities, and responsive critical macro-inputs.
- (iv) **Get Thinking Diversification:** Private sector-led diversification of the economy may be critical to establishing/preserving peace especially where there is vulnerable single commodity economic and business overreliance. What natural resources have we to work with for diversification? How is diversification easily kick-started?
- (v) **Get the Appropriate Design Team:** Experienced and common sense EIIP, enterprise development, macro-needs practitioners and local expertise/inputs if available.
- (vi) **Get the Programme:** Formulate the responsive programme using the approach in this paper.
- (vii) **Get Implementing:** Get a lean UN Agency technical expertise portfolio and local representatives if available into one basket and hire-in the local/other specialist expertise



needed to implement. Obtain sufficient donor resources for the first few years. Focus on existing and new entrant implementing partnerships with relevant capacities. Remain flexible to regional scenarios such as where post-war peace has prevailed or needs to be established requiring different programme component input emphasis now and later.

(viii) **Get Process:** Develop local capacities and transfer process ownership at the earliest opportunities. Remain thoroughly flexible to post-JNA adjustment and upscaling.

### **Observations**

Public works type programmes are not generally considered suitable employment by ex-militia/ combatants. Survey of militia indicate that their main concerns are training and obtaining a source of employment and that the employment linked to training opportunities for sustainable employment may contribute to sustained re-integration.

#### 4.4.5 Discussion Points and Questions for Sub-theme

Discussion points and questions were provided to discussion groups as follows:-

##### **Groups I and II**

##### ***On Policy, Upscaling and Sustainability***

- (i) What are the key challenges in:
  - (a) Linking policy to practice?
  - (b) Ensuring sustainable financing and resource allocation in order to institutionalize wide scale application of labour based approaches?
- (ii) Identify the strategies to address the above challenges.

##### **Groups III and IV**

##### ***On Land and Property Acquisition***

- (i) Given that land acquisition impacts negatively on livelihoods, identify other negative impacts from public projects.
- (ii) Propose strategies of mitigating the negative impacts on the livelihoods.

##### ***On Recovery, Reconstruction and Development***

- (i) Identify the challenges for reconstruction and economic recovery in countries coming out of crisis.
- (ii) Identify key opportunities that can be used to support recovery.

#### 4.4.6 Plenary Discussion of Reports from Groups

##### **Groups I and II**

##### ***Policy, Upscaling and Sustainability***

- (i) *What are the key challenges in linking policy to practice?*
  - (a) Policy makers and technocrats are not fully convinced of the benefits of labour-based technology as a good substitute/supplement to the use of machines based approaches.
  - (b) Most of the labour-based practitioners are not involved in the policy formulation and therefore have little influence on policies.
  - (c) Most practitioners are not able to effectively interpret the policies on labour-based methods and are therefore not in a position to implement them.
  - (d) Lack of clarity and definition of labour-based technology is a challenge in implementing policies that are formulated for it's application.
  - (e) The concept of labour-based technology is still ambiguous to many and more information on the same should be availed to the stakeholders.
  - (f) Most stakeholders lack of knowledge and are not involved in on policy formulation.
  - (g) Policies imposed on governments by development partners sometimes contribute to the weak linkages between the policies and their implementation.
  - (h) Some of the policies do not take into consideration the practicality of their implementation.
  - (i) Lack of multi-sector approach to policy formulation is a challenge to linking policies to practice.
  - (j) Non-inclusion of many sectors in policy formulation results in policies that do not take concerns of all stakeholders on board.
- (i) *What are the challenges in ensuring sustainable financing and resource allocation in order to institutionalize wide scale application of labour-based approaches?*
  - (a) Allocation of resources without following policy guidelines is a major obstacle in the institutionalization of wide scale application of labour-based approaches.
  - (b) Inadequate and lack of sustainable funding.



(c) Lack of proper legislation supportive of labour-based strategy implementation.

(ii) *Strategies to address the challenges relating to sustainable financing and resource allocation:*

- (a) Reduction of over reliance on donor financing of labour-based projects by applying a sliding scale of donor funding.
- (b) Identification of other sources of funds for labour-based technology to diversify the sources of funding.
- (c) Private sector partnership.
- (d) Corporate social responsibility.
- (e) Linking labour-based strategies with poverty reduction strategy is vital in addressing the challenges of financial sustainability.

### **Group III**

#### ***On Land and Property Acquisition***

(i) Given that land acquisition impacts negatively on livelihoods, identify other negative impacts from public projects:

- (a) Pollution of the environment during and after infrastructure construction. The pollution is mainly in the form of noise and dust.
- (b) Projects bring people from different places together thereby resulting in spread of diseases such as HIV/AIDS.
- (c) Disputes arising from inadequate compensation of land also impact negatively on the communities involved.
- (d) Environmental degradation as a result of poor drainage and soil erosion.

(ii) On proposing strategies of mitigating the negative impacts on the livelihood, the participants recommended:

- (a) Development of proper designs for channeling of water so as to curb the problem of drainage.
- (b) Environmental impact assessment should be carried out on all projects to ensure compliance with environmental laws before the start of the projects.
- (c) Counselling and sensitization on diseases among the stakeholders in the project.
- (d) Compensation for land acquired for project developments should be done fairly and at market rates to avoid disputes.
- (e) Minimal disruption to social and economic life during the project.

### **Group IV**

#### ***Recovery, Reconstruction and Development***

(i) *Identify the challenges for reconstruction and economic recovery in countries coming out of crisis?*

- (a) Financial constraints - limited investment resources as resources are geared towards meeting basic requirements.
- (b) Restoring a sense of peace of mind and confidence amongst the citizenry;
- (c) Poor state of existing infrastructure inhibits access and mobilization of effort and available resource.
- (d) Lack of capacity and skills for reconstruction and economic recovery – previously existing capacities and skills are eroded during crisis and no capacities are developed during crisis periods.
- (e) Security is a major concern in the post war countries. Reconciliation among the warring factions is a key challenge in rebuilding a post conflict country.
- (f) Establishment of security organs to sustain peace is important in rebuilding such countries.



(ii) *Identify key opportunities that can be used to support recovery?*

- (a) Funding agencies like the World Bank and International Monetary Fund (IMF) can support the post conflict countries.
- (b) Media support in terms of positive coverage of the affected countries is of great assistance.
- (c) Communities, local skills and resources can be mobilized and organized to work together as a team in the post conflict countries to rebuild their countries.
- (d) Creation of advisory support and system building to support recovery.
- (e) Capacity building and training to create adequate provision of highly qualified manpower in the management of resources in the post conflict countries.
- (f) Use of existing knowledge and best practice from other countries in addition to local knowledge to exploit the limited resources in the countries coming out of conflicts.
- (g) Post war countries should focus on self-sustaining projects.
- (h) Good governance to make optimum use of the resources.
- (i) Community empowerment to enable them set their priorities.
- (j) Identification and repatriation of resourceful nationals to assist the recovery and rebuilding process.

## 5.0 Site Visits

The site visits were organized on the third day to various labour-based road and environmental works sites in urban and rural settings in and around Mombasa and Kilifi. Group and plenary discussion on positive and negative aspects observed during the site visits took place the following day. A brief description of the site and summary of outcomes follows (the detailed site briefs are given in Annexure 3).

### (A) Improvement of Vikwatani - Mtopanga Road to Gravel Standard

This was a road improvement site in a densely populated low-income urban settlement. The scope of works included drainage improvement, camber formation and provision of 120 mm thick gravel surfacing over the 2 km stretch. The total cost of the works was USD 23,400 for improvement – 53% of which going to labour; and USD for gravelling 19,800 – 15% of which going to labour. The works were being undertaken by a female contractor. The works were expected to create 1500 person days of which 50% would go to women; paid at the wage rate of Kshs. 200 (USD 2.7 per day).

### (B) Road B8-Mtwapa to Kilifi - Bush Clearing by Performance Contract

The Mtwapa-Kilifi road section forms part of the main heavily-trafficked trunk road linking Mombasa, Kilifi, Malindi, Lamu, Garsen and Garissa (B8). Despite the poor condition of the carriageway, traffic moves at high speed and the rapid growth of roadside bushes due to the high rainfall has been a constant road safety concern. In order to clear the roadsides and at the same time create much needed employment, labour-based contractors were being used to clear the roadside bushes and remove stumps for a width of 10 m. on either side of carriageway. Thereafter, a performance contract of one year would be put in place to ensure that bush/grass does not grow above 30cm. The 40 km stretch was divided into 4 sections, 10 km each, with four different contracts awarded.

The total cost of the works was USD 33,000, with initial bush clearing and removal of stumps expected to cost US\$ 22,500.

The bush clearing of 40 km of B8 was estimated to create 6,000 person days (pds) for the initial clearing and 2,500 Pds for the subsequent performance contract. A total of 200 labourers, out of which 85 were women (42%) were working on the site for the initial clearing. For the subsequent performance contract, it was estimated that approximately 40 labourers would be working part time on the road out of which at least 50% were expected to be women.

### (C) Road RAR1 – Mkwajuni – Mazuka Road

This was the fourth road in Kilifi district constructed under the Rural Access Road Programme in 1982. It was gravelled in 1983 and re-gravelled in 1993 under the Minor Roads Programme. Less than 50% of the gravel remains on the road. The 7.4 km stretch of road was under routine maintenance using a combination of a locally manufactured towed grader to reinstate the road camber and a small-scale contractor to carry out off carriageway activities including bush clearing, grubbing, cleaning mitre and side drains, unblocking silted culverts and installing scour checks. The works were expected to cost USD 4240 (USD 933 for grading and USD 3,307 for off carriageway works) and estimated to create 800 person days of employment, at a wage rate of USD 2.7, implying approximately 50% of the contract value or 65% of the labour contract. A total of 20 labourers were on site 8 (40%) of whom being women.

### (D) Road D556 – Soil Conservation at Ng'ombeni Area

This road serves one of the most productive agricultural areas in Kilifi and was improved through a gravelling and bridging programme in the mid 1980's. The road has subsequently been maintained through routine maintenance and spot improvements such as drainage maintenance and spot gravelling. Installation of cross culverts had resulted in massive erosion on the lower



catchment, which had a steep gradient, scanty vegetation and fine non-cohesive soil. Soil conservation, i.e gully protection measures developed under a Sida project in Nyeri district involving emphasis on use of locally available resources, i.e. labour, stones, wood to mitigate the problem were adopted.

The first gully was 41 meters long, 2.5 meters wide and about 2 meters deep with an average gradient of 17.4% and the repair works were estimated to cost USD 16,800. A series of double row check dams, interspaced with dams constructed with live posts were being installed. The purpose of the check dams is to control the speed of storm water, encourage siltation and growth of vegetation and ultimately result in progressive healing of the gully. The second, less pronounced gully was about 74 meters long, 1.5 meters deep, with an average depth of 0.5 meters and gradient of 15%, was estimated to cost USD 3,400. To arrest further formation of the gully an artificial waterway using a combination of double and single row check dams and scour checks were being installed.

The works were being undertaken by the Roads Department personnel as the local small contractors have not been trained in these techniques. The works were expected to create 350 person days with a wage rate US\$2.7 per day and direct wage content of US\$ 900 – 30% of the cost. A total of 25 labourers, out of which 10 were women (40%) were working on the site.

#### **(E) River Training and Gabion Protection Works at Mitangoni Bridge**

During the 1997 El-Nino floods the river course changed, damaging the road embankment. Instead of installing gabions, river training works were being carried out upstream to be followed by road embankment protection works. The works were being carried out by a small-scale contractor using a light excavator/backhoe to dig the channel and labour to widen and landscape. Gabion boxes would then be installed to protect the bridge abutment and road in case of run-off building up during flash floods.

The estimated cost of the works was USD 11,300. It was expected to create 550 person days with a wage rate of USD 2.7 per day - approximately 13% the direct wage content.

#### **(F) Haller Park – Quarry Reclamation**

Finally, the participants enjoyed an excursion out at the world renowned Bamburi Cement Limited, Haller Park – which is a reclaimed quarry. Haller Park, named after the biologist Dr. Rene Haller, is a remarkable example of quarry rehabilitation. The park developments are at different stages, from recently rehabilitated quarries with young trees, to those rehabilitated years ago with mature trees, thick vegetation and shrubbery, all in close proximity to quarries still under excavation, making it a spectacular, interesting and educational tour. The landscaped park has a rich biodiversity of trees, lakes, water canals, walking and cycle tracks and a variety of freely roaming herbivorous wildlife and a snake and crocodile park. The detailed briefs describing the works are provided in Annexure 3.

## **Summary of Discussion Outcomes of all Sites**

### **Positive Aspects**

- (i) RAR 1 road was found to be in relatively good condition considering the amount of re-gravelling and routine maintenance it had received – demonstrating the quality of initial works.
- (ii) All road improvements greatly enhancing access to the community to social and economic amenities.
- (iii) Creation of employment to the locals, particularly to women whom comprised between 40 - 50% of the work force at most sites.
- (iv) All projects demonstrated gender sensitivity as shown by the large women representation;
- (v) Substantial injection of wage income in the local economy.

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- (vi) Contractors and ministry personnel on all the sites were knowledgeable.
  - (vii) Good use of local labour materials and tools.
  - (viii) Stakeholder participation in both procurement and prioritization process.
  - (ix) Social consideration – minimizing demolition of structures in the urban unplanned settlement.
  - (x) Settlement community residents residing close to the road in the urban site were supportive of the project and did not insist on compensation for the areas that they had to give up to pave way for the road. They were also involved in felling and removing of the trees on their own space.
  - (xi) The environmental protection techniques gained in earlier project in another area replicated in this area, demonstrated good of sharing knowledge and skills.
  - (xii) The Haller Park provided good lessons on environmental rehabilitation and on how such works can be used to create employment and generate revenue.

### **Negative Aspects**

- (i) Lack of safety and protective clothing.
- (ii) Road safety concerns as the communities live very close to the road.
- (iii) Lack of continuity of the project in the future.
- (iv) Encroachment on road reserve by settlements.
- (v) Delays in payment of casual workers.
- (vi) Gang of workers were too large to organize properly.
- (vii) Difficulties in meeting the road standards due to lack of space.
- (viii) Lack of attention on environment concerns leading to costly erosion control and protection interventions.

### **Strategies to Overcome the Negative Aspects and Reinforce the Positive Aspects**

- (i) Proper clauses in contract document to enforce provision of safety gear.
- (ii) Policies on demarcation to prevent road encroachment by communities should be put in place and enforced.
- (iii) Worker payments should be over a shorter period preferably on fortnightly basis.
- (iv) Continuous funds flow to contractors is crucial in ensuring sustainability.
- (v) Provision should be made for payment in stages in the bidding documents.
- (vi) Small-scale contractors should be given mobilization payment or advance payment before contract commences.
- (vii) Training on the environmental concerns; contractors not trained to address environmental concerns.
- (viii) Incorporate environmental protection concerns into the project design to avoid costly intervention to reverse negative effects.

## 6.0 Review of Progress on Arusha Statement

Progress towards the Arusha statement of conclusions and recommendations of the 10<sup>th</sup> Regional Seminar for Labour-based Practitioners held in Arusha, Tanzania, in October 2003 was reviewed. The participants present were requested to submit progress made by their countries towards the various recommendations. These submissions were compiled and presented. It should be noted that the progress reported here is what was known to the participants present. The following is a summary of progress made under various sub-headings.

	Creation of Enabling Environment: Policy	Creation of Enabling Environment: Institutional Framework	Creation of Enabling Environment: Legislation
1 Ethiopia	Government issued a policy statement in 1998 relating to rural roads and transport development (in the context of Ethiopian Rural Travel and Transport Programme (ERTTP)). Since the declaration of the Arusha Statement measures have been taken towards operationalizing the various elements of the policy with particular emphasis on the use of LBT	In accordance with the government policies of decentralization an institutional framework for implementation of ERTTP has been created extending from the federal level down to district level. This comprises Central Programme Coordinating Board (CPCB), Regional Programme Coordinating Board (RPCB), Woreda (district) Development Committee (WDC), Kabele (sub-district) Development Committee (KDC) Members of the boards and committees are drawn from various relevant public sector institutions, CBOs and community representatives	The government has expressed commitment to improve the legalization to guide procurement procedures that enhance the engagement of LBT Furthermore, revised procurement procedures have allowed districts and regions to efficiently procure services, light equipment and tools as well as labour-based contractors
2 Bangladesh	No report was presented	No report was presented	No report was presented
3 Ghana	No report was presented	A programme is in place for decentralization of decision-making and resource management through the Ministry of Local Government <ul style="list-style-type: none"> <li>◆ The department of Feeder Roads (DFR) is now a decentralized organization</li> <li>◆ The outstanding issue is the financial decentralization</li> <li>◆ DFR is undertaking a pilot project by channelling funds through the Road Fund to the Districts</li> </ul>	Procurement law to guide government procurement procedures is in place Technical specifications for labour-based works have been developed. Labour standards are an integral part of feeder roads contracts. Community contracts are on pilot basis
4 Kenya	LBT is captured at policy level in the Governments Economic Recovery Strategy for Wealth Creation 2004-2008	A coordination framework with representation of all road agencies and financiers has been established and is operational at high level and technical level	There has been no progress although there is need for legislation to facilitate and protect LBT
5 Laos	No report was presented	No report was presented	No report was presented
6 Lesotho	Establishment of local government authorities resulting in Decentralization of work and in a 30% minimum of women participation upon works is a requirement	Establishment of local government authorities	No report was presented
7 Malawi	No report was presented	No report was presented	No report was presented
8 Mozambique	Strategy and Policy for the Road Sector-2001 established and are under implementation *Mainstreamed by the Roads III Program (2002-2012)	Directorate of Regional (rural) Roads is in place since 1999 Management of roads in terms of:- <ul style="list-style-type: none"> <li>◆ Routine maintenance of primary roads</li> <li>◆ Rehabilitation, periodic maintenance, spot improvement and routine maintenance of regional roads was decentralised to Provincial Levels in 2000. Still decentralising to district levels</li> </ul>	There is action plan (revised and ammended annually) which instructs and guides the provincial directorate of Public Works and Housing on the implementation of road activities on: <ul style="list-style-type: none"> <li>◆ Planning and prioritization</li> <li>◆ Procurement procedures</li> <li>◆ Funding allocation</li> <li>◆ Type of contracts</li> <li>◆ Reporting forms</li> </ul>

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	Creation of Enabling Environment: Policy	Creation of Enabling Environment: Institutional Framework	Creation of Enabling Environment: Legislation
9 Namibia	Labour-based works are in place through the 1998 white paper on the labour-based works policy. The establishment of a national employment creation body is in progress	LB Works Forum (LBWF) is to be established based on the white paper to implement the policy	No report was presented
10 Nepal	Government has developed policy and manuals for LBT and employs NGOs, Road Building Groups and user groups in LB projects	Central Government has devolved power to the DDCs (District Authorities) for design and implementation of LB projects. The government has enacted the local self-government act to guide local development and administrative activities	No report was presented
11 Nigeria	No report was presented	A state rural roads programme implementation unit has been established and it coordinates activities of six local government authorities that are involved in the implementation of the Ekiti Rural Access Programme	No report was presented
12 South Africa	A National Policy for use of labour intensive methods for government-funded contracts adopted	EPWP Unit has been established at National Department of Public Works. Provincial units have been established or are being established	Division of Revenue Act includes requirements for using EPWP Tender and Design Guidelines. Employment Framework for Public Works Programmes is in place
13 Somalia	No report was presented	Somalia has had no effective central government since 1991 due to civil war. There are state and regional authorities in a few areas, but no national policies for the use of LBT. ILO and EU have introduced LB approaches in roads and are advising local authorities on contracting local contractors (i.e. NGOs and/or women groups)	No report was presented
14 Tanzania	The Government of the United Republic of Tanzania launched a four-year programme for up-scaling the use of LBT in October 2004. The programme will establish a National Framework for the use of LBT in the country to guide implementation and promotion of LBT in an integrated manner in line with national strategies. The programme has four main elements - national LBT policy; increased knowledge and capacity in the public and private sector; enabling environment for implementation by private sector; linkages & partnerships & information sharing between stakeholders & implementing agencies	The Taking Labour-based to Scale Programme implementation matrix, prepared by the stakeholders, has identified responsible actors in the various activities to achieve the set objectives in the LBT national framework	Among others, the Public Procurement Act 2004, has provided for inclusion of local contracting enterprises in that: <ul style="list-style-type: none"> <li>◆ It allows for splitting of works to enable local contractors participation. This is possible upon approval by the Public Procurement Regulatory Authority (PPRA);</li> <li>◆ It has allowed for margins of preference to local contractors of up to 10% when competing with foreign contractors. A firm is local when a citizen of Tanzania owns more than 51% of the shares;</li> <li>◆ Works up to TShs. one billion (about US \$ 1,000,000/=) are reserved for local contractors only, unless when and where these are not available</li> </ul>
15 Uganda	According to the Uganda - Labour Policy, all initiatives geared towards creation of employment and LBTs have been identified and endorsed by Government	No report was presented	No report was presented
16 Zambia	No report was presented	The October 2003 National Council for Construction act was put in place and 2004 RDA (Road Development Agency), National Road Funds Authority (NRFA) and RSTA were setup. However, the process is not fully operational to date. They expect to achieve this goal by mid 2006	No report was presented
17 Zimbabwe	No report was presented	No report was presented	No report was presented

	Creation of Enabling Environment: Contracts	Creation of Enabling Environment: Incentives	Capacity Building: Education and Training
1 Ethiopia	Appropriate contract forms/frameworks suitable to contracting LB works have been designed with technical assistance of ILO funded by the World Bank. The contracts are being tested on 18 rural roads periodic maintenance pilot projects (about 400 kms) using LBT	No report was presented	Two training centers located at Ginchi and Alam Gana have organized training programs for over 2000 road technicians, foremen, superintendents, labour foremen for labour works annually. A consultant was appointed by the government to prepare training materials for LB road maintenance contractors. In this connection 18 LBT contractors have been awarded jobs in four pilot districts in which on-job training was an integral component
2 Bangladesh	No report was presented	No report was presented	No report was presented
3 Ghana	Appropriate contract document for LBT have been developed for improvement and maintenance works with appropriate technical specifications and item descriptions in Biles of quantities (BOQ)	<ul style="list-style-type: none"> <li>◆ There is no tax charged for the importation of construction and agricultural equipment</li> <li>◆ Local capacity to build some basic construction equipment is available and being encouraged.</li> </ul>	No report was presented
4 Kenya	Two LBT contract documents have been developed:- <ul style="list-style-type: none"> <li>◆ For small works 27,000 US\$</li> <li>◆ Medium works – 27,000 – 270,000 USD</li> </ul>	No report was presented	Road 2000 General Training Plan has been developed. LBT is included in craft course in Kenya Institute of Highway and Building Technology (KIHBT) and at degree level at Jomo Kenyatta University of Agriculture and Technology (JKUAT). There is still need for further integration in national syllabuses
5 Laos	No report was presented	No report was presented	No report was presented
6 Lesotho	Formulation of road construction and upgrading programme (ROCAU) with appropriate contract document	No tax on agricultural equipment	For better quality control two engineering posts have been created in the district and sub-district level
7 Malawi	No report was presented	No report was presented	No report was presented
8 Mozambique	The existing contracts are currently being updated under the Contract Management Procedures Consultancy Services (2004-2005) Implementation to start in 2006	No report was presented	Administered by the Roads Training Center in Chimoio (CFE) since the early 90's. Mainstreaming is being done by National Road Administration (ANE) and other relevant institutions. Short courses on LBT administered by ANE at the Eduardo Mondlane University University students encouraged to develop thesis degree on LBT
9 Namibia	Contracts from previous LB projects are under review to improve delivery of new projects	No report was presented	LB methods have been introduced in the curriculum of students at the polytechnic
10 Nepal	The government has developed appropriate contract guidelines/manual	No report was presented	Some training courses have been developed, although there has been no formal institution established for the training Work is in progress to establish a permanent training body
11 Nigeria	Appropriate contract forms suitable for contracting LBT have been developed and are in use	No report was presented	No report was presented
12 South Africa	EPWP Guidelines provide specific contract conditions which need to be incorporated into all contracts to make LBT a contractual requirement	No report was presented	Specialized training programmes for consultants, contractors, supervisors and foremen are in place and are being provided through the Construction Educational and Training Authority

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	Creation of Enabling Environment: Contracts	Creation of Enabling Environment: Incentives	Capacity Building: Education and Training
13 Somalia	ILO, UNDP and EU introduced LB approaches in roads and are advising local authorities on contracting local contractors (i.e. NGOs and/or women groups)	No report was presented	LB road projects have been undertaken in Berbera/Burroa, Hargeisa, Dila/Borawa, Bosaso/Garowe and Mogadishu. Capacities are being built. LB low cost housing projects have been undertaken in Somaliland and capacities have been built especially for youth. Engineers and technicians from Somaliland Roads Authority and Northeast Somalia Highway Authority have been trained in Kisii, Training Centre, Kenya. LB rehabilitation of irrigation canals and flood control structures in productive areas, i.e. Middle Sheble region is being undertaken. Capacities are being built and communities are being trained in irrigation and flood control.
14 Tanzania	A consultant is finalizing the preparation of appropriate LBT contracting document. The consultant is expected to complete the assignment by November 2005.	The issue of incentive schemes is to be taken onboard during the forthcoming research on financial and equipment availability.	Preparations are underway to procure a consultant to develop LBT training curriculum. They are targeting to have a curriculum in place by May 2006.
15 Uganda	No report was presented	No report was presented	Government has set up and continues to support Mt. Elgon Labour Based Training Center to train policy makers, practitioners and contractors in the use of Labour Based Technology.
16 Zambia	Through the Roads Department, now Roads Development Agency (RDA) with its former school, now Construction School, contracts documentation/manual have been fully developed that suit all labour-based practitioners are now available on request. However, different donors have their own forms of contract. Thus, RDA has been mandated to standardize all contracting materials.	To some extent the government has indicated preference for labour based contractors when awarding contracts. Furthermore, contractors have benefited from a waiver of duty on agricultural equipment which is also needed in labour based works.	Education and training on LBT has not yet kicked off but the marketing strategy through National Council for Construction is in place.
17 Zimbabwe	Special forms for contracting LB works are being used.	No report was presented	The Government recently completed a joint research project on increased application of LB methods. A workshop was held in February 2005 to disseminate research findings. Provincial Road Engineers, LB contractors, Consultants and others from academic institutions attended the workshop.

	Capacity Building: Awareness Raising/Advocacy	Resource Allocation: Financial	Resource Allocation: Equipment
1 Ethiopia	As part of the ERTTP officials in the Government of Ethiopia, local administration, CBOs and NGOs and various sectoral institutions have participated in various workshops centering around awareness raising/ advocacy with emphasis on the benefits of LBT methods, Intermediate Means of Transport (IMT), mobilizing community resources and introducing sustainable maintenance.	The government has introduced budget and accounting reports with decentralization of government functions as a basic principle and the framework for financial sectors has been put in place. Budget and accounting personnel at different levels have been trained in the use of new procedures such as double entry accounting. Also a manual for financial management in the implementation of ERTTP has facilitated the recording of transactions, fund flow control and expenditure reporting. However, there is little progress regarding credit/ loans schemes, and special fund for micro-enterprises setting aside some percentage of major projects for LBT.	No report was presented
2 Bangladesh	No report was presented.	No report was presented.	Local contractors have opportunities to lease equipment through relevant departments.
3 Ghana	No report was presented.	No report was presented.	There is payment of up to 20% as additional mobilization for the procurement of equipment.
4 Kenya	District stakeholder awareness workshops were held in 40% of districts in Kenya but there is still need for more.	Funding available for LBT from Kenya Roads Board (KRB) - Road Maintenance Levy Fund (RMLF). There is no specific micro-enterprise financing targeting LBT.	Equipment is available for hire from private and public sectors.
5 Laos	No report was presented.	No report was presented.	No report was presented.
6 Lesotho	No report was presented	There has been the formation of Lesotho Fund for Community Development that is financing community projects and other projects. Road maintenance fund has also been established	Lesotho Fund for Community Development (LFCDD) encourages use of local resources and local private hire companies.
7 Malawi	No report was presented.	No report was presented.	No report was presented.
8 Mozambique	Being done by ANE and the Provincial Road Commission (DPOPH, ANE, Consultants, Contractors, District Administrators, Ministry of Finance, Ministry of Planning and Rural Development, Ministry of Agriculture)	No report was presented.	Equipment hiring companies are in place, although not working efficiently.
9 Namibia	No report was presented.	No report was presented.	No report was presented.
10 Nepal	NGO's local stakeholders/local authorities are involved in awareness raising and advocacy.	No report was presented.	No report was presented.
11 Nigeria	Benefits of LBT are being promoted through workshops and open fora.	No report was presented.	Equipment hiring units for graders have been established.

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	<b>Capacity Building: Awareness Raising/Advocacy</b>	<b>Resource Allocation: Financial</b>	<b>Resource Allocation: Equipment</b>
12 South Africa	Continuous awareness raising campaign about EPWP has been put in place. The Kwa Zulu Natal Transport Technology Centre signed a Memorandum of Understanding with ILO/ASIST to act as a focal point for labour-based technology knowledge sharing. The CSIR Transport Technology Centre is also working with ILO/ASIST sharing knowledge on labour-based technology	Funds have been allocated to provinces and municipalities earmarked for LBT/ EPWP. Additional funds are being targeted	The Government is actively trying to discourage use of equipment
13 Somalia	A Local Economic development and Appropriate Technology Resource Centre has been set up in Hargeisa and one is upcoming in Garowe (a ILO/Government of Italy project)	No report was presented	No report was presented
14 Tanzania	Awareness seminars are being conducted for the Local Government Authorities. One seminar was conducted in July 2005. Two more seminars have been planned for this financial year (2005/06)	Two separate research consultancies are planned for this financial year (2005/06) to study credit, tools and equipment quality and supply levels	No report was presented
15 Uganda	No report was presented	With Regard to the road infrastructure:- <ul style="list-style-type: none"> <li>◆ 20% of the road maintenance works is by policy implemented by LBT;</li> <li>◆ 80% of road maintenance for district roads is by LBT; and</li> <li>◆ 90% of maintenance of community access roads is by LBT</li> </ul>	No report was presented
16 Zambia	To some great extent awareness raising is being done through National Construction Council (NCC) magazines, newsletters and website. Previously the magazine focused mainly on construction industry in general. In the recent past, space has been provided for LBT awareness campaign. They have also endeavoured to use radio programmes to sensitize all stakeholders on the benefits of using LBT	No report was presented	The strategic plan to have plant pool operated privately in every province of the country is in place but not effected due to financial constraints
17 Zimbabwe	The Zimbabwe Transport Technology Centre signed a Memorandum of Understanding with ILO/ASIST to act as a focal point for labour-based technology knowledge sharing	Every year there is a provision in the budget to be used exclusively by small-scale contractors	There is no change since Arusha seminar: Contractors importing equipment for capital projects are exempted from paying taxes

	Resource Allocation: Linkages	Cross-cutting Issues: HIV/AIDS, Gender, Environment and Poverty	Research and development
1 Ethiopia	The government and the donor community have provided funds for the preparation of integrated multi-sectoral Woreda (district) development plan and Woreda Integrated Development Plan (WIDP) with the main purpose of promoting accessibility and mobilization. Consultants with the direct involvement of local level government and community organizations have prepared these plans. The plans have provided an opportunity for linkage focusing on the broader goal of the sustainable development and poverty reduction programme. This has become a fundamental step in the use of government, community, donor and NGO resources in a coordinated manner	No report was presented	Research on performance of unpaved roads in being carried out by TRL to promote LB methods of Road construction and maintenance as part of the regional research program. Nonetheless real push is required to initiate awareness and promote research and development activities in the country
2 Bangladesh	No report was presented	No report was presented	No report was presented
3 Ghana	No report was presented	Cross cutting issues are incorporated in contract documents. Contractors and other civil society groups are being trained in the preparation and use of method statements covering cross cutting issues in their operations	The government has established a working relationship between the Ministry of Road Transport and the Kwame Nkrumah University of Science and Technology(KNUST):- <ul style="list-style-type: none"> <li>◆ LBT have been incorporated in B.Sc and M.Sc. Civil Engineering courses at KNUST;</li> <li>◆ Knowledge sharing through lectures,workshops and seminars; and</li> <li>◆ Engagement of KNUST to undertake research for the Ministry of Roads and Transport (MRT)</li> </ul>
4 Kenya	There has been co-ordination within the road sector through the District Roads Committees, Constituency Development Fund (CDF) and Local Authorities Transfer Fund (LATF). At national level, linkages have been initiated through R2000 coordination committee. Also linkages with Agricultural programmes have been established	Cross cutting issues are incorporated in the ongoing R2000 programs – especially through Sida supported Nyanza R2000 program and they are also included in training and procurement documents. There is still room for improvement in GoK funded works	No report was presented
5 Laos	No report was presented	No report was presented	No report was presented
6 Lesotho	Government is formulating poverty reduction strategy programme agreed upon by all stakeholders	Strategy to reduce HIV/Aids Government is putting aside 2% each year for HIV/Aids Minimum of 30% of women in local government authorities Project to be accompanied by Environmental Impact Assessment (EIA) Poverty reduction strategy paper: Food security	The government is involved in research on increased application of labour-based technology
7 Malawi	No report was presented	No report was presented	No report was presented

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	Resource Allocation: Linkages	Cross-cutting issues: HIV/AIDS, Gender, Environment and Poverty	Research and Development
8 Mozambique	Inter-Ministerial Committees is in place at high level Road Commission is in place at provincial level	On gender, awareness campaign on all LBT projects has been mounted in order to achieve the implementation of the targeted 25% of women employment through the gender unit established at ANE On environment, environmental guideline on Road Sector is in place Clauses related with environmental issues are included in all contracts Monitoring and evaluation of all LBT projects in terms of implementation of the environmental management plan	The Institution of Higher Learning (Maputo Industrial Institute) financed by ANE to include in its curriculum LBT topics Research studies related to engineering standards and life cycle cost for labour-based and low volume unpaved roads are on course Guideline on spot improvement have been developed Dissemination being done to the practitioners in seminars and on site
9 Namibia	No report was presented	Consultants are required to include environmental studies/impact assessment in planning phase and to control environmental effects during construction, Contractors must raise HIV/AIDS awareness through education (contractually binding)	No report was presented
10 Nepal	The government is working closely with funding agencies and programmes focusing on poverty reduction. Partners include DFID, SDC, Danida, etc	The Ministry of Women, Children and Social Welfare has departments that address environmental and gender issues	No report was presented
11 Nigeria	No report was presented.	Gender, environment and poverty have been mainstreamed into the Ekiti Road Access Programme	No report was presented
12 South Africa	EPWP Learning network to share experiences and lessons is being established, Best Practice Guides for LBT are completed and are being published	Targets for employment and training are in place through "Code of Good Practice for Public Works Programmes"	Research is being commissioned through M&E section in partnership with Witswatersrand University, Centre for Scientific and Industrial Research (CSIR) etc
13 Somalia	No report was presented.	Three environmental projects undertaken in Somaliland trained about 600 women and men on HIV/Aids awareness (ILO/ UNDP/Government of Italy project)	Territorial Diagnostic and Institutional Mapping exercises have been undertaken in 40 localities which provide information for identification, and prioritization of interventions
14 Tanzania	This is planned to be fully implemented during the second year of the programme (2005/06). However, the existing links and partnerships with different actors will continue	<ul style="list-style-type: none"> <li>◆ HIV/AIDS will be addressed in each new site of labour-based operation, through partnership with existing awareness raising initiatives already operational in the country.</li> <li>◆ During the implementation of labour-based methods, environmental issues will be addressed;</li> <li>◆ Equal opportunities for women and men in the access to work and training programmes will be given priority as well as ensuring that working conditions on labour-based sites conform to the required standards</li> </ul>	This is planned to be conducted in the second year of the implementation of the programme (2006/07)
15 Uganda	No report was presented	Manual for rehabilitation/construction and maintenance of district rural and community access roads has been drawn up and it contains matters of all cross cutting issues eg gender, Occupation Safety and Health (OHS), HIV/AIDS, environment and community participation. The Ministry of Works Housing and Communication has set up a dedicated unit, the Environmental Liaison Unit (ELU), to coordinate all cross cutting issues for the Ministry activities including providing advice to local governments	No report was presented

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	Resource Allocation: Linkages	Cross-cutting issues: HIV/AIDS, Gender, Environment and Poverty	Research and Development
16 Zambia	Road SIP (Road Sector Improvement Programme) has fully created connectivity among stakeholders through various programmes among many others. The most notable is the Poverty Reduction Program (PRP). This has brought in networking among various institutions /stakeholders in terms of achieving enabling environment for all	<ul style="list-style-type: none"> <li>◆ HIV/AIDS has had an overwhelming response from all stakeholders. Zambia has reached a stage where all contractors have an obligation to disseminate HIV/AIDS information. Starting from training, contractors are well informed about the pandemic. They in turn talk to their laborers during contract implementation on continued basis up to completion of the works.</li> <li>◆ On environment, a unit under Roads Development Agency has been specifically designed /created to deal with environmental issues in co-ordination with the Environmental Council of Zambia.</li> <li>◆ On poverty, all efforts being done above are meant to reduce poverty</li> </ul>	The Research Department operating under the auspices of the NCC - Construction School, was set up in October 2004. However, it is not yet operational
17 Zimbabwe	A Transport and Poverty Reduction Review workshop was recently held. LBT was cited as one way of reducing poverty. The workshop was attended by participants from various government ministries and civil society	HIV/AIDS issues continue to receive attention at the highest levels	Recently completed a joint research project on increased application of LB methods Held a workshop in Feb 2005 to disseminate research findings. Provincial Road Engineers, LB contractors, Consultants and people from academic institutions attended the workshop

## 7.0 Seminar Conclusions: The Mombasa Statement

A draft Mombasa Statement was presented in plenary during the last session of the seminar. It was discussed and amended by the participants. The following is the revised statement.

### Preamble

The 11<sup>th</sup> Regional Seminar for Labour-based Practitioners was held in Mombasa, Kenya, from 2<sup>nd</sup> – 7<sup>th</sup> October, 2005 under the theme Integrated Labour-based Approach (LBA) for Socio-Economic Development.

The objectives of the seminar were to:

- (a) To facilitate sharing, learning and expanding of knowledge through presentations, discussion and debate on the state of the art of policy, practice, research and development.
- (b) To review the status of taking forward of the recommendations made during the 10<sup>th</sup> Regional Seminar embodied in the “Arusha Statement” and share experiences about strategies, processes and constraints in implementing the statement in various countries.
- (c) To discuss the future regional seminars and their roles to mainstream labour-based approaches.

Two hundred and forty eight participants, among them, practitioners, planners, policy makers, researchers, funding and development partners and all others involved in infrastructure development from the African region and beyond attended the seminar from twenty one countries.

Fifteen papers were presented and discussed in four sessions under the following sub-themes:

- (i) Community Participation and Performance-based Contracting;
- (ii) Impact Monitoring, Evaluation and Environmental Sustainability;
- (iii) Training, Research and Development;
- (iv) Policy and Upscaling, Sustainable Financing and Resource Allocation.

In addition to paper presentations and discussions, the participants undertook a one-day field visits to various labour-based road and environmental works sites in urban and rural settings in and around Mombasa and Kilifi districts.

**Having** deliberated on the important and relevant issues on integrated labour-based approach for socio-economic development for five days focusing on the following major issues:

### Lessons Learned

- (a) Impact on socio-economic development;
- (b) Capacity building;
- (c) Upscaling and sustainability;
- (d) Challenges and opportunities;
- (e) Strategic direction and next steps.

**RECOGNISING** the importance and the potential of LBA in socio-economic development through the provision of infrastructure and related services, with opportunities for involvement of community and both public and private sectors.

**COGNIZANT** of the relationship between poverty, the high rate of unemployment particularly in rural areas and urban slums and the limited access to infrastructure and services.

**TAKING NOTE** of the immense, varied experiences and lessons learned from piloting LBA projects and programmes that have been reported in this and past regional seminars and becoming conscious of the need for the upscaling and taking forward LBA with respect to socio-economic development;



**ENCOURAGED** by the admiration shown by and participation of the seminar participants through presentation of papers and discussions thereof of these regional seminars, experience sharing and networking and therefore the unswerving wish to continue holding of these seminars and the need to employ and implement LBA practices for enhanced socio-economic growth.

**GRATEFUL** for both the technical and financial involvement and support of our development partners in popularizing and advancing LBA and their continued keenness to support these initiatives.

**REALIZING** the limited commitment and support by government's for upscaling, mainstreaming, dialogue between all the sectors and sustaining LBA in socio-economic development.

**AWARE** of the challenges, constraints and inadequate capacity, with respect to technical, financial, institutional framework, equipment, human capital and cultural issues that have and continue to hold back the wider application of LBA.

**NOTING** the efforts and indeed the progress made by several countries since the 10<sup>th</sup> Regional Seminar in Arusha and the continued commitment of governments to provide better living conditions of their citizenry through preparation of poverty reduction strategy papers and subsequent development of economic recovery strategies aimed at achieving national development goals; as well as regional commitments and goals, such as that made by the African Union Heads of State at the Extraordinary Summit for Employment and Poverty Alleviation, Ouagadougou, Burkina Faso, September 2004 and the Millennium Development Goals.

**NOTING ALSO** the commitment of African Union Heads of State at the Extraordinary Summit for Employment and Poverty Alleviation, Ouagadougou for the promotion of the agricultural sector and rural development, sustainable management of the environment for food security and development of support infrastructure.

**AGREEING** with the Plan of Action of the Africa Union Heads of State Extraordinary Summit for Employment and Poverty Alleviation, Ouagadougou to place employment creation as an explicit and central objective of our 11<sup>th</sup> Regional Seminar for sustainable poverty alleviation and with a view to improving the living conditions of our people, particularly in the fields of infrastructure, agriculture and rural development and environmental conservation.

**AND AGREEING** further with the African Union Heads of State Extraordinary Summit for Employment and Poverty Alleviation, Ouagadougou to promote an effective and speedy implementation of actions and programmes for:

- (i) Promoting public and private sector reforms for employment creation;
- (ii) Promoting public works programmes in infrastructure development;
- (iii) Creating productive labour absorbing jobs through labour intensive approaches;
- (iv) Promoting subcontracting of services in large-scale projects to cooperatives, non governmental organizations and small and medium-size enterprises owned by members of the local community;
- (v) Encouraging public-private partnerships in order to promote productive employment in the formal and informal sector;
- (vi) Ensuring adequate incomes and labour standards for jobs creation;

The 11<sup>th</sup> Regional Seminar participants **HEREBY RESOLVE** to uphold, take full advantage of, mainstream and upscale the use of LBA in the provision of infrastructure and related services in order to create wealth particularly among the poor communities, through the employment of the following strategies:

## (A) Creation of an Enabling Environment

- (i) **Policy:** Impress upon governments to speedily continue developing and implementing relevant policies that will favour the upscaling, mainstreaming and optimizing the employment of LBA in order to ensure adequate support and sustainability. These policies should clearly guide the procurement and engagement of local contractors and communities in LBA projects.
- (ii) **Institutional framework:** Impress upon governments for the urgent need to create inter-ministerial cooperation for policy coherence on use of local resources and decentralized institutions charged with policy operationalisation, formulation of development plans, implementation, monitoring and evaluation for efficiency and minimal bureaucracy in decision-making and resources management with regard to LBA practices.
- (iii) **Legislation:** Impress upon governments to institute and bring into being appropriate, amend existing and enforce legislation and procurement procedures in order to favour the use of local resources.
- (iv) **Contracts:** Impress upon governments to develop appropriate contract conditions and/or clauses to compel LB contracting for all suitable infrastructure programmes, taking into consideration special circumstances of all stakeholders.
- (v) **Incentives:** Impress upon governments to address disincentives in fiscal policies presently favouring foreign recourse use over local resource use, such as import duties and taxation favouring use of foreign machines rather than local labour and local manufacturing.

## (B) Capacity Building

- (i) **Training:** Impress upon relevant government institutions, private sector (for example, workers and employers organizations) and other training institutions to enhance the integration and mainstreaming of LBA in their curricula. This entails the development of and/or review of relevant curricula for LBA inclusion and developing demand responsive courses to the needs of LBA practitioner's, trainers of trainers, policy makers and other stakeholders at all levels.
- (ii) **Research and development:** Impress upon governments, research institutions and other stakeholders for continued support for labour-based research practitioners and research institutions to embark on LBA research and development, incubation through science parks, dissemination of research findings and upscaling of proven best practices.
- (iii) **Awareness raising/advocacy:** Impress upon governments, workers and employers organizations and other stakeholders to accelerate the promotion of the benefits of LBA through lobbying, information dissemination and awareness campaigns.

## (C) Allocation of Resources

- (i) **Financial:** Impress upon governments to 'ring-fence' resources for LBA interventions, establish and implement prudent financial systems; and at the same time call upon the participation of local financing institutions to provide credit facilities in order to ensure sustainable access of funding by LBA practitioners.
- (ii) **Equipment:** Impress upon governments through the relevant departments and other stakeholders to operationalize process that enable local contractors access equipment.
- (iii) **Linkages:** Impress upon governments, private sector, civil society, workers and employers organizations and other stakeholders to continue establishing mechanisms of linking various programmes related to socio-economic development by optimizing resource utilization. In addition, linkages should emphasize enhancing networking and sharing of information and data.



**(D) Mainstreaming Cross-Cutting Issues**

We call upon Governments through the relevant departments, civil society, private sector and all the stakeholders including civil society to mainstream health issues (for example, HIV/AIDS), gender, environment issues and governance in all LBA interventions.

**THEREFORE**, we call upon the governments, development partners, civil society, private sector and the other stakeholders to develop and implement operational plans for taking LBA forward. We recommend that practitioners with support ILO formulate structured consultation process to monitor the implementation of these plans. Further, we recommend that the 12<sup>th</sup> seminar reviews the progress made towards this direction.

## 8.0 The Future of Regional Seminars: The Way Forward

**Session Chaired by Terje Tessem, International Labour Organisation, EMP/INVEST**

Mr. Tessem gave a brief presentation posing issues for a discussion on the future of the regional seminars and the role they should play in influencing national and regional development agenda..

He noted the Regional Seminar for Labour-based Practitioners has played a vital role as a forum for technology exchange and sharing of best practice. The seminar, as illustrated by the papers presented at this event, have demonstrated an advancement and expansion of the labour-based approaches, with good examples of research and long-term comprehensive application of the approach. They also demonstrated the increasing role labour-based approaches play in national development agenda.

### Future Seminars

Mr. Tessem posed the following question: How shall future seminars be used to further the application of labour-based approaches and influence national, regional and international agenda?

#### At National Level

- (i) What roles should the host and the various participating countries play?
- (ii) How can they be supported to move the agenda forward?
- (iii) At each seminar, recommendations and strategies are put forward to which participants commit themselves. But how can firmer commitments be achieved and followed by participating countries?

It was suggested that joint committees be established to ensure the follow-up. But how would such a committee be funded?

#### At regional and international level, the following needs to be done:

- (i) Improve the role/leverage of the seminar outcomes in political processes at:
  - (a) African Union level (Commissions Labour and Social Affairs, Rural Development, etc);
  - (b) Regional Economic Commission (REC) level eg East African Community (EAC), Southern Africa Development Community (SADC), etc.
- (ii) Improve the role of more technically-oriented processes such as:
  - (a) New Partnership for Africa's Development (NEPAD);
  - (b) RECs like Southern African Development Community (SADC) and East African Community (EAC).
- (iii) Identify the Regional Economic Commission's role in improving dialogue with development partners to meet common objectives.

#### Issues for consideration for future of the seminars:

- (i) Should there be shorter version(s) of the statement? (1 to 2 points)?
- (ii) Does the statement play a role in resource mobilization?
- (iii) Thematic work on pressing current issues and new challenges – up front, papers and during the seminar.
- (iv) On participants:
  - (a) Should the seminar comprise practitioners at all levels and disciplines in one seminar?
  - (b) Establish peer groups to mobilize participants from other countries;

- 
- (c) Technology/thematic group (researchers, consultants, government);
  - (d) Ministers should they attend?
  - (e) Beneficiaries – communities should they attend?
- (v) Funding issues:
- (a) Participants fee – are people able to come or are the fees prohibitive?
  - (b) Increased action – special funding needed to mobilize increase follow-up action.

These issues were raised for discussion. Due to time constraints, only minimal discussion was possible. It was therefore suggested that the discussion be continued through other forum/ media, such as a web discussion to reach a consensus on the way forward.



## 9.0 Nominating the Host for the 12<sup>th</sup> Regional Seminar

Nominations were invited from those countries wishing to host the 12th Regional Seminar for labour-based practitioners to be held in two years time.

Participants from South Africa submitted their application. This was accompanied with a presentation on the possible venues the country can offer and they included Cape Town, Durban, Suncity-Johannesburg and Pretoria.

As there were no other nominations, South Africa was selected to host the 12<sup>th</sup> Regional Seminar for Labour-based Practitioners in 2007.

## **10.0 Closure of the 11<sup>th</sup> Regional Seminar**

### **10.1 Vote of Thanks by the Moderator**

The moderator, Prof. Gichaga, conveyed his thanks and those of his two colleagues from the University to the Ministry for engaging them through the University of Nairobi Enterprises and Services Ltd (UNES) to provide the moderating and rapporteuring services during the week long seminar.

He observed that while there has been considerable advancement in technology over the last few decades, especially in Information and Communications Technology (ICT), there has not been sufficient attention given to the plight of the poor in the society. Noting that more than half of Kenyans live below the poverty line, he argued that the issue of widespread poverty was a good enough reason to justify embracing labour-based approaches in the implementation of infrastructure development in Sub-Saharan Africa.

He then thanked the KRB, ILO, Sida and other sponsors for their financial and logistical support for the seminar. Finally, he thanked all the participants for the lively and effective deliberations during the seminar.

### **10.2 Vote of Thanks by a Representative of the Participants, Ms Prudence Mushota Tembo from Zambia**

Ms. Tembo stated that she felt greatly honoured to be given the opportunity to pass a vote of thanks on behalf of the participants. She started by recognizing the tireless efforts by the stakeholders especially the financiers and the organizers of the seminar. She expressed satisfaction with the arrangements that had been put in place for the seminar at the Whitesands hotel and during the site visits. She particularly highlighted the gala dinner, where participants were treated to entertainment with a traditional, cultural African touch, during which time participants were also able to network.

She paid tribute to the participants for attending and actively participating in the seminar, which was an indication that many countries had come to appreciate the importance of labour-based approaches to infrastructure development and implementation. She hoped that participants would impress on their governments on the need to put into practice the lessons learnt from the seminar. She urged the participants to advise the key stakeholders in their countries, especially financiers and policy makers, on the expected benefits which would accrue following the implementation of seminar recommendations.

She finally thanked the Government of Kenya through the Ministry of Roads and Public Works for hosting and organizing the seminar, and wished the delegates safe travel to their various destinations.

### **10.3 Vote of Thanks by the Chairman, Seminar Technical Organising Committee (STOC) Eng. C.F. Kiranga, MRPW, Kenya**

In his vote of thanks, the Chairman of STOC Eng. Kiranga expressed his excitement with the success of the 11<sup>th</sup> Regional Seminar and thanked all who had contributed to its success. He noted that it had been a busy week for the participants who may not have had the chance to enjoy the Indian Ocean. Indeed, he had noted that there had been over 95% attendance during the deliberations of the seminar.

He paid tribute to the paper presenters and hoped that the participants gained from the paper presentations as well as the exhibition which portrayed innovations in the field of labour-based technology. He hoped that delegates would continue networking, which they had established during the seminar.



In particular, he acknowledged the outstanding work done by the members of the STOC, the paper reviewers, the moderator, the rapporteur, the administrator and most importantly, the participants. He urged delegates to spare time after the seminar to visit tourist attraction scenes in the coastal town of Mombasa.

#### **10.4 Closing Remarks by Senior Technical Adviser, International Labour Organisation (ILO), ASIST – Africa Programme, Mr. Dejene Sahle**

Mr. Sahle noted that there had been positive developments in the application of labour-based technology (LBT) for employment creation and that it was encouraging to witness that the approach had gone multi-sectoral. He observed that the old top-bottom approach had changed to bottom-up, which had been a desirable change. Despite the various positive efforts by governments, he noted that the issue of mainstreaming and upscaling LBT was still faced with major challenges. There was a need to continuously evaluate the success towards reduction of unemployment and poverty in order to have a basis for justifying the approach during infrastructure development.

He observed that some universities in Ethiopia, Ghana, Kenya, South Africa and Zimbabwe had introduced and integrated concepts of LBT into their curricula. He urged the participants to engage in research on home grown solutions for tackling challenges of job creation.

Noting that technology was advancing at a fast pace, he urged the participants to endeavour to harness technology in order to remain relevant. Mr. Sahle observed that various resolutions had been made at country, regional and at international levels such as the African Union Heads of State Ouagadougou Plan of Action in 2004 and the resolutions of Ministers of Transport, Addis Ababa, Ethiopia 2005 that advocated the application of labour-based technology in infrastructure development.

At the lower levels, Mr. Sahle underscored the importance of adopting the Millennium Development Goals (MDGs) by different governments and entrenching MDGs principles in government policies. He further noted that time had come for the translation of policies into practice.

He asked the participants to strive towards the implementation of MDG by taking key responsibilities in their area of duties and not sitting back.

Finally, Mr. Sahle thanked the Kenya Government and STOC for organizing the Seminar and also noted that the resolutions made in the seminars should be taken to the next level.

#### **10.5 Closing Remarks by the Permanent Secretary, Ministry of Roads and Public Works, Kenya, Amb. Eng. M.M. Mahamud**

Amb. Eng. Mahamud noted that there was a need for creating a greater appreciation of the use of labour-based approaches and their impact on socio-economic development. He underscored the importance of combining the approach with community involvement to generate jobs.

The PS urged participants to focus on long-term objectives of the seminar so that the efforts being made through the regional seminars may have real impact on the poor.

The PS observed that there was a real need to address issues around labour standards such as payment of workers involved in labour-based programmes, emphasizing the need to streamline good labour practices.

He concluded his speech by inviting the Assistant Minister for Roads and Public Works to officially close the Seminar.



## **10.6 Formal Closure of the 11<sup>th</sup> Regional Seminar by the Assistant Minister, Ministry of Roads and Public Works, Kenya, Hon. Eng. Joshua Toro**

The Assistant Minister thanked all participants for finding time from their busy schedules to attend the seminar, which he said had met its objectives. He thanked those involved in the preparations of the seminar.

On behalf of the Government, he thanked the participants of the 10<sup>th</sup> Regional Seminar held in Arusha, Tanzania in October 2003 for selecting Kenya as the host for the 11<sup>th</sup> Regional Seminar. Hon. Toro indicated he was impressed by the level of interaction, discussion and debate that characterized the seminar, observing that sharing of informed ideas on labour issues was a clear indication that the region was committed to the socio-economic development programmes.

He noted that the Ministry of Roads and Public Works, Kenya found the outcome of the deliberations made in the seminar most useful towards adding to the gains that the Kenya Government had made in the development and application of labour-based technology.

The Assistant Minister further observed that the timing of the seminar was at a time when the Ministry was in the process of re-carpeting and constructing roads throughout the country. He promised that Kenya would apply the lessons learnt during the conference appropriately.

In addition, the Assistant Minister noted that rehabilitation of rural roads by labour-based methods was a key action through which countries could create the much-needed employment while at the same time supporting the productive sectors. It was through the creation of jobs that the region could eradicate poverty and improve the standards of living of its people.

The Assistant Minister encouraged participants to commit themselves to the commitments made during the seminar and undertake to review progress at the next meeting.

Finally, the Assistant Minister encouraged all involved to keep consulting each other to keep track of the implementation and monitoring of impending factors as the approach takes effect in the respective countries.

## 11.0 Annexures

### 11.1 Annex 1: Previous Seminars and Themes

Previous seminars have been held in the following countries:-

**1<sup>st</sup> Mbeya, Tanzania, 26<sup>th</sup> – 28<sup>th</sup> February 1990**

Topics covered: Low Cost Structures, Haulage, Training, Road Maintenance and Labour Management

**2<sup>nd</sup> Mhales Hoek, Lesotho, 2<sup>nd</sup> – 6<sup>th</sup> March 1992**

Topics covered: Road Maintenance, Contracting, Compacting and Labour Standards

**3<sup>rd</sup> Harare, Zimbabwe, 27<sup>th</sup> September – 1<sup>st</sup> October 1993**

Topics covered: Tools and Equipment, Small-scale Contractor Development, Involvement of Women in Labour-based Road Works, ASIST Technical Enquiry Service

**4<sup>th</sup> Johannesburg, South Africa, 16<sup>th</sup> –20<sup>th</sup> January 1995**

Themes: Urban Infrastructure Development, Education and Training

**5<sup>th</sup> Accra, Ghana, 22<sup>nd</sup> –26<sup>th</sup> April 1996**

Theme: Labour-based contracting

**6<sup>th</sup> Jinja, Uganda, 29<sup>th</sup> September – 3<sup>rd</sup> October 1997**

Theme: The right tool for the job – a review of tools and equipment for labour-based infrastructure works

**7<sup>th</sup> Lusaka, Zambia, 3<sup>rd</sup> – 7<sup>th</sup> May 1999**

Theme: Urban Infrastructure Development, Education and Training

**8<sup>th</sup> Cairo, Egypt, 15<sup>th</sup> – 19<sup>th</sup> October 2000**

Theme: The New Millennium – Challenges for employment-intensive investments

**9<sup>th</sup> Maputo, Mozambique, 20<sup>th</sup> – 24<sup>th</sup> May 2002**

Theme: Towards Appropriate Engineering Practices and an Enabling Environment

**10<sup>th</sup> Arusha, Tanzania, 13<sup>th</sup> –17<sup>th</sup> October 2003**

Theme: Labour-based Technology for Poverty Reduction

## 11.2 Annexure 2: 11<sup>th</sup> Regional Seminar Programme

Day and Date	Time	Activity	Paper Presenter/Responsibility
Sunday, 2 <sup>nd</sup> October 2005		Arrival/Registration of Participants	Administrator
Monday, 3 <sup>rd</sup> October	08.00-09.00	Late Registration	Administrator
	09.00-10.45	Opening Session	Moderator
	10.45-11.15	Refreshment Break/Photo session	
	11.15-11.45	Setting the Scene; Overview of the Arusha Statement	ILO- J. Connolly
	11.45-11.50	Sub-theme 1: Community participation and performance-based contracting - Introduction by Session Chair	Sub-theme chair
	11.50-12.10	Paper 1: Public private partnerships (PPPs) and community involvement - an approach for sustainable municipal infrastructure and service delivery benefiting the urban poor	K. Salewi
	12.10-12.30	Paper 2: Expanding the application of labour-based methods - the potential of urban paving	K. Ampadu
	12.30-12.50	Paper 3: Performance contracts case study in Zambia	K. Siwale
	12.50-13.00	Comments/questions from the floor/Reactions from Presenters	All Presenters
	13.00-14.00	Lunch Break	
	14.00-14.10	Group Work Assignment	Moderator
	14.10-15.10	Group Work Session 1 - Break-out Rooms	Group Chairs
	15.10-15.30	Refreshment Break	
	15.30-16.30	Plenary 2 - Report Back from Groups	Group Rapporteurs
16.30-16.45	Wrap up of Day 1	Moderator	
18.00	Cocktail		
Tuesday, 4 <sup>th</sup> October	08.00-08.05	Sub-theme 2: Impact monitoring and evaluation; Environmental sustainability - Introduction by Session Chair.	
	08.05-08.25	Paper 4: Rapid assessment of poverty impacts (RAPI) methodology: Lessons from the field application in Ethiopia.	T. Mengesha; K.O. Bonsu
	08.25-08.45	Paper 5: Impact monitoring and evaluation.	S. Mambo
	08.45-09.05	Paper 6: Integrating Labour Based Methods in Environmental Management for RAR.	S.O. Kasuku
	09.05-09.25	Paper 7: Labour-based approaches - Are these good vehicles driven by mechanics?	D. Ongewe
	09.25-09.40	Comments/questions from the floor/Reactions from Presenters	All Presenters
	09.40-09.45	Group Work Assignment	
	09.45-10.45	Group Work Session 2 - Break-out Rooms	Group Chairs
	10.45-11.00	Refreshment Break	
	11.00-11.45	Plenary Session 4- Report Back from Groups.	Group Rapporteurs
11.45-11.50	Sub-theme 3: Training, Research and Development - Introduction by Session Chair.		
11.50-12.10	Paper 8: Fighting poverty through the delivery of essential and quality assets.	D. Sahle, G. Morosiuk, K. Mukura & T. Greening	
12.10-12.30	Paper 9: Implementation of the SADC Guideline for Low Volume Sealed Roads on Labour-based Projects in Limpopo Province, South Africa.	J. Hongve & P. Paige-Green	

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Day and Date	Time	Activity	Paper Presenter/Responsibility
	12.30-12.50	Paper 10: Labour-based macadam black top surfacing	J. Hattingh, RT. McCutcheon
	12.50-13.00	Comments/questions from the floor/Reactions from Presenters	
	13.00-14.00	Lunch Break	
	14.00-14.20	Paper 11: Roads 2000 Training Programme-Kenya	H. Orwa;
	14.20-14.30	Comments/questions from the floor/Reactions from Presenters	
	14.30-15.30	Group Work Session 3 - Break-out Rooms	Group Chairs
	15.30-15.45	Refreshment break	
	15.45-16.45	Plenary Session 6- Report Back from Groups	Group Rapporteurs
	16.45-17.15	Plenary Session 7- Brief on Site Visits: MRPW & Bamburi	MRPW/Eric Goss
	17.15-17.30	Wrap up Day 2	Moderator
Wednesday, 5 <sup>th</sup> October	07.00am	Site Visits- Kilifi and Mombasa	
		Lunch at Mnarani Club	
	P.M.	Excursion- Bamburi Haller Park	
Thursday, 6 <sup>th</sup> October	08.00-09.00	Group Work Discussion on site visits	Group Rapporteurs
	09.00-09.45	Plenary Session 8- Report Back from Site Visits	Group Rapporteurs
	09.45-09.50	Sub-theme 4: Policy and up-scaling; Sustainable financing and resource allocation - Introduction by Session Chair.	
	09.50-10.10	Paper 12: Labour resource use in infrastructure: From policies to large-scale action.	J. de Veen
	10.10-10.30	Paper 13: Roads 2000 Road Maintenance Strategy in Kenya: A case for sustainable financing and resource allocation	E. Goss
	10.30-10.45	Refreshment break	
	10.45-11.05	Paper 14: Land and property acquisition and compensation in road projects - Assessment from pro-poor perspectives of policies and practice.	S. Sharma & L. Subedi
	11.05-11.25	Paper 15: Designing an upscaled programme and process for Enterprise, Employment & livelihoods in Post-War Somalia	G. McCarthy, J Connolly, M. Terellen
	11.25-11.45	Comments/questions from the floor/Reactions from Presenters	
	11.45-12.45	Group Work Session 4 - Break-out Rooms	Group Chairs
	12.45-14.00	Lunch Break	
	14.00-15.00	Plenary Session 10- Report Back from Groups	Group Rapporteurs
	15.00-15.30	Summary Comments/Wrap Up on All Papers and Group Discussions	
	15.30-15.45	Refreshment break	
Friday, 7 <sup>th</sup> October	15.45-17.30	Plenary Session 11- A Regional Seminars Review-From Maputo to Mombasa, Review of Arusha Statement, Progress; Points for Draft of Mombasa Statement.	ILO/ASIST (G. Sibanda)/HOST
	17.30-17.45	Wrap up Day 4-Moderator	Moderator
	19.00	Seminar Dinner at Ngomongo village	
	08.00-08.15	Introduction by Moderator	Moderator/Rapporteur



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<b>Day and Date</b>	<b>Time</b>	<b>Activity</b>	<b>Paper Presenter/Responsibility</b>
Friday, 7 <sup>th</sup> October	08.15-10.00	Final Plenary Session 12: Discussion on the Role of the seminar and the way forward; Mombasa Statement	Moderator
	10.00-10.30	Refreshment Break	
	10.30-11.30	Final Plenary Session 12 (cont): Expression of interest and voting for next seminar host	Moderator
	11.30-12.40	Closing Session	
	12.40	Lunch Break	
		Participants leave at their own pleasure	

## 11.3 Annexure 3: Site Visits

The site visits provided an opportunity for participants to see case studies of labour-based approaches to road construction and maintenance works. The participants were briefed on the various sites to be visited and each participant was provided with handouts which contained technical details regarding the sites to be visited. Six road sites were visited as follows:

### 11.3.1 Mombasa District Site

#### 11.3.1.1 Site 1: Improvement of Vikwatani – Mtopanga Road to Gravel Standard

**Location:** Vikwatani-Mtopanga road is situated to the North of Mombasa island in Kisauni Constituency. It joins Vikwatani Centre (on Road E930) to Mtopanga (on Road E949).

**Economic Activity:** The district is well known for its tourist attraction of sunny sandy beaches, historical sites and rich bird species. Tourism is its major economic activity. Food crops are grown together with rearing of cattle, sheep and goats.

**Prioritization:** Mombasa district receives approximately 20 million Kenya shillings (\$267,000) for maintenance of its feeder roads annually. This is divided equally between its four areas of parliamentary representation (constituencies). Vikawatani – Mtopanga road is in Kisauni constituency.

Each constituency has a roads committee, which identifies its road maintenance needs and under the guidance of the District Roads Engineer, lists them in order of priority. It is through this process that this road was identified for improvement.

**Procurement:** After identification, prioritization and allocation of funds, the procurement process was initiated. It was decided to use labour-based methods due to the following reasons:

- (i) The road is in the densely populated area where labour is readily available;
- (ii) The road reserve is encroached by human settlement making it difficult for earth equipment to manoeuvre properly;
- (iii) Need to transfer skills and create employment for the locals.

The district lacks local labour-based contractors as it was not involved in the Danida aided programme that trained contractors in neighbouring districts. Therefore it was decided to pre-qualify a few contractors (5 No.) from the annual tender for supply of goods and services and ask them to quote for the works and employ technical personnel who are well trained in labour-based methods. A contract document previously developed in the Danida aided project was adopted for these works.

The annual district tender was used for procurement of gravel, spreading and compaction. Coral gravel from Bamburi borrow pit was being used. Due to the nature of the gravel, a heavy compaction roller was being used.

Gravelling was expected to cost Kshs. 1,485,000 (-US. \$ 19,800) for the 1.5 km stretch. This is Kshs. 990,000 per km (- US \$ 13,200).

**Standards:** Due to the limited road reserve available and the need to avoid compensation and demolition of existing structures, it was decided to adopt a reduced cross-section with a carriageway width of 4.5 m (as opposed to 5.4 m).

However, this could still not be fitted in some areas and had to be reduced further to 4.0 m.

**Employment Creation:** It was expected that the earth road improvement would create 1500 person days out of which approximately 50% would be women. The direct wage component at Kshs.200 per person day was Kshs.300,000 (-US\$4000). This is 53% of the earth road improvement cost and 15% of the total improvement cost (including gravelling).

## Project Data

- (i) Name: Improvement of Vikwatani – Mtopanga road;
- (ii) Contractor: Dry Dock Suppliers;
- (iii) Supervision: Chief Engineer (Roads)
- (iv) Engineer Representative: District Roads Engineer Mombasa;
- (v) Scope of works: Drainage Improvement, Camber formation and provision of 120 mm thick gravel surfacing;
- (vi) Project cost: Improvement cost is Kshs.1,755,000 (~ \$23,400)  
Gravelling cost is Kshs. 1,485,000 (~US\$ 19,800);
- (vii) Road length: Phase 1: 1.5 Km.  
Phase 2: 0.5 Km.

## Methodology

Improvement activities:

- (i) Setting out: Centre-line was established by using ranging rods;
- (ii) Bush clearing: This activity was normally carried out over the width of improvement plus 1-2 m on either side;
- (iii) Stripping and grubbing: This activity included the removal of all grass, upper grass root and other vegetation remaining after bush clearing (except trees) over the width to be taken by the earthworks;
- (iv) Tree and stump removal;
- (v) Slotting excavation of level: A sample cross section of the road was constructed as a guide at intervals of 10 m. This formed a guide to the excavation process;
- (vi) Excavation to level: The slots acted as a guideline for the excavation and filling of each 10-metre section of road between two slots to achieve a level terrace. The terrace is a platform on which to build up the road camber and drainage in an accurate and controlled manner. Jembe or forked hoes, mattocks, pickaxes, shovels, spreaders/rakes, hand hammers, wheelbarrows and hand rollers may be necessary for the excavation and filling operations;
- (vii) Ditching;
- (viii) Spreading;
- (ix) Sloping;
- (x) Back sloping;
- (xi) Camber formation;
- (xii) Mitre drain: Mitre drains lead the water away from the side drains to the adjoining land. This must be achieved, without causing erosion at the discharge point;
- (xiii) Scour checks: These were provided where longitudinal drain gradients were steeper than about 4%. Side drains: The side drains are essential for collecting the water from the carriageway and adjoining land and transporting it to a convenient point of disposal. The material excavated from the ditch was used to form the road camber. The shape of the ditch and slope excavation was controlled with templates.

## Actual Progress

During the site visit, the following had been achieved:

- (i) Approximately 700 m of earth road improvement had been completed (-50%);
- (ii) About 30 persons were employed every day half of whom were women. This was approximately 700 person days as of that date.

## Challenges

Some unique problems had been experienced on this project, namely:

- (i) Payment of casuals has had to be done every day because being an urban area, they

needed the money to buy food and other essentials on a daily basis as opposed to the rural areas where casuals could wait for a month;

- (ii) Inadequate road reserve had resulted in minor demolitions;
- (iii) Wastewater from houses had to be dealt with after seeping onto the road.

### **11.3.2 Sites in Kilifi District**

The district has a total population of approximately 600,000 people who earn their livelihood from a mixture of fishing, tourism and farming activities. Poverty levels in Kilifi are below the Kenyan average with the poorest constituency in Kenya lying in Kilifi district.

The road network consists of a total of 1080 kms of classified roads as well as numerous unclassified tracks that have not been quantified. Out of these, only 140 kms is paved road (Class A, B and C roads). The balance of 940 kms consists of gravel and earth roads. The entire network was severely damaged during the 1997 El-Nino rains resulting in less than 30% being in a good maintainable condition.

Rural roads in Kilifi have over the years been improved through the Rural Access Roads, Minor Roads and Roads 2000 Programmes. The latest support was the Roads 2000 Coast project from 1999 to 2003 supported by DANIDA, which assisted the district in improving the condition of the network from 30% to the current 65% of the network in a good maintainable condition.

Part of the Roads 2000 project consisted of the training of twenty eight small-scale maintenance contractors, out of which six were women. During the visit twenty one of these contractors were still working in the district, including four women.

The road works were all funded through the Government of Kenya, fuel levy fund administered by Kenya Roads Board.

The following sites were visited in the district:-

#### **11.3.2.1 Site 2: Road B8 – Mtwapa to Kilifi (length 40 kms)**

The Mombasa-Malindi road (B8) is a heavily trafficked trunk road linking Mombasa to Kilifi, Malindi, Lamu, Garsen and Garissa. The road was due for rehabilitation. Holding maintenance-pothole patching was being carried out by the Provincial Roads Engineer until funds are made available for rehabilitation.

Despite the poor condition of the carriageway, traffic moves at high speed and the rapid growth of roadside bushes due to the high rainfall has been a constant road safety concern.

In order to clear the roadsides and at the same time create much needed employment, labour-based contractors were used to clear bushes and remove stumps for a width of 10 m. on either side of carriageway. Thereafter these contractors were engaged on a performance contract of one year to ensure that bush/grass did not grow above 30 cm.

The 40 kms stretch was divided into 4 sections, 10 kms each, with four different contractors awarded.

## Scope of Works and Average Cost Summary

Total cost Kshs. 2,492,112.50 (US\$ 33,000) structured as follows:

Activity	Cost (Kshs)	Rate
Initial bush clearing and removal of stumps	1,692,112.50 (US\$ 22,500)	Ksh. 42,000 (\$560) per km
Performance contract to ensure no grass/ bush above 30cm level for a period of one year	800,000.00 (US\$ 10,700)	Ksh. 20,000 (\$270) per km per year.

### Employment Creation

The bush clearing of 40 kms of B8 was estimated to create 6,000 person days (pds) for the initial clearing and 2,500 pds for the subsequent performance contract. With a charge rate of Kshs 200 (2.6 US\$) per day the direct wage content was approximately Kshs 1.6 millions (US\$ 21,000)-65% of the contract value. The balance was for VAT, profit and tools.

A total of 200 labourers, out of which eighty five were women (42%) were working on the site for the initial clearing. For the subsequent performance contract it was estimated that approximately 40 laborers would be working part time on the road out which at least 50% were expected to be women.

#### 11.3.2.2 Site 3: Road RAR1 – Mkwajuni to Mazuka (length 7.4 km)

This was the fourth road in Kilifi district constructed under the Rural Access Road programme in 1982. It was graveled in 1983 and re-gravelled in 1993 under the Minor Road Programme. All the works were executed by use of labour-based technology. Less than 50% of the gravel remains to date but since funds were not available for re-gravelling and considering the sandy soils and low traffic, the road was routinely maintained by a combination of towed grader and small-scale contractor. The small-scale contractor was contracted to do off carriageway activities, bush clear/grubbing, cleaning mitre and side drains, unblocking silted culverts and installation of scour checks.

The towed grader was used to reinstate road camber once a year. A towed grader, manufactured locally (in Nakuru), and a tractor with adequate power to tow were the only equipment required. Skilled operators were used to operate the combined system.

Costs are as in table below:

Activity	Cost (Kshs)	Rates
Towed grading by FA	70,000 (\$933)	10,000(\$126) per km
Off carriageway routine maintenance by SSC	248,000 (\$3,307)	33,000 (\$447) per km/year

## **Employment Creation**

The combined grading and labour routine maintenance was estimated to create 800 pds with a rate of Kshs 200 (US\$ 2.6) per day. The direct wage content was approximately Kshs.160,000 (US\$ 2,100) – 50% of the contract value or 65% of the labour contract.

A total of 20 labourers, out of which 8 were women (40%) were working on the site.

### **11.3.2.3 Site 4: Road D556**

#### **Soil Conservation at Ng'ombeni Area.**

This important road, serving one of the most productive agricultural areas in Kilifi, was improved through a gravelling project in the mid 1980's. The road had subsequently been maintained through routine maintenance and spot improvements such as culvert lines and spot gravelling.

Installation of cross culverts had resulted in massive erosion on the lower catchment which had a steep gradient and scanty vegetation on the fine non-cohesive soil.

Control measures were developed, laying a lot of emphasis on use of locally available resources, (labour, stones, wood) to mitigate the problem. A soil conservation manual was developed from the pilot project but the contents of manual had unfortunately not been disseminated fully. Using this manual, the developed control measurers were used to mitigate against this environmental degradation.

The construction was carried out by roads department personnel. (No contractors have been yet been trained in Kenya on gully healing).

## **Employment Creation**

The gully protection works created 350 Pds with a wage rate Kshs 200 (2.6 US\$) per day the direct wage content was approximately Kshs 70,000 (US\$ 900)-30% of the total cost. A total of 25 laborers, out of which 10 were women (40%), were working on the site.

## **Recommendation**

In the pilot project, it was established that the cost of healing a gully was approximately 6 times the cost of creating an artificial waterway. It was therefore recommended that during improvement/ construction of any road, it would be desirable to create artificial waterways in culvert outlets road reserve rather than waiting for the formation of a gully that would be very expensive to heal.

### **11.3.2.4 Site 5: River Training and Gabion Protection Works at Mitangoni Bridge**

During the 1997 El-Nino floods, the river course changed damaging the road embankment. Instead of just installing gabions, it was decided to carry out river training upstream first and then protect the road embankment.

The contract for the river training was awarded to a small-scale contractor. In order to hasten the works before the looming rains, the contractor hired a light excavator/backhoe to dig the channel. Labour was then brought in to complete the widening and landscaping of the river channel.

After the completion of the earth works, gabion boxes were to be installed to protect the bridge abutment and the road in case of run-off building up during flash floods. Total estimated cost was Kshs 850,000 (\$11,300).

Activity	Cost (Kshs)	Rates
River training – Machine based	320,000 (\$4,200)	Approximately Kshs 1000(\$1.4) per m <sup>3</sup> excavation and disposing of material
River training-Labour based	170,000 (\$2,300)	Approximately Kshs 150 (\$2) per m <sup>3</sup> excavation and disposing of material.
Installation of gabion boxes 60 m <sup>3</sup>	360,000 (\$4,900)	\$60 per m <sup>3</sup>

### Employment Creation

The river training/protection works was estimated to create 550 Pds, and with a wage rate of Kshs 200 (2.6 US\$) per day, the direct wage content was approximately Kshs 110,000 (US\$ 1500)-13% of the total cost.

#### 11.3.2.5 Site 6: Road C107 – Light Grading

Kaloleni-Mavuani section was to be light graded using a motorized grader and small-scale contractor to execute off carriageway activities.

Total costs Kshs 1,237,500 (\$16,500)

Activity	Cost (Kshs)	Rates
Light grading	900,000 (\$12,000)	\$400 per km
Off carriageway routine maintenance by SSC	337,500 (\$4,500)	\$ 150 per km

### Employment Creation

The off carriageway routine maintenance works was estimated to create 1100 pds. With a wage rate of Kshs 200 (2.6 US\$) per day, the direct wage content was approximately Kshs 220,000(2,900 US\$)-18% of the total cost.

#### 11.3.3 Visit to Haller Park

Participants had the opportunity to visit Haller Park which has been developed by the Bamburi Cement Company (Lafarge Eco Systems). The Bamburi company mines coral limestone for the manufacture of cement and rehabilitates the quarry sites. Through a professional and scientifically integrated environmental management project the quarries have been converted into a beautiful forest park with fauna and flora and accompanying species of the animal kingdom.

## 11.4 Annexure 4: Opening and Closing Speeches

### 11.4.1 Welcome by Ali Ibrahim, ILO Director, Area Office

The guest of honour, Hon. Eng. Raila Odinga, Minister of Roads and Public Works  
Assistant Minister for Roads, Hon. Eng. Joshua Toro  
Permanent Secretary, Ambassador Eng. Mohammed Mohamoud  
Fellow ILO Colleagues  
Participants  
Distinguished Guests  
Ladies and Gentlemen

It is once again a great honour and pleasure to address this gathering of labour-based practitioners. I wish to congratulate and sincerely thank the government of Kenya for hosting this important event. It is two years since many of you gathered in Arusha, Tanzania to review labour-based approaches, and share knowledge and experience. Much has changed since then but much remains to be done. Poverty levels still remain high, especially in Sub-Saharan Africa, where growing numbers of people have failed to find productive employment opportunities, agriculture has stagnated, and HIV/AIDS has taken a brutal toll on people in their most productive years.

Progress towards the Millennium Development Goals set out by different African countries is slow and worrying, and it is becoming increasingly clear that at the current pace of development Africa will not reach the MDGs of having populations living in extreme poverty by 2015. Yet, there has been much to celebrate! The last two years have heralded major historical events and brought new hope and opportunities for Africa. Nascent peace in nations torn apart by decades of conflict and internal strife and the signing of peace agreements and installation of transitional governments in Sudan, Somalia and Liberia, brings new hope and opportunity. It also brings the challenge of reconstruction, reintegration and economic recovery.

Recent times have also seen unprecedented commitments by African leaders to spur the fight against poverty. Leaders of African Union Member States during the Extra Ordinary Summit for Poverty Reduction and Employment in September 2004 committed to place employment creation as an explicit and central objective of economic and social policies within the context of Poverty Reduction Strategies and the New Partnership for Africa's Development (NEPAD) to achieve the Millennium Development Goals (MDGs). African leaders recognized that creating, productive and decent employment is one of the most effective routes to alleviate poverty and empower people. They defined a number of priorities which included youth employment and a focus on sectors with high employment potential, i.e. infrastructure, agriculture and rural development, environment conservation and transport. They furthermore called for the promotion of public work programmes in infrastructure development, promotion of public and private sector reform for employment creation and the creation of productive labour absorbing jobs through labour-intensive approaches.

The New Partnership for Africa's Development (NEPAD), the Commission for Africa and the World Bank all recommends greater investment in infrastructure in Africa, to move all its populations out of the realms of abject poverty and into wealth and prosperity. In its report of March 2005, the Commission recommends an additional investment of USD 20 billion a year particularly in agriculture focusing on rural access roads and irrigation; rural development, urban upgrading, natural resource conservation. It further notes that public sector investment, i.e. in road building; slum upgrading and irrigation have positive effect on employment that can be integrated into national poverty reduction strategies. The World Bank has recommended that in order for Africa to meet the MDG's 3-5% of GDP should be spent on infrastructure.

At the same time Africa Governments and civil society have been at the forefront of the global effort to meet the Millennium Commitments on decent and productive work for young people. Seven African countries have stepped forward as lead countries in the UN Secretary-General's



Youth Employment Network, and reports from Kenya, Uganda and Tanzania are analyzed in a new report on youth employment issues by the Secretary-General which will be discussed this week by the General Assembly in New York<sup>1</sup>. In this report, Kofi Annan writes that “employment creation should be a central goal – not a by-product – of government policies for investment and economic growth”, and governments have reported favourably on “increasing the employment impact of infrastructure investment policies, including through labour-intensive public works”. Youth employment has become a growing political priority of Governments within the region and it is the business of us all, not just of labour ministries. The Secretary-General furthermore recommends that focusing our efforts over the next ten years on decent and productive work for young people gives us our one best shot at meeting all the Millennium Development Goals by the year 2015. I encourage you all to support your governments in their ongoing process of developing and implementing national action plans on youth employment, as agreed in two UN General Assembly Resolutions<sup>2</sup>, and to help ensure that your programmes and experience on labour-based infrastructure development figure prominently in such plans as a means of jump-starting national efforts for youth employment.

The writing is clearly on the wall – greater investment in infrastructure has been clearly singled-out as a means to spur growth and move Africa out of poverty. But such investment will only impact on poverty if it enables growth with equity – growth with jobs! Optimizing the employment opportunities in these investments through employment-intensive approaches therefore present a key route to channel such investment.

In all this, I hear a direct call to action to all labour-based practitioners, to all of you sitting here. I hear a call to bring your specific knowledge, skills, capacities and networks to bear, to contribute to the realization of these commitments. And I view your deliberations here this week as a contribution to this process, as it triggers new thoughts, ideas and leads to positive actions and impacts.

The ILO has for many years worked with member states to develop, expand and mainstream the application of labour-based approaches in infrastructure development. It would be wrong to omit to mention that it is the Minor and Rural Access labour-based roadwork’s programmes in Kenya, in which the ILO was involved, that triggered much of the piloting of labour-based approaches in Africa. Indeed, the demand to replicate the success resulted in one of the establishment (with financial support from the governments of Switzerland, Sweden, Norway and Denmark) of one of the ILO’s flagship employment-intensive investment programmes that you have all come to know so well, ASIST – Advisory Support Information Services and Training! ASIST has been at the forefront of promoting labour-based technology and expanding its application into new sectors and environments. These regional seminars were borne out of the need expressed by practitioners in the region to share knowledge and practice and have provided a valuable forum for this that the ILO is proud to be part of.

ILO is happy to be associated with the Government of Kenya’s work to fully integrate the labour-based approach into its road sector policy and strategy, as illustrated in the Roads 2000 Strategy. The strategy, which you will hear more about from our Host this week, involves labour-based approaches and working in partnership with the local small scale contractors.

I believe it is not only the ILO, particularly the ASIST Programme, but all of the practitioners here feel greatly privileged to be here in Kenya, the “home” of labour-based roadworks for this 11<sup>th</sup> Regional Seminar!

Labour-based or employment-intensive approaches have been piloted, adopted and expanded as delivery approaches for infrastructure across several Africa and other developing countries because of the positive impact on socio-economic development they render beyond the infrastructure asset created. Studies on the impact on socio-economic development in several countries including Ethiopia, Kenya, Mozambique, South Africa Tanzania and Uganda demonstrate short, medium and long term socio-economic benefits such as:

- 
- (i) Up to 30% savings when compared to equipment-based approaches; which enables higher delivery and maintenance rates of basic infrastructure assets and services essential for socio-economic development for the same level of investment;
  - (ii) Creation of up to four times more jobs than equipment-based approaches;
  - (iii) Vital income distribution effects through the injection incomes with the immediate effect of increasing purchasing power, stimulating local enterprise and economies and improving living standards.

In nations coming out of conflict, the use of such approaches in the massive investment in infrastructure reconstruction and rehabilitation which are an essential prerequisite to economic and social recovery offer opportunities for employment creation, social reintegration, and the stimulation of local socio-economic development – as witnessed in Mozambique and Somalia.

Investments in infrastructure at present account for between 40- 60% of national public investment budgets in developing countries and is likely to grow. The challenge is to upscale employment-intensive programmes, integrate them into socio-economic development and poverty reduction strategies. The successes of past and current programmes and initiatives can be mainstreamed so that employment opportunities in infrastructure investments are optimized. To do so, policy and institutional frameworks, resource allocation mechanisms, implementation capacities, skills and knowledge must be developed. Mechanisms to monitor and sustain progress and the positive impact on socio-economic development and poverty reduction need to be established.

The ILO is committed to this process. Employment-intensive investment programmes are central to the ILO's Decent Work Agenda which provides us the ones best means for working out of poverty. I am privileged to be part of this gathering. I wish you success in your deliberations and trust that by the end you will be filled with enthusiasm, new ideas and energy to forge ahead.

## **11.4.2 Welcome by Amb. Eng. Maalim M. Mahamud, Permanent Secretary, Ministry of Roads and Public Works.**

Hon. Minister,  
Hon. Assistant Minister,  
ILO Director for East Africa  
Distinguished Guests  
Seminar Participants,  
Ladies and Gentlemen

I take this opportunity to welcome you all to the 11<sup>th</sup> Regional Seminar for labour-based practitioners.

The seminar brings together practitioners, planners, policy makers, researchers, development partners and various stakeholders in infrastructure sector.

The 10<sup>th</sup> Regional Seminar for labour-based practitioners was held in Arusha from the 13<sup>th</sup> to 17<sup>th</sup> October 2003 under the theme "Labour-based Technology for Poverty Reduction". The objectives were to investigate the impact of labour-based technology on poverty, collate an evidence base and identify ways to maximize labour-based technology.

The recommendations of the 10<sup>th</sup> Regional Seminar required the regional partners to:

- (a) Implement relevant policies that will guide the mainstreaming, diversifying and maximizing the use of labour-based technology and ensure sustainability of the same;
- (b) Create institutional frameworks for policy operationalisation and monitoring;
- (c) Put in place appropriate legislations that will guide procurement procedures and that will enhance engagement of labour-based technology and labour standards;
- (d) Develop appropriate contractual framework suitable for contracting labour-based technology works;
- (e) And finally to put in place schemes that will promote the use of labour-based technology.

The 11<sup>th</sup> Regional Seminar therefore seeks to review progress towards that direction. It also aims to encourage sharing of knowledge and experience on the innovative application of integrated labour-based approaches to infrastructure development that result in sustainable wealth creation.

It may be important to note that the East Africa sub-region is keen to utilize employment intensive and community managed approaches to infrastructure development. For instance, we are prioritizing labour-based cost effective method using local resources to maintain the classified road network at an economic level of sustainability in Kenya.

It is also in the policies of the three partner states of EAC to create an enabling environment for private sector participation in order to enhance its employment creation capability.

Our experiences in infrastructure development have shown that if an enabling environment is created and careful choice of technology is made, such an investment can produce significant and measurable socio-economic benefits particularly more jobs.

The socio-economic advantages of integrated labour-based approaches include employment creation, local capacity building, local economic development, savings and cost reductions.

The use of labour-based methods in the rehabilitation, construction and maintenance of infrastructure can create a critical link between the poor communities, market and services.

To enable focused knowledge sharing and deliberation on the theme of the seminar, concept papers will be presented with sub-themes covering both rural and urban set up.



The seminar is therefore expected to come up with practical workable recommendations to the problems of labour-based practitioners particularly in the infrastructure sector.

In addition, you will all have the chance to visit relevant sites as showcases.

With these few remarks, I wish to call upon the Minister for Roads and Public Works to make his speech and officially open the seminar.

Thank you.

### **11.4.3 Formal Opening Address by Hon. Eng. Raila Odinga, Minister for Roads and Public Works, Kenya**

ILO Director for East Africa  
Seminar Participants  
Distinguished Guests  
Ladies and Gentlemen.

I am indeed delighted to be with you this morning to preside over the official opening of this 11<sup>th</sup> Regional Seminar for labour-based practitioners in support of the use of labour-based technology. This gathering provides an ideal opportunity for us to examine and appreciate the role of labour-based methods in the development of infrastructure to improve the economy.

I am also glad to note that this regional seminar brings together practitioners, planners, policy makers, researchers, development partners and the various stakeholders involved in the infrastructure development.

We are gathered here today and for the rest of the week in order to share ideas on this very important area of our economy.

It is important to mention that the use of labour-based methods by any country means increased use of local resources in an economically efficient and sustainable manner. The approach is economically competitive when compared with the existing alternative equipment-based methods.

I wish to underscore the role of the infrastructure sector in transforming the growth of Kenya's economy and its contribution in poverty reduction by creating employment opportunities for our people. With the majority of the Kenyan population residing in the rural areas, improving rural transport infrastructure is an essential component of the economic development and poverty reduction.

Ladies and Gentlemen:

The use of this technology for road works has been an important aspect of the strategy to improve rural transport infrastructure in Kenya for the past 30 years. This technology produces not only quality gravel roads equal to roads made by equipment-based methods but it can also be used to generate rural employment in a cost effective manner.

It is also worth noting that Kenya, being a major tourist destination requires a functional infrastructure. Over the last two years, Kenya has earned over 300 million US Dollars from the sector. This makes tourism the second most important foreign exchange earner after horticulture. This contribution is more significant when you factor in the number of people employed in our hotels and lodges serving in the sector as well as other forward and backward linkages generated through service provision to the sector. With such huge returns from the tourism sector, the government has to move an extra mile to improve roads leading to tourist destinations.

In addition, agricultural sector in Kenya is flourishing and perhaps it should be possible to tap into and use hand tools and equipment produced locally for agriculture. This kind of arrangement will reinforce the amount of investment which remains in the locality of the works, and reduced the reliance on costly imports.

Ladies and Gentlemen:

I am pleased to inform you that our government attaches great importance on development of physical infrastructure to enhance faster economic development. The government has also fully embraced the labour-based approach in its economic recovery strategy for wealth and employment creation.

We are also happy to have collaborated with the International Labour Organization (ILO), in organizing this important seminar. We recognize ILO for its continuous support to the member states in optimizing employment potential of investments in infrastructure.



The effort being made by ILO worldwide is something worth noting especially in their endeavour to promote the use of labour-based methods in public investment programmes.

Through support from ILO, the Swiss Development Corporation (SDC) and the Swedish International Development Cooperation Agency (Sida), the government in the early nineties started the first national and international courses for labour based roadworks at the Kisii Training Centre (KTC). I particularly thank the ILO for their continued support for KTC in curriculum development and quality control for many years.

The Roads 2000 Strategy was formulated as a network approach to the rehabilitation and maintenance of roads using labour based methods whenever these were cost effective. This approach now covers 37 out of 72 districts in this country.

Various development partners have agreed to provide support in the implementation of the Roads 2000 Programme in these districts. Some of these development partners are Germany, France, Africa Development Bank (ADB), Swedish International Development Agency (Sida) and European Union (EU). The above development partners have pledged a total of Kshs. 6.241 billion in the next five years. My government will contribute Kshs. 1.468 billion as counterpart funds in the same period.

In view of this, the Roads 2000 Strategy fits well within the country's economic recovery strategy for wealth and employment creation (ERS).

Ladies and Gentlemen:

My ministry plans to improve the major roads in the country especially those that link Kenya to the neighbouring countries. A good example, among other major roads planned for improvement, is the northern corridor transport improvement programme, which includes the rehabilitation of the Mombasa-Nairobi-Malaba corridor with financial assistance from the World Bank, European Union, the Nordic countries and the Government Kenya of about 275 million dollars (\$275 Million).

On economic recovery process, our government appreciates that its achievement is a challenging multi-disciplinary attempt and will endeavour to listen to all stakeholders in the different sectors of economic development. We will therefore welcome any recommendations towards achieving this noble goal.

I am optimistic that this seminar will address the issues that hamper the economic development of developing countries and make appropriate recommendations on the way forward.

Finally, ladies and gentlemen, I wish to thank you all for finding time to come for this 11<sup>th</sup> Regional Seminar and I hope you will find time to sample our tourist attractions during your stay in Kenya.

It is now my dutiful pleasure to declare this seminar officially opened.

Thank you.

#### **11.4.4 Key Note Address by Maria Stridsman, Head of Sida, Embassy of Sweden**

Minister for Roads and Public Works, Hon. Raila Odinga  
Workshop Participants  
Ladies and Gentlemen,

It is a great honour for me to participate in this important seminar that has brought together, from all corners of the world, professionals involved in addressing challenges in infrastructure through promotion of labour-based methods, thus simultaneously tackling poverty and promoting economic growth.

Let us start by asking ourselves this simple question: “What are the roads for?”  
Roads are for the people!

- ◆ To transport cash crops
- ◆ To go to hospitals
- ◆ To walk to school
- ◆ It helps social service to come closer
- ◆ It helps in creating business opportunities

The conclusion is as simple as the question, the roads are important to create wealth and to create a life in dignity.

Lack of roads – is indeed an underlying cause to lack of fulfillment of rights for men, women, girls, and boys.

Sida’s objective, like most other development partners, is to make it possible for the poor to improve the quality of their lives. It is the same objective independent of sector. We seek to achieve this by respecting human rights and by looking at things from the perspectives of the poor.

These are all nice and abstract statements. Does it really make a difference to look at things from the perspective of the poor?

Yes, it does. Two of my colleagues recently did a study on an integrated economic analysis of Kenya. They focused on employment, labour markets, business environment and macro economic policies. They found that policies in these areas were not pro-poor in Kenya, neither were they neutral.

They were pro-rich, pro-men, pro-urban.

Thereby, not only did they contribute to create an unequal society, they also hampered economic growth tremendously in Kenya.

- ◆ Poor people have competence
- ◆ Women have good ideas
- ◆ Poor people also have bright children

But if you have a policy environment that makes it difficult for these people to realize their visions, ideas, competence then you are making economic growth really difficult and no country can afford that.

Construction of roads has traditionally been highly technical, with little or no participation at all from local stakeholders in planning and implementation aspects.

As you have already understood, the focus of my speech will not be on how to build a road. Neither will it be on the technical requirements, hard-core inputs or otherwise. Instead, my focus will be on the human face of road construction.



You may ask yourself, why is this important? Isn't the main focus of this programme to build roads? Why should we focus on transparency, participation, equality and gender? Why discuss HIV/AIDS when discussing roads?

There are many reasons and I will give you the two main ones.

I have worked in Africa for seven years, and most of you are the experts on Africa and its development. However, I think that we all agree that Africa's problem in general, and in particular Kenya, has not been lack of good ideas, policies or strategies. For example, in Kenya there has not been a lack of good roads programmes. On the contrary, Kenya has always had excellent programmes, competent people, and lots of good policies.

But, they were never implemented. No good roads were built. Instead of focusing on the development of the country, the people in decision making positions have used their power to enrich themselves. Instead of developing the whole country, they accelerated the inequalities.

Today, Kenya is one of the MOST unequal countries in the world!

How did this happen? How can we ensure that it will never happen again?

We all know that it doesn't matter if we have a wonderful plan on how to implement the roads programme. If we can not hold people accountable, if the processes are not transparent, if you are not allowed to participate, the roads will most likely not reflect your needs, or maybe not even be built.

One answer is to create systems and structures where people can participate in the preparation, implementation and monitoring of the roads programme. Structures where government officials are held accountable, and where the ones responsible for the roads programme have to report back to the people. Mechanisms for complaints, access to information, and also being able to participate in these proceedings are key to development.

We have to find a balance between the outcome and the process, and then only can we achieve a sustainable result.

But then a sustainable result is not enough. In the past when we talked about development, we tended to talk about things. Today we know that development to most of us is much more than things. It is not to feel powerless, but to be able to make a choice and to have a voice.

Therefore, participation is not only a means to a sustainable output. It is a result in itself and people have a right to participate in issues that are important to their lives. Once we accept and understand that, then only can we start acting and planning accordingly.

To have versus to be...Charity or Right! There is a big difference between these two – and it pictures the kind of society we want to build.

The Kenyan programme "Roads 2000", has found a good balance between process and outcome, between technical and social issues. They have adopted a rights-based approach, which will have many benefits in all aspects of infrastructure delivery.

The many problems that have been encountered in the sector will not be solved in the traditional way of doing things. Effective adoption of transparency, fair play, and a participatory approach will go along way towards improving the development and management of infrastructure, while at the same time contributing to the advancement of society.

So the challenges to all engineers, technicians, development partners and decision makers is thus to broaden our knowledge and outlook on how best to integrate human rights with construction of roads. How to do this is a topic that I hope will be discussed here at this workshop.

Thank you.

### **11.4.5 Formal Closing Address by Hon. Eng. Joshua Toro, Assistant Minister for Roads, MRPW, Kenya**

ILO Director for East Africa,  
Seminar Participants,  
Distinguished Guests,  
Ladies and Gentlemen.

I am indeed pleased to be with you here this afternoon as we mark the end of this most important seminar, which I am very sure has achieved its objectives.

May I take this opportunity to thank you all for finding time from your busy schedules to join us and staying on during the entire seminar period.

My sincere gratitude also goes out to everyone who was involved in the preparations for this very successful seminar. We all know that bringing together such a distinguished gathering of labour practitioners requires a lot of personal commitment to duty to achieve the desired results. It is a tough undertaking and I once again thank the organizers for a job well done.

The Kenya government wishes to thank the participants of the 10<sup>th</sup> Regional Seminar held in Arusha, Tanzania in October 2003 for selecting Kenya as the host for this year's 11<sup>th</sup> Regional Seminar. It was always our dream even in the past years to host this seminar and today we appreciate that our dream became a reality.

I am glad at the level of interaction, discussion and debate that characterized this seminar. The sharing of informed ideas on labour issues is a clear indication that this region is committed to the socio-economic development programmes.

Ladies and Gentlemen.

My ministry takes this opportunity to assure the participants and coordinators of this seminar that the outcome of the deliberations made in this forum will be most useful towards adding to the gains which the Kenyan government has made in the development and application of labour based technology.

This seminar has come at an appropriate time when my ministry is in the process of re-carpeting and constructing roads throughout the country. I am most certain that the lessons learnt during this conference will be applied appropriately.

In addition, the rehabilitation of rural roads is one of the Kenya action towards which we can create the much-needed employment while at the same time supporting the productive sectors. It is through the creation of jobs that we can do away with poverty and improve the standards of living of our people. I can reassure you here that the Kenya government is fully committed towards making life better for our people through creating many jobs.

As I was going through the Arusha statement of 2003, I learnt that quite a number of resolutions were made. There were declarations too made on an enabling environment in order to maximize the use of labour-based technology and ensure sustainability of the same.

It was also agreed on the need for capacity building through education, research and advocacy for the purpose of awareness creation. The need for allocation of resources to local financing institutions that will ensure sustainable access of funds by labour-based practitioners was agreed upon.

It is now time that each of the countries represented at this conference reviews the steps it has made towards implementing the resolutions made in Arusha in 2003. We should be seen to be engaging in discussions which translate into improving the life of the common man and woman.

I encourage each one of you to keep on consulting one another so as to keep track of the



implementation and monitoring impending factors as the approach takes effect in the respective countries.

As I conclude my remarks, let me welcome you all once again to our tourist attraction areas which we now hope most of you have visited during your stay in the coastal region. You are welcome back to Kenya at any of your convenient time.

I also wish you all a safe journey back home and hope that you will carry a goodwill message to your various destinations.

With those few remarks, it is now my dutiful pleasure to declare this seminar officially closed.

Thank you.

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<sup>1</sup>Global analysis and evaluation of national action plans on youth employment: Report of the Secretary-General, United Nations, 9 July 2005, A/60/133.

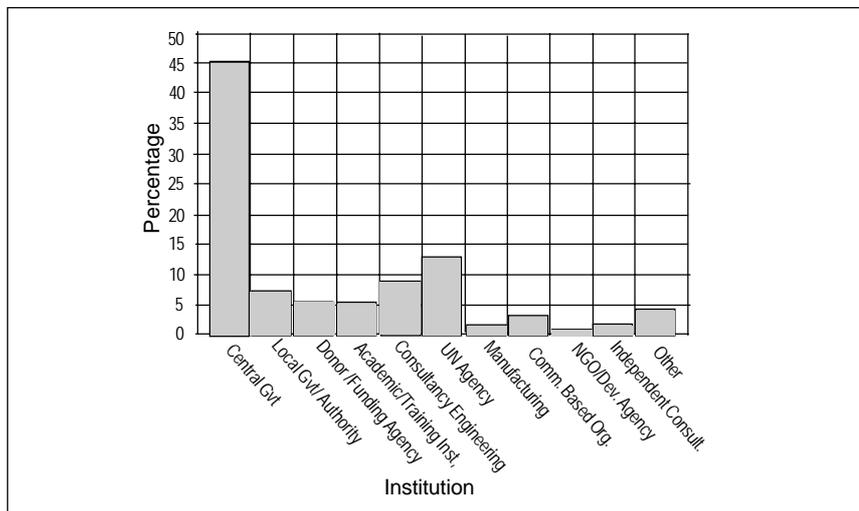
<sup>2</sup>Resolutions A/57/165 on “Promoting Youth Employment”, and A/58/133 on “policies and programmes involving youth”

## 11.5 Annexure 5: Seminar Evaluation

The following gives the results of the analysis of the answers to questions raised in the evaluation questionnaire.

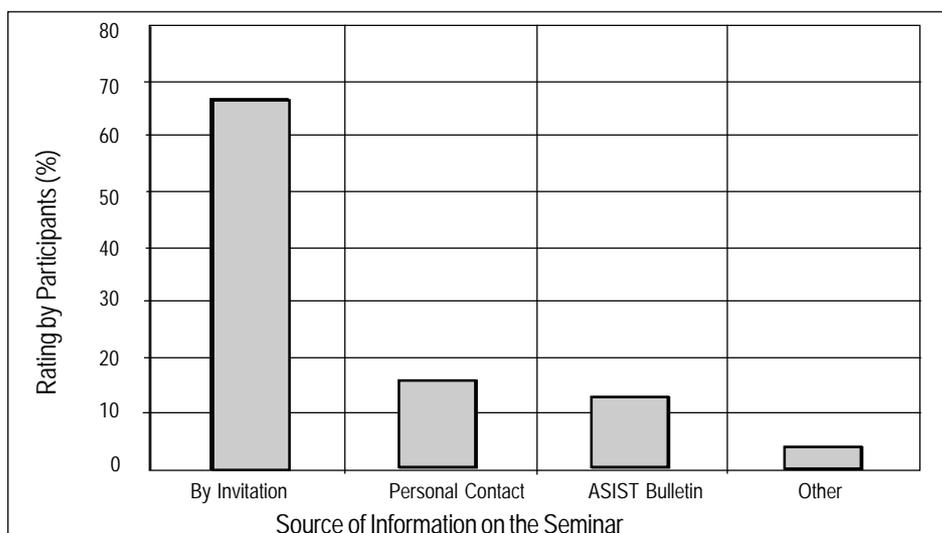
Q 1 *What type of institution do you work for?*

Institution	%	Institution	%	Institution	%
Central government	46	Consulting engineering firm	9	Community based organization	4
Local government/Authority	8	UN agency	13	NGO/Development agency	1
Donor/Funding agency	6	Manufacturing	2	Independent consultant	2
Academic/Training institution	6			Other	5



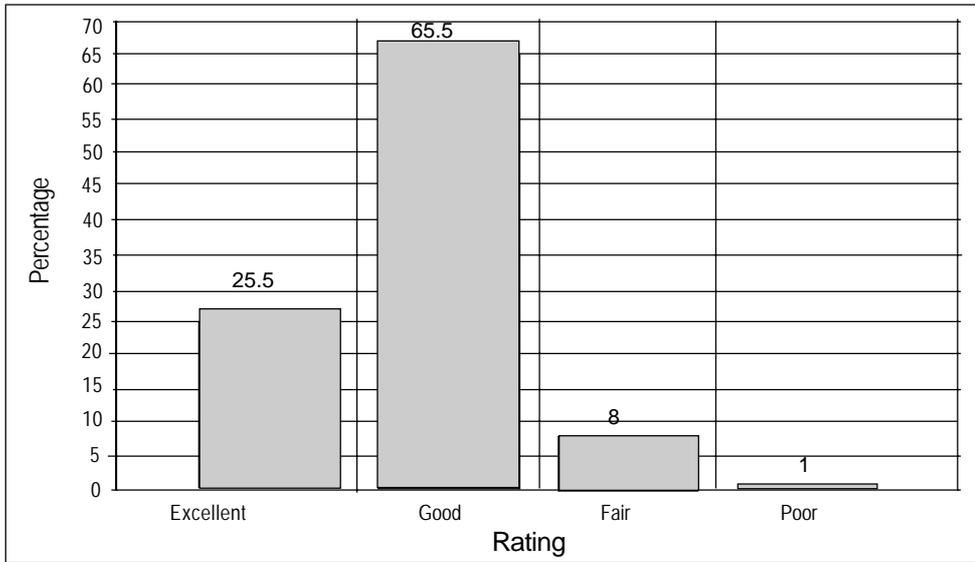
Q 2 *How did you learn about the seminar?*

By Invitation	67
Personal contacts	16
ASIST Bulletin	13
Press/Media	0
Other	4

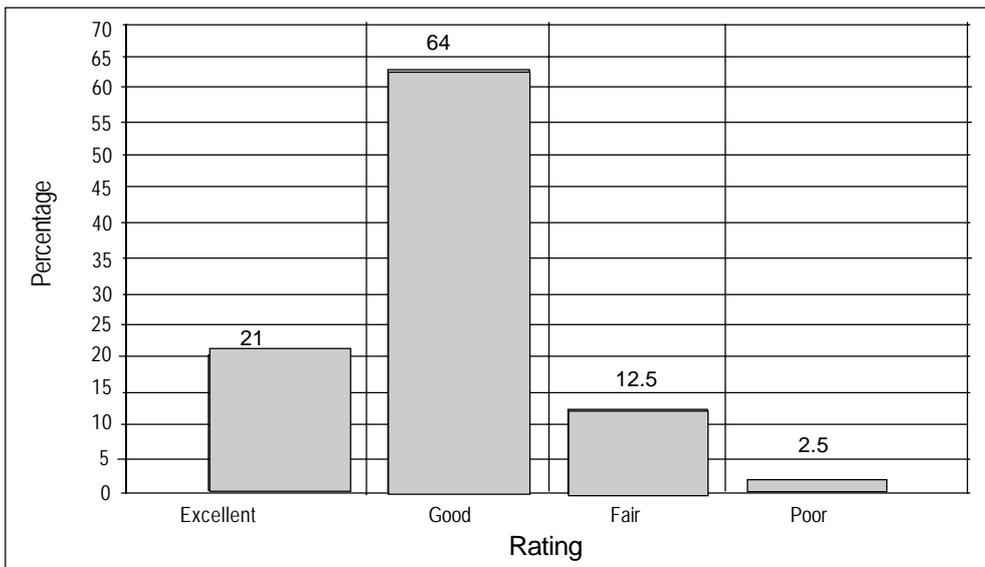


**Q 3 How would you rate the seminar organization?**

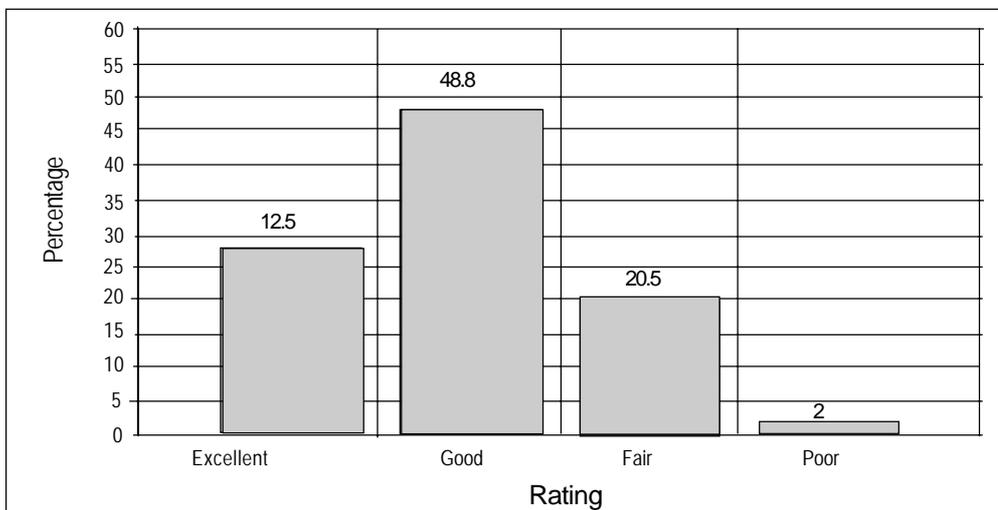
**3.1 In terms of the Papers Presented**



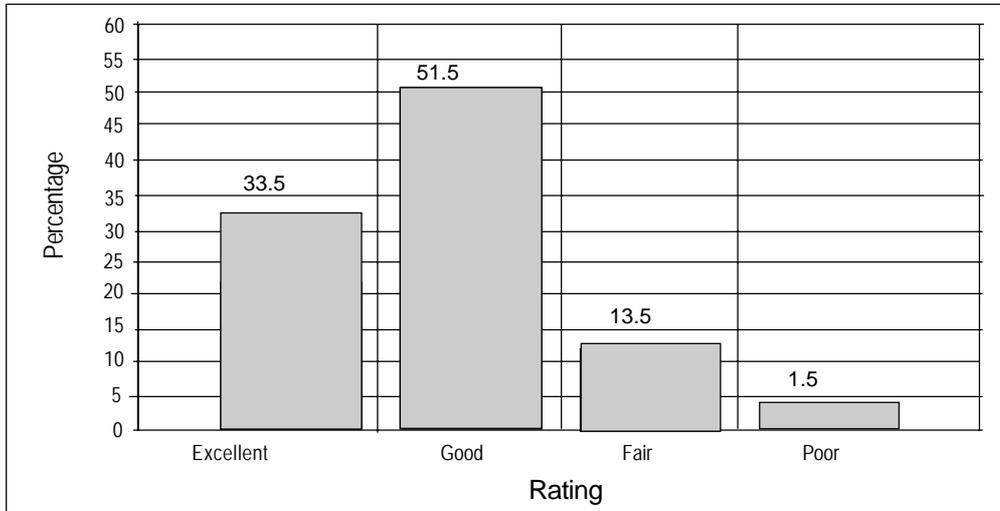
**3.2 In terms of the Plenary Sessions and Discussions**



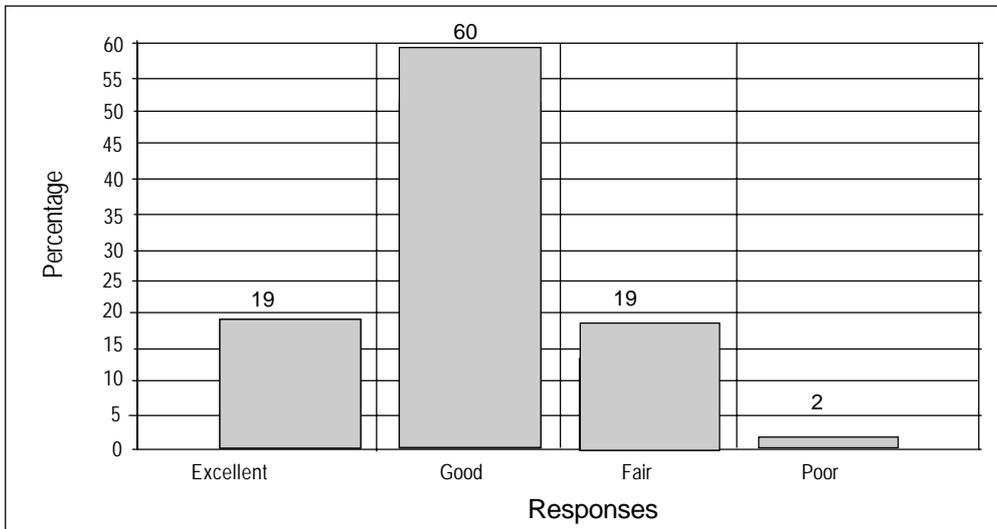
**3.3 In terms of the Facilitated Group Discussions**



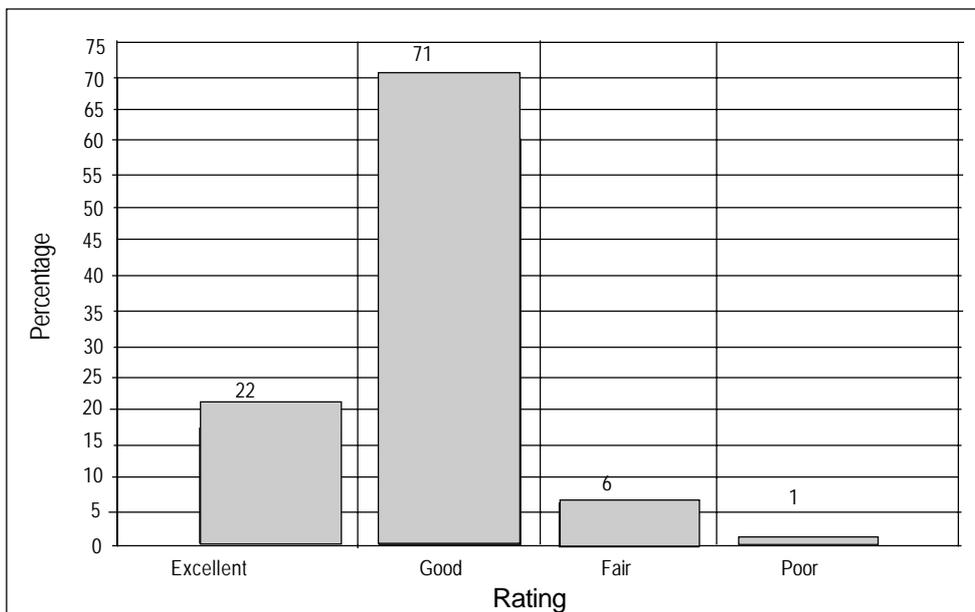
### 3.4 In terms of the Field Trips



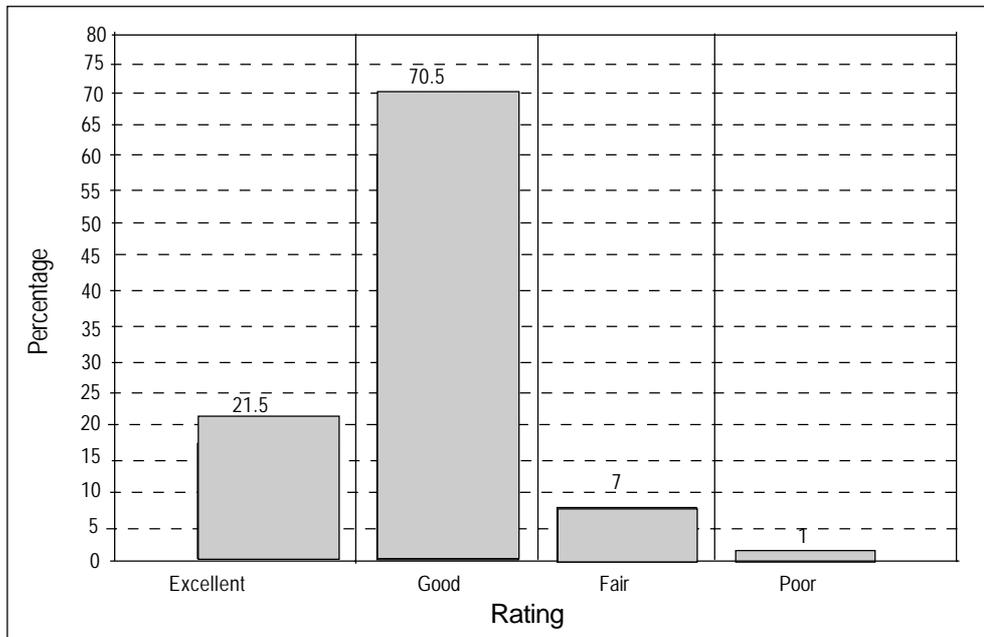
### 3.5 In terms of Opportunities to Network



### 3.6 In terms of Technical Content

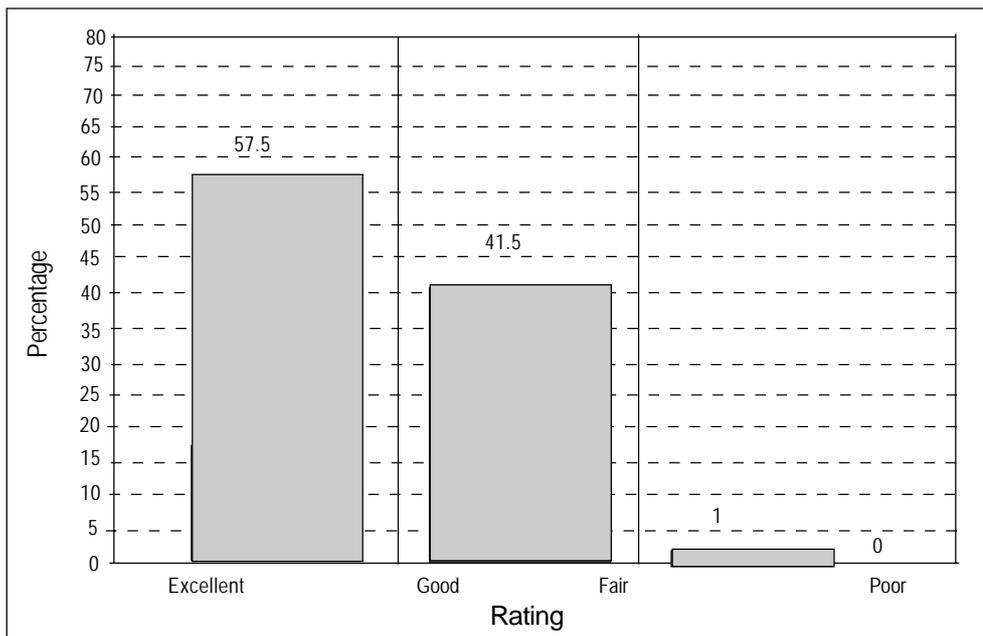


### 3.7 Overall rating on Seminar Organization



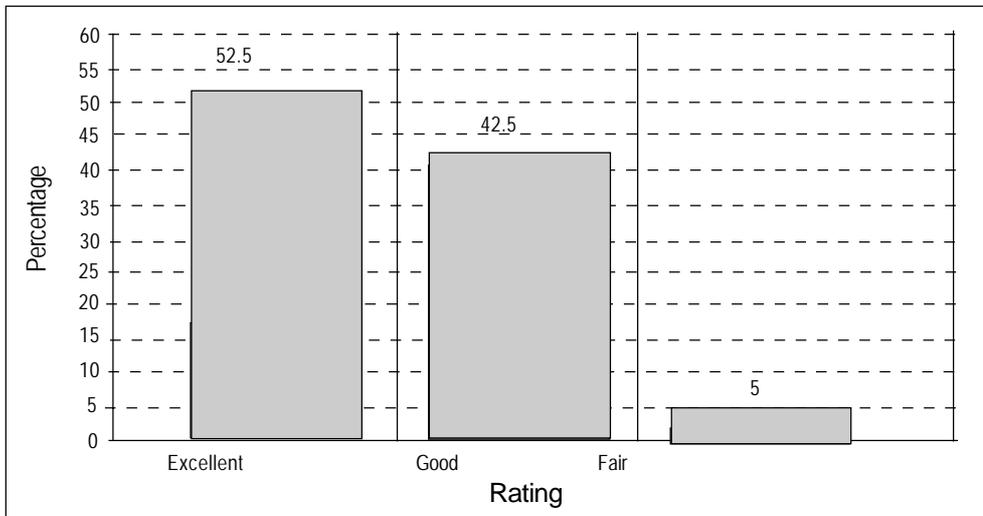
### Q 4 How would you rate the seminar facilities?

#### 4.1 In terms of Accommodation

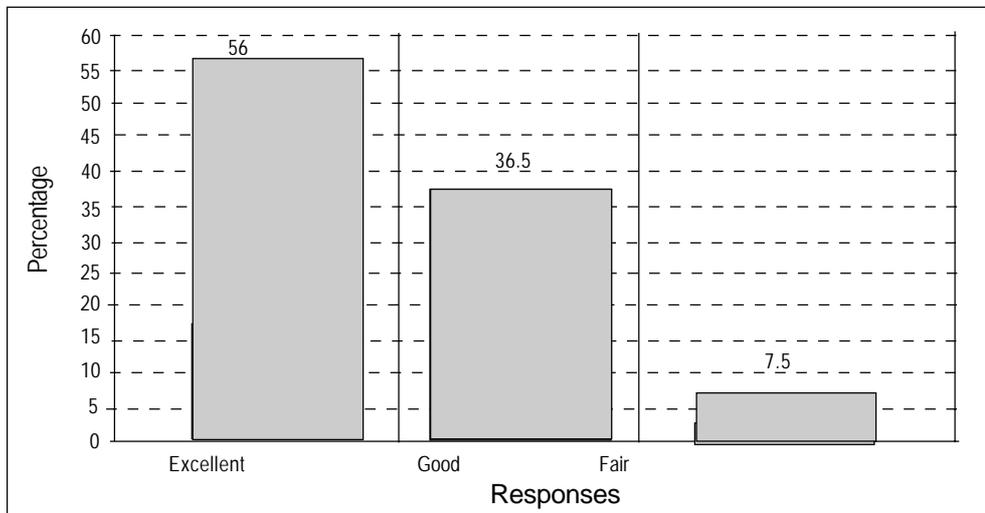




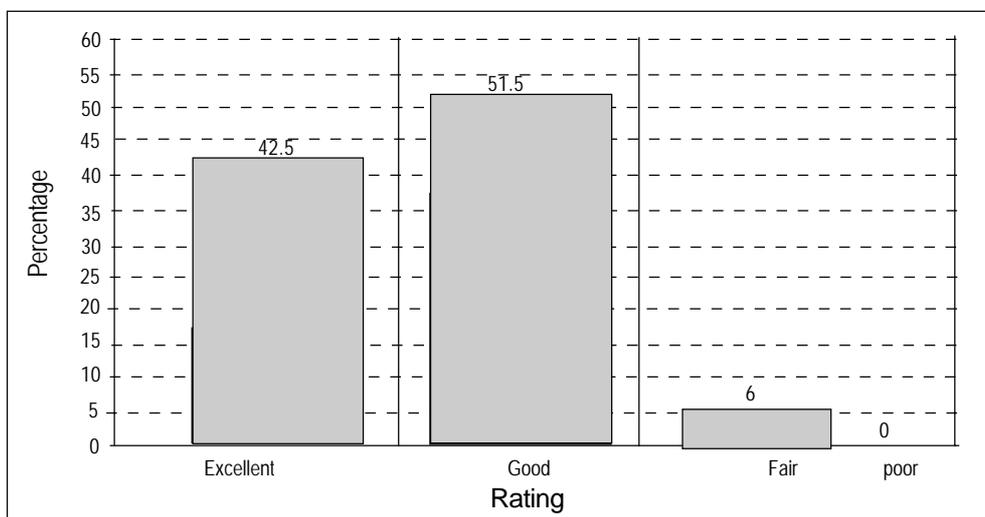
#### 4.2 In terms of the Conference rooms



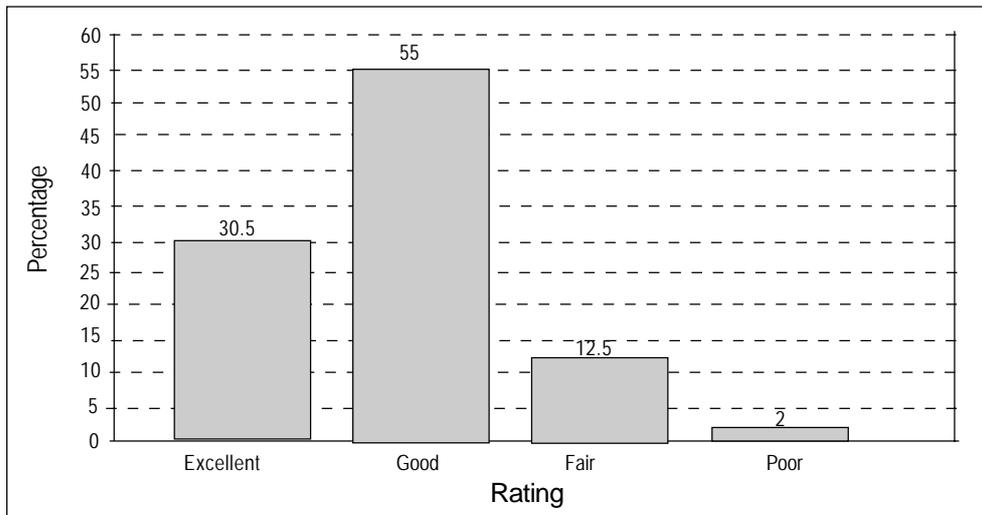
#### 4.3 In terms of Catering



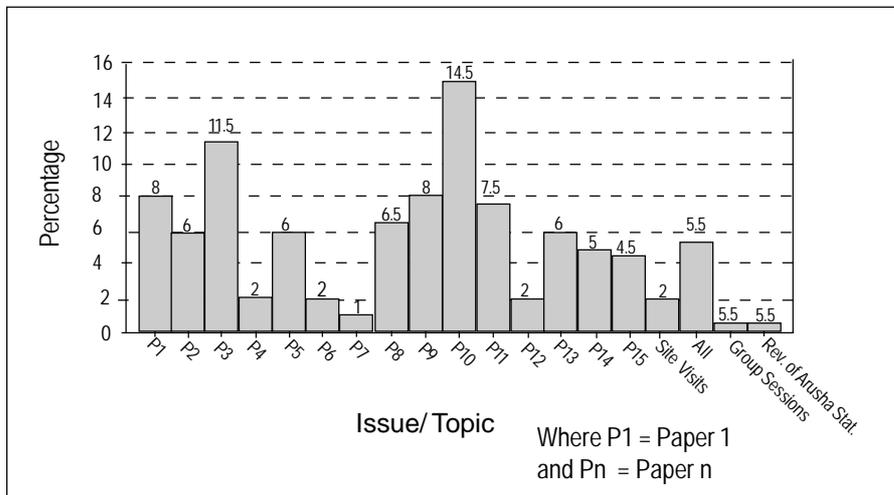
#### 4.4 In terms of Equipment



#### 4.5 In terms of Transportation



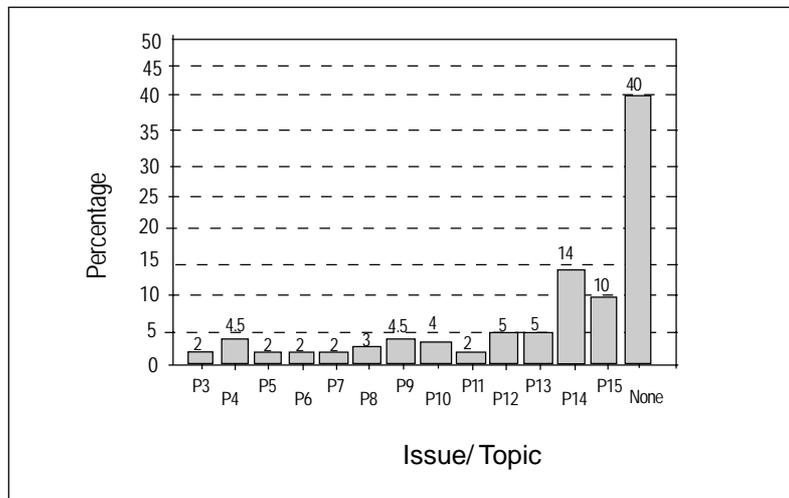
#### Q 5 What issues/topics did you find most relevant and valuable?



#### Q 6 How do delegates plan to apply issues they have found most relevant and valuable in the seminar?

- (i) Encourage the department to adopt the system (LBT) since it has an emerging contractor development programme.
- (ii) Apply them in planning, designing and construction of roads.
- (iii) To contract out all works under routine maintenance for excellent output.
- (iv) All of carriageway maintenance to be carried out by performance contract through LBT.
- (v) Pass technical material to fellow practitioners.
- (vi) Follow up for more information and set up pilot project.
- (vii) To get more cost effective contractors and a rational monitoring and evaluation way for paying the contractors.
- (viii) Influence higher authorities to budget for training, the road agency to carry pilot projects to ascertain sustainability.
- (ix) Ensure documents for LBT address the issues comprehensively.
- (x) Integrate the technology into the project.
- (xi) Use macadam application in maintenance of paved roads and spot improvement of steep sections of rural roads.
- (xii) To advocate for more women involvement in the road development since they do a good job.

Q 7 What issues/topics did you find least relevant?



Q 8 Issues/topics that delegates thought were missing or could have been covered better in the seminar:

- Challenges on using labour-intensive technology.
- Discussion on other sectors that labour-intensive can be used eg environmental.
- Application of different technologies in road construction.
- Training of emerging contractors in LBT.
- More practical paper/research papers on how to improve surfacing.
- Ring fenced funding for labour intensive road works.
- Use of LBT in other fields/areas besides roads.
- Engineering issues particularly participation/involvement of women in road construction as engineers and technicians.
- Management of labour-based road programmes in a sustainable manner.
- Economic isolation of remote areas verses poverty reduction.
- Involvement of small or learner contractors representatives would have added value to the seminar.
- Other labour-based methods other than road related activities.
- Costing of labour-based works.
- Improvement of gravel and other material with cement or lime using more labour intensive methods.

Q 9 Themes that delegates would like the next seminar to focus on?

- Real application of technology in road construction.
- LBT for wealth creation for poor countries.
- The setting up of labour intensive contract documentation.
- Improve surfacing of rural roads.
- urban infrastructure planning and in implementation procedures.
- Equipment that complements LBT.
- Establishing sustainable labour-based road programmes.
- Innovative technologies for livelihood development and improvement.
- Development of rural transport policy in relation to strengthening of economies in rural areas.
- LBT innovations and policy implementation.
- Use of labour in construction of higher class roads.
- Revolutionize labour-based approach for achievement of MDG.
- Job creation through LBT.



Q10 *General suggestions/comments to improve the seminar?*

- (a) Utilization of neutral people for the facilitation of group discussion.
- (b) The delegates to take input from other countries as they'll learn from other countries.
- (c) Limit the number of papers to 10, each group discussion to be given one topic.
- (d) Facilitation of group discussions is not optimized.
- (e) More time should be spent on reviewing progress in LBT in various countries (like the Arusha statement).
- (f) Seek views on target participants on topics they would like.

## 11.6 Annexure 6: List of participants

	Title	First Name	Last Name	Position	Organisation/Dept.	Postal Address	City	Country	Email	Tel No.	Fax No.	Mobile
1.	Eng.	Karim	Javed	Executive Engineer	Local Government Engineering Department (LGED)		Agathgaon	Bangladesh	E.Karim@yahoo.com	880 29 128404		880 17 1038004
2.	Eng.	Abdul MD	Wadud	Deputy Project Director	Local Government Engineering Department (LGED)		Dhaka,	Bangladesh	min-road@citechco.net	880 91 17073		
3.	Eng.	Amsalu	Bedemo Beyene	Planning & Programming Branch Head	BGRS-Rural Roads Authority	P.O. Box 126	Assosa	Ethiopia	amsulubed@yahoo.com	251 57 7751421	251 577 750404	
4.	Mr.	Meshesha	Berhanu Hailu	General Manager	Benishangul-Gumuz Regional State RRA	P.O. Box 126	Assosa	Ethiopia	brishiye@yahoo.com	251 57 7750326	251 57 7750404	251 91 1239229
5.	Mr.	Kwaku Osei	Bonsu	Senior Specialist	ILO	P.O. Box 2532	Addis Ababa	Ethiopia	osei-bonsu@ilo.org	251 11 5444409	251 15 513633	251 91 1674906
6.	Eng.	Gulfa	Dereje	Chief Engineer	Oromiya Rural Roads Authority	P.O. Box 58223	Addis Ababa	Ethiopia		251 11 1568720		251 91 1619306
7.	Prof.	Berhanu	Girma	Assistant Professor	Addis Ababa University	P.O. Box 30026	Addis Ababa	Ethiopia	gberhanu@ceng.aau.edu.et	251 11 1570560		251 91 1228155
8.	Eng.	Tesfaye	Haddis	Road Network Management Division Manager	Ethiopian Roads Authority	P.O. Box 407	Addis Ababa	Ethiopia	era.nma@ethionet.et	251 11 5503980		251 91 1600387
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10.	Eng.	Teferra	Mengesha	Consultant	ILO Consultant		Addis Ababa	Ethiopia	teferra@telecom.net.et	251 11 5531215	251 115 513246	251 91 1249339
11.	Eng.	Temelso	Negussie Bahta	Project Manager	ILO	P.O. Box 1188	Mekele, Tigray	Ethiopia	neg4381@yahoo.co.uk	251 34 4411131		251 91 4705323
12.	Mr.	Aysheshim	Yaregal	Head of the State	Benishangul-Gumuz Regional State RRA	P.O. Box 44	Asossa	Ethiopia	aysheshim@yahoo.com	251 577 750109	251 57 7750841	251 91 1206874

Title	First Name	Last Name	Position	Organisation/Dept.	Postal Address	City	Country	Email	Tel No.	Fax No.	Mobile
13. Mr.	Ayana	Zewdie	Capacity Building Advisor	Benishangul-Gumuz Regional State RRA	P.O. Box 44	Assosa	Ethiopia	ayanazewdie@yahoo.com	251 57 7750157	251 57 7750841	
14. Eng.	Begna	Girma Regassa	Department Head	Oromia Rural Roads Authority	P.O. Box 58223	Adiiss Ababa	Ethiopia	girma_reg@yahoo.com	251 11 1568556	251 11 1568816	251 091 11635153
15. Dr.	Samuel Innocent Kofi	Anpadu	Senior Lecturer	Kwame Nkrumah University of Science & Techn	Civil Eng Dept, Private Mail Bag	Kumasi	Ghana	sikampadu@yahoo.co.uk	233 51 60226	233 51 60226	233 20 8165506
16. Eng.	Henry	Danso	National Co-ordinator LBP	Dept. of Feeder Roads	P.O. Box GP 18280	Accra	Ghana	h_danso@yahoo.com	233 21 681129		232 43 207894
17. Eng.	Bruno	Illi	Resident Representative	Norconsult AS	P.O. Box 9842	Nairobi	Kenya	lilli@mitsuminet.com	254 20 250035	254 20 248900	254 722 745325
18. Eng.	Mohamed H	Abdi	Systems Administrator, KRB	Kenya Roads Board	P.O. Box 73718, 00200	Nairobi	Kenya	mhabdi@kroadboard.go.ke	254 20 2723599	254 20 2723161	254 722 167283
19. Eng.	Josphat	Amadi	District Roads Engineer	Ministry of Roads & Public Works	P.O. Box 470	Busia	Kenya		254 20 5522130	254 20 5522130	254 733 723840
20. Eng.	Gilbert Mongare	Arasa	Provincial Roads Engineer	Ministry of Roads & Public Works	P.O. Box 485	Embu	Kenya	gmarasa@roadsnet.go.ke	254 68 30553		254 722 525820
21. Eng.	Dave	Arunga	Personal Assistant to the Minister	Ministry of Roads & Public Works	P.O. Box 30260	Nairobi	Kenya	daudiarunga@hotmail.com	254 20 721708	254 20 730524	254 722 236015
22. Eng.	Masila	Benson Muteti	District Works Officer - Vhiga	Ministry of Roads and Public Works	P.O. Box 1251	Maragoli	Kenya		254 56 51123		254 722 317257
23. Eng.	Ruth	Bilita		Kenya Roads Board	P.O. Box 73718	Nairobi	Kenya		254 20 2720083		
24. Eng.	Mile	Bulokovic	Contract Specialist	Roughton International	P.O. Box 4723	Nairobi	Kenya	roughtonken@icconnect.co.ke			254 723 494980
25. Eng.	Maurice	Chore	SE (P)	Ministry of Roads and Public Works	P.O. Box 30260	Nairobi	Kenya	mauricechore@yahoo.com	254 20 2723101	254 20 2720044	254 722 628059
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Title	First Name	Last Name	Position	Organisation/Dept.	Postal Address	City	Country	Email	Tel No.	Fax No.	Mobile
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28. Eng.	Lucy Kabura	Gathika		Kenya Roads Board	P.O. Box 73718	Nairobi	Kenya		254 20 723176		
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30. Prof.	Francis J.	Gichaga		University of Nairobi Enterprise Services (UNES)	P.O. Box 68241	Nairobi	Kenya				254 722 512 487
31. Eng.	Stephen Ngetha	Gichuru	Provincial Works Officer, Coast	Ministry of Roads & Public Works	P.O. Box 90663	Mombasa	Kenya		254 41 2490555	254 41 2490555	254 722 896629
32. Eng.	Francis	Gitau	DWO -Kitui	Ministry of Roads & Public Works	P.O. Box 41	Kitui	Kenya		254 44 23510	254 44 23510	254 722 615416
33. Eng.	Silas W.	Gitau	Senior Supt. Engineer (Roads 2000)	Min of Roads & Public Works	P.O. Box 30260-00100	Nairobi	Kenya	swgitau@africaonline.co.ke	254 20 2727449	254 20 2727449	254 722 767130
34. Eng.	Abubakar	Godana Harugura	Engineer Roads	Ministry of Roads & Public Works	P.O. Box 100	Marsabit	Kenya	agodana@yahoo.com	254 69 2233		254 734 467168
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44	Eng.	Frank David	Karanja	Chief Supt. Engineer (Maintenance)	Ministry of Roads & Public Works	P.O. Box 30260	Nairobi	Kenya	fdkaranja@roadsnet.go.ke	254 20 2726998	254 20 2720044	254 722 831073
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46	Mr.	Peter T.	Kega	Senior Instructor Roads	Kisii Training Centre	P.O. Box 2254	Kisii	Kenya	course@kihbt.ktc.com	254 58 30699		254 733 801064
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48	Eng.	Hudson W	Kihumba	Manager P & P	Kenya Roads Board	P.O. box 64614-0620	Nairobi	Kenya	hwkihumba@kroadsboard.go.ke	254 20 722865	254 20 723161	254 733 802254
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50	Eng.	Anthony	Kimani	Roads Department	Ministry of Roads & Public Works	P.O. Box 30260	Nairobi	Kenya	amrkimani@roadsnet.go.ke	254 20 2723101		254 733 555322
51	Eng.	Silas	Kinoti	Director	Kenya Roads Board	P.O. Box 27513-00506	Nairobi	Kenya	twoems@africaonline.co.ke	254 20 2722430	254 20 2715169	254 733 763163
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	Title	First Name	Last Name	Position	Organisation/Dept.	Postal Address	City	Country	Email	Tel No.	Fax No.	Mobile
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67	Eng.	John Osero	Mokomuwi	Inspector	Local Government Ministry	P.O. Box 87729	Nairobi	Kenya		254 20 41222179	254 20 41222179	254 722 699093
68	Eng.	Pamela	Muchera	Director	Kenya Roads Board	P.O. Box 73718-00200	Nairobi	Kenya	pamuchera@yahoo.com			254 722 275957

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73	Mr. Patrick Njuguna	Muhia	Chief Economist	Roads & Public Works	P.O. Box 30260	Nairobi	Kenya		254 20 2723101	254 20 2712284	254 721 695452
74	Eng. Paul Thumbi	Mukiri	Principal Supt. Engineer	Ministry of Roads & Public Works	P.O. Box 30043	Nairobi	Kenya				254 722 529417
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80	Eng. Gerald Ngari	Muthigani	Chief Supt. Engineer Bridges	Ministry of Roads & Public Works	P.O. Box 30260 - 00100	Nairobi	Kenya		254 27 25977		254 722 527526
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Title	First Name	Last Name	Position	Organisation/Dept.	Postal/Address	City	Country	Email	Tel No.	Fax No.	Mobile
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88	Eng. John Mwicha	Mwatu	Provincial Works Officer	Ministry of Roads & Public Works	P.O. Box 372	Nyeri	Kenya		254 61 2034419		254 722 512128
89	Eng. Mwuatu John	Mwicha	PWO -Central	Ministry of Roads & Public Works	P.O. Box 372	Nyeri	Kenya		254 61 2034419	254 61 2031018	254 722 512128
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## 11.7 Annexure 7: Photographs



Participants of the 11<sup>th</sup> Regional Seminar held at Whitesands Hotel, Mombasa, Kenya



Road Improvement along Vikwatani-Mtopanga Road



Participants viewing a toll grader in Kaloleni-Mavueni road rehabilitation site.



Soil conservation at Ng'ombeni area using gabions.



Participants at Haller Park, Lafarge Bamburi Cement Ltd

