

# **UNITED REPUBLIC OF TANZANIA**



## **MINISTRY OF WORKS**

### **The Development of Labour-based Technology in the Road Sector in Tanzania**

#### **Achievements and Proposed Future Direction**

#### **FINAL REPORT**

#### **VOLUME 1 - OVERVIEW**

**Prepared by: P.H.Bentall  
I.N.Kimambo  
F.J.Shirima  
N.M.Lema**

**Consultants to the International Labour Organisation**

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## List of Abbreviations:

ARC	Annual Roads Convention
ATAP	Agricultural Transport Assistance Project
ATATAP	Appropriate Technology Advisory & Training Project
ATC	Arusha Technical College
ATTI	Appropriate Technology Training Institute
ATU	Appropriate Technology Unit
CODAP	Coordination of Donor Aided Projects
CRB	Contractors Registration Board
CTA	Chief Technical Adviser
DANIDA	Danish Aid Agency
DIT	Dar Es Salaam Institute of Technology
DRDP	District Roads Development Programme
EBT	Equipment-based Technology
EU	European Union
FIDIC	International Federation of Consulting Engineers
FINNIDA	Finnish Aid Agency
FTC	Full Technician Certificate
GDP	Gross Domestic Product
GOT	Government of Tanzania
GTZ	German Agency for Technical Cooperation
ICE	Institution of Civil Engineers (UK)
IDA	International Development Association
ILO	International Labour Organisation
IRP	Integrated Roads Project
KDC	Kilosa District Council
LBM	Labour-based Methods
LBT	Labour-based Technology
MIRTP	Makete Integrated Rural Transport Project
MORALG	Ministry of Regional Administration & Local Government
MOW	Ministry of Works
MRSP	Morogoro Road Support Project
NCC	National Construction Council
NGO	Non-Governmental Organisation
NIGP	National Income Generating Programme
NORAD	Norwegian Agency for Development
PEHCOL	Plant & Equipment Hire Company Limited
PMO	Prime Minister's Office
PRA	Participatory Rural Appraisal
RAS	Regional Administrative Secretary
REO	Regional Engineer's Office
RMI	Road Maintenance Initiative
RMMS	Road Maintenance Management System
RSD	Road Sector Programme
RTB	Regional Tender Board
SAR	Staff Appraisal Report (World Bank)
SDC	Swiss Development Corporation
T <sup>2</sup>	Technology Transfer Centre
TA	Technical Assistance
TARA	Tanzania Roads Association
TRL	Transport Research Laboratory (UK)
UDSM	University of Dar Es Salaam
UNCDF	United Nations Capital Development Fund



UNDP	United Nations Development Programme
URT	United Republic of Tanzania
USAID	United States Agency for International Development
VETA	Vocational Education & Training Authority
VTTP	Village Travel and Transport Programme
WPU	Women Participation Unit

## EXECUTIVE SUMMARY

1. Labour-based technology has been successfully operational in Tanzania for over 20 years but it still lacks an institutionalised framework. Mostly it remains project based and largely donor driven. With respect to construction industry dynamics, this technology needs to fit as part of the whole picture and not as something considered specialised.
2. The Ministry Of Works in collaboration with ILO, NORAD and UNDP engaged a team of consultants to carry out the study looking at the development on the use of labour based technology in the road sector with respect to the program of capacity building within the MoW and other client organisations as well as the development of contracting environment. This entailed both undertaking an assessment of achievements and failures of the programmes with respect to the objectives and strategies set, the activities undertaken and to look at the future programme of actions.
3. Within MOW there is a lack of formal, documented and implemented policy on labour-based methods for all areas of road works. This situation is mirrored in other areas. Personal preference or experience appears to play a large part in decisions about using labour-based methods. Donors are largely seen as setting standards and implementation systems and this has led to a fragmented approach with considerable variations, for example, in contract documentation.
4. ATATAP is a project established (funded by GoT and NORAD) in an effort to coordinate labour-based activities and aimed particularly at institutionalisation of the use of LBT within the MoW roads departments. Initial efforts focused on the needs of the force account approach within the MOW. In the implementation of ATATAP, ATU was established within the Roads Department with a role of promoting LBM in road works. Also, the training institute referred to as ATTI was established for training in-house road works supervisors.
5. ATU has achieved some success in
  - holding awareness seminars/workshops
  - coordinating training at ATTI
  - producing papers/reports on labour-based potential: experience of MOW staff; policy guide-lines
  - producing three volumes (out of four) of the Technical Manual and promoting their use in the Regions

But it has been constrained in other activities such as inputs to the Road Maintenance Management System: tools and equipment requirements for contractors and appropriate contract documentation development.

6. ATTI has been able to:
  - Train 110 road works foremen and inspectors from MoW in labour based construction and maintenance (by Dec. 1998)
  - Train 21 road works foremen and inspectors from district councils in labour based construction and maintenance (by Dec. 1998)
  - Develop training manuals for the courses conducted at the institute.
7. MOW has partial implementation responsibility on rural roads since the Ministry of Regional Administration and Local Government is responsible for the management of Districts' roads. However, the MOW remains responsible for all technical matters related to construction in the country. District Engineers are appointed by District Councils, and are expected to be guided by Engineers at Regional Engineers' offices. For the promotion of the use of LBT at district level, the MOW has no formal links within this area of activity for which there is a large labour-based potential.
8. Similarly, interaction between MOW and other bodies (including NCC, CRB, and NIGP) has not been realised, despite many of these bodies being responsible to the Minister of Works. Such other bodies including NCC, CRB, NIGP are involved in the promotion of contractors who are ready to adopt the use of labour-based methods in the construction industry.
9. NCC is a government parastatal organization established with the role of promoting the development of the construction industry in general. With respect to the use of LBT, NCC has been involved in several labour-based (and other) training interventions and also engaged in design and contract supervision, and plant hire. In principle it only operates a 'gap-filling' role since it has a mandates to support and encourage the private sector. For the Kilimanjaro/Shinyanga, and Mwanza/Arusha projects, NCC trained a total of 168 supervisors and 48 directors from Contractors as well as 8 and 6 personnel respectively for Regional Engineers' and District Engineers' Offices. However consultants have been seriously neglected in these training programmes despite being vital in the contracting environment. UNCDF/UNDP shortly intends to undertake training of local consultants for implementation of LB projects in Mwanza Region.

10. From a promising start to labour-based contractor training in Kilimanjaro Region, the programme has largely fallen apart for many and various reasons (several of which are by no means clear). The result has been that a large number of trained contractors were left idle for many years with little immediate prospect of worthwhile workload, despite the urgent needs for road rehabilitation and the initial expectations which encouraged their participation.
11. Training on many other (donor-aided) projects and the variety of formal courses that include LBM at established institutions highlighted the need for coordination over the whole construction industry and the proposal for a Construction Industry Training Board is welcome. ATU should have a role to play in this as elsewhere for example in policy formulation, and potential ATT1 links with VETA should be investigated.
12. Other areas within the industry which have important bearing on the sustainability of labour-based technology especially in a contracting environment include
  - access to credit
  - access to appropriate tools/equipment
  - access to Work opportunities
  - suitability of contract design/documentation

Labour-based technology needs to be seen as part of, and not separate from, the industry as a whole when looking at areas like market share and contract packaging.
13. Most of the problems have been well documented in many reports and studies over the years but there is a prevailing sense of inertia in trying to move from the proposals for change/development to effecting the changes themselves. A new government and changes of personnel at the top level in MOW seem to have hindered progress.
14. The proposals for the establishment of the Roads Agency (TANROADS) will have a significant effect on the role and influence of the ATU. It needs to be given a high profile within the MOW with much wider powers to operate outside strictly Ministry boundaries. In addition, a National Advisory Board (headed at least by an Under-Secretary), or similar, is proposed to spearhead the coordinated promotion of labour-based technology in all relevant sectors of the economy with ATU as its implementing unit.
15. Areas for further potential LBM involvement include
  - District infrastructure
  - Urban infrastructure
  - Irrigation

- Water Supply
- Agriculture
- Forestry
- Soil and Water Conservation

16. For effective promotion of labour-based technology, engineers need to emerge from their traditional technical role and learn the skills of the advocate and public relations operators. It is the creation of the political will and public perception that are needed and indications are that there is still much to be done in this area.
17. Experiences from other countries have indicated that firm, committed and reliable actions from decision-makers (those responsible for controlling the finances and those responsible for political development) are vital for the development and promotion of the use of LBT.

#### 18. The Workshop Discussions

The two-day workshop discussed the draft report, agreed on a number of issues and made recommendations basing on key questions raised in the report.

##### **a) Policy for the Promotion of LBT**

that the policy aspects of LBT identified by the workshop be incorporated by the NCC when revising the draft Construction Industry Policy and the ATU should seek to coordinate this input.

##### **b) Strategy Document**

that ATU, in liaison with the appropriate officers in both Ministries (MOW and MORALG) drafts a strategy document to be adopted as a practical guide for the implementation of LBT within the Ministries and to include areas such as VTTP and urban infrastructure operations.

##### **c) Contracting Issues**

that ATU is given a brief to establish a working liaison with other interested bodies to detail practical measures that are to be taken to improve the contracting environment with particular emphasis on the small-scale and labour-based contractors.

##### **d) Training Issues**

that ATU should be given a brief to take a proactive role in the development, coordination and implementation of labour-based training programmes for contractors and consultants.

including liaison with donors, NCC, CRB, and other learning/training institutions.

**e) Position of ATU**

that the appropriate steps are taken in MoW to raise the status of the ATU to a suitable level of influence, as well as to appoint a Steering Committee of interested parties in LBT promotion to direct its activities.

**f) ATTI Operations**

that ATTI is given a position within MoW similar to the self-accounting Regional workshops, with a brief to widen the scope of its services and to operate within all areas of LBT.

that a study be undertaken to assess the LBT training needs within the construction industry and the role which ATTI should play in an overall strategic plan including amalgamation with VETA.

**19. Recommendations of the Consultants**

**i. Institutional and Policy Issues**

The Government to formulate and implement a clear policy on the use of LBT which sets objectives. A clear policy directive from the government leadership (Philippines example) would be appropriate for the use by all implementing agencies, donors and all other related groups. Following the changes within the MoW, the ATU better be strengthened and elevated to a suitable level of influence such as being led by the under-secretary. For the entire construction industry, appointment of a steering committee to address all interested parties in LBT promotion will ensure the currently missing coordination.

**ii. Contracting Issues**

Practical measures are required to improve the contracting environment with particular emphasis on the promotion of small scale and labour-based contractors. Measures should include provision of a suitable contract design and documentation, suitable access to work through proper packaging and allocations; and improving access to credit, appropriate tools and equipment. The MoW should take a lead to establish a working liaison with other institutions related to implementation of labour Based projects.

**iii. Training Issues**

Adequately coordinated and implemented labour-based training programmes for clients.

contractors and consultants are required for the entire construction industry. A strong, reliable and capable institute will be able to carry out the required assignments.

The MoW better strengthen the ATTI, giving it a semi-autonomy. The aim should be to allow it to operate in a self-accounting, wider scope of services with free access for all in need. The institute should be able to carry out development requirement for all areas of LBT. A study to assess in detail the LBT training needs within the entire construction industry and the role which ATTI should play with a clear overall strategic business plan will be a good start.

## 1. INTRODUCTION AND MISSION ACTIVITIES

### 1.1 Study Objectives

The study team comprising,

P. H. Bentall	-	Team Leader, Consultant
I. N. Kimambo	-	K and Associates
F. J. Shirima	-	Crown TECH-Consult Ltd.
N. M. Lema	-	University of Dar Es Salaam

undertook the mission in Tanzania between 1 - 26 March with the local consultants carrying out some preparatory data collection in the previous week. The team received great assistance from MOW staff L. M. Kyombo and Ms U. L. Msengesi as well as NCC representatives Ms E. K. Kinasha and Mrs L. A. K. Chobya with their involvement in the logistic arrangements, the meetings and the site visits. The itinerary and list of persons met are given in the Annexes. Discussions were centred in Dar Es Salaam with the team splitting for field visits both north and south of the country. The objective was to engage the widest possible view of labour-based activities and opinions within the public and private sector; with donors and funding agencies; and from published documentation. An initial draft report was distributed and subsequently discussed in a workshop session by all interested parties.

The overall objectives of the study were to look at the programme of capacity building within the MOW and other client organisations in the use of labour-based technology at large and the development of the labour-based contracting programme. This entailed both undertaking an assessment of the programme achievements with respect to the objectives and strategies set, and the activities undertaken to reach these objectives, and, more importantly, to look at what is proposed to be done. 'This includes an appraisal of the future programme of actions in order to reach the appropriate level of involvement of the private sector for an affordable and sustainable maintenance of the road network in Tanzania'. (Terms of Reference) In particular the team assessed the progress and achievement of the ATATAP within the MOW and the contractor training programmes of the NCC, the development of an appropriate contracting environment, as well as the development of a capacity within the private consultants.

### 1.2 Report Format

Each of the consultants was assigned an area of activities within the overall study and each produced a separate draft report on an agreed table of contents. The Team Leader's task apart from data collection and compilation of findings was to write the overview drawing on the results of the detailed work of the team members. This resulted in a two volumes draft report, including annexes with the objective that comment and conclusions included in the first volume find more detailed background and explanation in the second. Other factual data and extracts from published documents and reports are included as annexes so that as far as possible the large amount of valuable material and personal comment and opinion gathered on the mission is not lost. It was a feature of the variety of discussions that opinions and even sometimes facts concerning a particular project varied with the information source. Regrettably some facts could not be double-checked, and other parties may subsequently have disputed them. These were noted and included in the final report, which also contains the conclusions of the consultation process that emerged from the two-day workshop discussions.

It was not the intention of the draft to come to final conclusions or recommendations concerning the way forward for labour-based technology in Tanzania but rather to present a variety of ideas and possibilities, drawn from the evidence gathered, for presentation at the workshop held after all interested parties had the opportunity to study the draft. It should not be the intention of any independent study to impose solutions from outside but rather to assist in stimulating informed discussion so that the future direction is decided by those who are specifically involved and so the proceedings and conclusions from the workshop are incorporated into the final report together with other comments received.



## **2. BACKGROUND**

### **2.1 MOW Mission**

1. The Ministry of Works (MoW) mission statement towards supporting socio-economic development includes provision of a sustainable, reliable, cost effective, safe and environmentally friendly road network. The current vision towards achieving its mission statement includes the importance of having the road sector that contributes to:
  - ◆ the reduced dependence of the nation on foreign currency;
  - ◆ increasing the rate of local employment or rather utilization of the available under-employed labour force;
  - ◆ increasing the rate of utilizing locally available resources.
2. This vision is to be accomplished through
  - ◆ promotion of the use of domestic resources including materials, tools, locally assembled small and intermediate equipment, funds, expertise, etc.
  - ◆ promotion and development of the use of Labour Based Technology (LBT) in the road sector
3. Formulated strategies include
  - ◆ Provision of appropriate policy guide-lines;
  - ◆ provision of technical guidance;
  - ◆ training;
  - ◆ packaging of roadworks to favour the use of LBT and Small and Medium Entrepreneurs;
  - ◆ provision of appropriate regulations; implementation guide-lines; works specifications; and tender documents.
4. The road sector can contribute significantly on poverty reduction through employment of labour during construction and maintenance of roads and through promotion of Small and Medium Entrepreneurs (SMEs) as contractors as well as producers of tools and appropriate equipment.

### **2.2 Government Policy**

In terms of the overall government policy and direction it is interesting to note the inclusion within the World Bank Staff Appraisal Report (SAR) (IRP II) (March 1994) of some specific objectives.

- Establishment of a Central Roads Board (imminent)
- Provision of policy and institutional support to include the development of the domestic construction industry.

Within the text under this industry development is detailed

- Inclusion of the local consultants
- Increased training of contractors (using several models)
- Sustainable financing
- Strengthening of NCC

The GOT Letter of Sector Policy in support of IRP II repeats the emphasis on developing the capacity of the local private construction industry. This includes a specific commitment to increasing the participation of competitive local contractors and consultants and the encouragement of labour-based techniques.

Labour-based technology for road works is therefore a stated policy and one objective of this study is to ascertain how far this policy is being translated into practice.

### **2.3 Projects**

An assessment was on two particular projects which aimed at promotion of the use of labour based technology together with a wider background understanding of what is happening in other areas of the country with a variety of other donors. The two projects are the ATATAP which was established (funded by GOT and NORAD) in an effort to coordinate labour-based activities and aimed particularly at institutionalisation of the use of LBT within the MOW roads department and the NCC contractor training programme (UNDP/UNCDF/USAID funding) which aimed at promoting the use of the private sector.

Under IRP a total of 100 trained contractors was given as a target. Small-scale and labour-based contractors were identified for training and technical advice. Labour-based techniques were to be encouraged through this training with appropriate specifications in order to create local employment and to reduce foreign currency requirements. A total of 48 contractors received training by NCC under the Kilimanjaro/Shinyanga and Mwanza/ Arusha projects alone.

Since one report suggested that barely 10% of the work under IRP I was carried out by the local industry (Carl Bro 1997) the starting point for the industry's development is clearly at a low level. In the overall context, the labour-based construction component is small and the proportion of this technology in the general picture is not yet significant, despite the fact that labour-based activities for road works started over 20 years ago.

### **3. CURRENT SITUATION OVERVIEW**

#### **3.1 Construction Industry**

##### **3.1.1. General Situation**

Many studies have been undertaken and reports written on the various aspects of the construction industry in Tanzania. Largely, as elsewhere, these focus on the contractors more than the consultants. The National Construction Council was established in 1979 and became operational in 1981, with the objective of strengthening and developing the local industry. Government policy statements supported that aim and this was repeated in such documents as the Staff Appraisal Report for the IRP.

However, a consultants report on the IRP (Carl Bro 1997) suggested that "hardly 10%" of the funding had been taken up by the local industry out of around one billion dollars of investment. Some statistics given in the newspaper supplement (March 99) on the construction industry show its average contribution to GDP as being 3.8% between 1987-1997 with a peak of 4.8% in 1990. "Since 1992 its contribution has generally assumed a declining trend to a low of 2.9% in 1995". Another survey in 1995 found more than 40% of construction equipment was in poor to scrap condition. (MOWCT).

The industry's problems are categorised as:

- problems of access to equipment; credit; continuity of work
- biased rules/regulations; unpredictable levies/fees/taxes.
- lack of access to training/skills; qualified personnel
- length procurement process; unsuitable documentation and lack of transparency
- lack of experienced supervision
- payment delays
- unfavourable client organisation's environment
- packaging in favour of large scale works
- failure of Technical Assistance/advisory services

Into this environment the labour-based construction technology needs to fit as part of the whole picture and not as something considered specialised and apart. Again many statements have been made on the need to encourage the smaller scale contractors in more cost-effective methods making fullest use of local resources.

##### **3.1.2. National Construction Council (NCC)**

NCC has taken many initiatives including an analysis of the 10 years training needs for local contractors and consultants, and prepared a draft Construction Industry Policy document. It is also seeking to establish a Construction Industry Trust Fund, in collaboration with other stakeholders such as Contractors Registration Board (CRB). This initiative is the result of a study carried out in 1994/95 on the strategy for the development of the local industry. The time scale would seem to mirror that of other initiatives in coming to fruition. For example, the first draft Transport Policy document is dated 1987 but this has only recently been revived and is being finalised.

The NCC has a mandate in 7 areas:

- ◆ coordinating
- ◆ planning
- ◆ monitoring
- ◆ training
- ◆ advisory

- ◆ documentation/information
- ◆ research

Its role is one of enabling and facilitating and it is stressed that NCC only implements 'to fill gaps' where the private sector lacks the capacity at present. One example would be its significant involvement in the contractor training programmes, both labour-based and equipment-based where many donor-funded projects are using its services. There is a sense of conflict of interest in these activities (as also with plant hire) and it is noted that NCC receives only 20% funding from GOT and therefore requires income generating activities, to make up the balance.

In this respect another initiative is being discussed, that of establishing a Construction Industry Training Board in an effort to coordinate training and ensure the most effective use of all local training facilities and institutions, avoiding duplication of effort and filling existing gaps. As noted later with ATTI much of the training capacity potential is unfulfilled. Other bodies such as CRB and NIGP also have mandates to engage in training activities and in the area of vocational training VETA operates countrywide funded by a levy from all companies having more than 5 employees. Thus various parts of the industry are being targeted but not with any overall coordination.

### **3.1.3. Plant Hire**

A further example of a rather fragmented approach within the industry concerns plant hire. Under the IRP a parastatal company PEHCOL was established to run plant hire for the industry on a commercially oriented basis. Its initial fleet of equipment however was the existing items from the MOW Regions, which were mostly, in poor to scrap condition. The consultant report on IRP notes that 'PEHCOL also inherited staff with limited qualifications and insufficient experience in repairing and maintaining heavy equipment .... the performance of PEHCOL is not satisfactory and the REO feel they cannot rely on PEHCOL to provide operational equipment when it is required'. (Carl Bro 1997)

In parallel to PEHCOL road workshops under the Regional Engineers in Mbeya, Tanga and Morogoro (equipment provided by NORAD and SDC) were established. These have reportedly operated well and an MOW in-house study recommended inter-alia that Regional workshops should be established with all REOs, which seems to bring the situation almost back full circle, leaving PEHCOL in uncertainty. In addition NCC has equipment available from its contractor training programmes which it hires to the participating contractors. These arrangements, again, do not encourage the private sector which is stated in the report as '.... apparently not yet prepared to invest in road plants and equipment partly due to lack of capital and partly due to uncertainty with regard to continuous availability of road works'. It may also be that this sector has not been made aware of the type of appropriate equipment (must less costly) and tools, which the majority of small-scale contractors (in all sectors) actually require.

### **3.1.4 Other Bodies**

The construction industry is made up of many operations from the largest international contractors to the informal market. If standards and quality control are to be maintained and the public safety protected the industry has to be regulated. Several trade and professional organisations exist to provide either necessary registration or control, or to promote and safeguard the needs of their membership groups. The CRB is responsible for registering contractors in the various categories according to certain established criteria. There is ongoing discussion concerning labour-based contractors and there is a specialist class in which they can register, but none of them has. These contractors emerged on the scene in 1993 and many already existed when the CRB was established in 1997 but it seems evident that, at present, without work allocated to the specialist category their opportunities are very limited since Regional Engineers exercise considerable authority in the tendering process.

From an outside perspective it might seem that the CRB'S registration/regulation and training

mandates could be a point of conflict of interest (contractors not be to upgraded without participation in training courses) but CRB is alert to that situation.

The proposed Construction Industry Policy Document stresses the need for effective associations and professional bodies within the industry and, as an example, the Association of Consulting Engineers is keen to increase its membership and effectiveness which it currently acknowledges to be weak.

### **3.1.5. Local Capacity**

However, as in all countries, it is the construction industry which is one of the first to suffer the effects of economic decline and then not being in a strong position to react effectively to economic growth (so giving much of the market to the foreign companies). In efforts to overcome this many countries require local participation in all 'foreign' construction projects (contractors and consultants) to ensure some transfer of technology and skills and to assist the development of the local industry. This does not yet seem to be the situation in Tanzania.

As an illustration of local capacity using appropriate technology to advantage, the placing of concrete pours for a three storey car park structure (22 x 140 m<sup>3</sup>) in Dar Es Salaam was carried out by labour without any use of a crane, and completed in a shorter time than the so called 'conventional' method.

The road industry is still dominated by the (single) Client of government which controls the funding, the payments, tendering procedures etc. and which still views contractors for the most part as 'cheating adversaries' rather than partners in development, demanding that contractors fulfil their contractual obligations without being so strict about its own. This stems largely from the tradition of force-account works and its environment of being both Client and contractor. Contracting is a different world and technical staff needs to re-orientate both technically and in working approach. The establishment of a Road Agency, (TANROADS), is designed to create that new environment and a commercially oriented approach. Labour-based technology will need to be given due consideration in the search for the most economic implementation.

However, regardless of all the studies, reports, policy statements, councils and industry bodies which may be established the bottom-line is the need for the political will for a vibrant construction industry which has so much potential to contribute to economic growth and which is always a major generator of employment.

## **3.2 Government Ministries**

### **3.2.1 MOW**

The overall technical responsibility for roads has remained with the Ministry of Works (MOW) throughout the various changes and oscillations with Communications and Transport and the shift from Prime Minister's Office (PMO) to Ministry of Regional Administration and Local Government (MORALG) for District Roads. Within the MOW changes over years have included the elimination of the Commissioner's position and split between Trunk Roads and Rural Roads. Directors of the various departments now report directly to the Permanent Secretary (PS) as do the Regional Engineers of the 20 Regions. Below the various Directors, Chief Engineers abound having responsibility for various aspects of the roads environment (e.g. inspectorate; design and construction; maintenance; policy and planning; contract control etc).

Others deal with areas such as RMI coordination; ATU: Coordination of Donor Aided Projects (CODAP) and the overwhelming impression is that the management structure is vertically oriented and the officials did not admit to much formal horizontal interaction. This would depend mostly on individual personalities. In many instances the workload; technology; implementation procedure; documentation; standards seemed to be dictated by donors' own requirements, and accepted. One typical comment was 'labour-based is used when it is financed by a donor'. Government funding is seen as only being sufficient to fulfil counterpart-funding obligations. Those with some experience in labour works were prepared to support it without

necessarily appreciating its full potential. There was no general awareness that the Minister had stipulated that 20% of work should be carried out by labour-based methods in the current financial year. Ideas such as 'technology neutral contracts' and simplified documentation for small scale contracts appear to have found no practical expression as MOW policy, although much is in hand on the various donor-funded projects.

The major activity over the past 1-2 years has been the move (encouraged by donors) towards the establishment of a Road Agency (TANROADS). In the SAR for the IRP this was expected to be in 1994 but a new government in the meantime seems to have caused both a loss of a momentum and many changes in senior personnel within MOW, and TANROADS has yet to become a reality. The immediate objective seems to be the appointment of a Chief Executive by 1st July 1999 - but parliamentary legislation still has to be passed. The details of the management structure and mode of operation have not been worked out and naturally there is a good deal of uncertainty (even apprehension) within the MOW staff about their future positions and roles. In the regions it is not clear where Regional Engineers will stand and already the MORALG is appointing its own engineers as advisors to the Regional Administrative Secretaries (RAS). This is not the ideal climate for a major initiative to institutionalise the stated labour-based and small contractor policy. None of those interviewed had any direct liaison role with the MORALG suggesting that individuals were directed to attend any inter-ministry meetings mainly on one-off basis.

The role of headquarters was described by some to be monitoring and advisory rather than directive, with final implementation decisions being in the hands of the REO. Thus a lengthman maintenance system was described for some Trunk Roads but this could change with a change of Regional Engineer. In Arusha, with the support of GTZ, petty contractors are used for trunk road maintenance.

A conclusion of the study into contracting out road maintenance (Marmo, 1995) was that 'there is evident lack of experience at all levels in the REOs despite remarkable basic professional qualifications ... Training opportunities for REOs staff both abroad and in-house have not been lacking' and these included procurement courses at ESAMI. Other shortcomings to be noted were,

- inadequate document preparation
- inappropriate contract conditions
- delays at all stages
- variation orders and claims
- minimum involvement of Materials Engineer (only 7 out of 20 Regions)
- inadequate budget

Since it is fundamental that good contracts need good preparation and supervision, many of the problems in contracting out roadworks can be laid at the door of the REO in not fully undertaking their contractual obligations.

### **3.2.2 Ministry of Regional Administrations & Local Government (MORALG)**

This Ministry was only created in 1998 and has taken responsibility for District Roads from the Prime Minister's Office (PMO). With 30% of the statutory Road Fund (November 1998) being allocated for district roads maintenance, systems are being put in place at the headquarters for agreeing and monitoring the expenditure. An initial transfer has already been made to all Districts for the first quarter of this year, and all Districts are requested to submit road programmes and action plans with future disbursements being made against reported and monitored expenditure.

This is one role of the Regional Administrative Secretary (RAS) engineer. Local Government

Reform is promoting the use of the private sector (contractors and consultants) and districts have the responsibility to decide on the most cost effective implementation. The extent of the district works department staffing will be dependent upon the capacity of the local consultants to provide the required services at the District level. Technical and administrative guidelines are issued to all Districts and this should include the labour-based road works technical manual (which MOW should provide to MORALG). The Ministry would also expect to have close liaison with MOW as the body responsible for road standards and technical control. The establishment of Tanroads is not seen as likely to effect the operations of this Ministry.

### 3.3 Donors

Donors continue to play a large part in the development of Tanzania and many of them have encouraged and supported labour-based technology over the last 20 years. The mission attempted to gauge the current policies and planning for future involvement.

NORAD	continues its (reduced) financial commitment to ATATAP (see Annex 4)
FINLAND	now going to Phase two (2) of the integrated road project with labour-based contractor training for road maintenance and a VTTP component. This all focuses on capacity building at the District level. NCC to undertake training with experienced labour-based TA in place. No inclusion of local consultant services. Lindi and Mtwara Regions.
UNCDF/UNDP	funding the Mwanza Region project of which the District roads is one component, developing labour-based contractors (and consultants according to the project document)
SDC	now in Phase 3 of the Roads Support Project and has been involved for 20 years. NCC trains contractors in both technologies. No arrangement for contractors to acquire equipment on permanent basis, they can only hire from REO, as an established cost centre operation (see Annex 11). VTTP component also exists in Morogoro.
IRISH AID	using labour-based method in community-based maintenance in Kilosa District and a VTTP component
NETHERLANDS	co-financing (with EU) a Kagera Road Maintenance Programme using consulting engineers (from Kenya) following a study and proposals by local NGO (AROF). Work is expected to employ labour-based methods.
DANIDA	funding a VTTP pilot using the services of ATTI for necessary training. District Engineer to provide technical support but there is a lack of capacity. Local consultants are readily available. Major DANIDA support is for Trunk Roads.
USAID	has a programme for over 11 years with MOW. It has been undertaking training in labour-based rehabilitation using NCC in several regions. Now the emphasis is at District level, with community participation coordinated by District Engineers - 20 Districts involved with the focus on establishing systems
EU	project in Ruvuma is about to start for backlog and routine maintenance of trunk and regional roads using small-scale contractors under the direction of the REO. Technology is open to choice. No training component is intended for small contractors and appropriate documents are permitted rather than EU standards. There is a separate coffee roads project in the Agriculture sector, which is being packaged for small contractors.
DFID	New involvement is being mentioned, to follow on the previous ODA

involvement in rural infrastructure. This is still currently being planned from Nairobi

#### World Bank

IRP II includes a component for VTTP and these activities have been moved from MOW to MORALG where a Technical Unit is being established with some TA. Labour-based technology will be appropriate. The rural roads component continues and the SAR emphasises the development of the local industry

The clear indications from a brief appraisal are that all donors are now very much looking to district level for development investment. All acknowledge that capacity needs to be built at that level, and all works are expected to be in the private sector, mostly using labour-based technology. Attitudes to the inclusion of a training component differ, with an interesting comment from USAID on the subject based on experience with IRP "don't train the private sector, give them the environment - sophisticated training programmes are a waste of resources" (consultants interview).

The potential for expanding labour-based technology is clearly considerable but it will not be all in the traditional area of rural road rehabilitation. District's needs will include VTTP and work in other sectors (not forgetting urban works which donors do not seem to mention). A variety of construction activities and approaches are likely to be needed and technical inputs will require imagination and innovation.

### 3.4. Contractors

#### 3.4.1. Contract Opportunities

The group which has been the most disadvantaged in the contractor training project has been the contractors themselves, supposedly the main beneficiaries. At the start their expectations were raised regarding the amount of work and support they would receive and possibilities regarding acquiring appropriate equipment. At that time this was the reasonable based on the evidence of projects elsewhere where initial success had attracted further funding and some continuity of workload for trained contractors. In the event it has been only the first Moshi batch which has completed the full training cycle through the demonstration, trial and standard contracts. In other cases full rehabilitation trials have been available to very few; others have been given culvert works while others still awaits this phase. Several were told that they must retain trained staff if they wish to be considered for eventual trials, an expense for which they receive no compensation.

In Arusha GTZ is providing funding for road maintenance contracts through the REO and the trained labour-based contractors are eligible to compete. The REO in Shinyanga claims that the trained contractors from the projects are the only ones available to him but that there are few funds for contract works. The Regional Engineers make no particular allocation for labour-based contracts and none of them mentioned specifically the Minister's budget speech, which stated the target of achieving at least 20% of works using labour-based methods in the financial year 1998/99. (Budget Speech, June, 1998).

Contracts are advertised and awarded through the Regional Tender Boards (RTB) which rely on the technical advice of the Regional Engineers. However, it appears that contract documentation and procedures still follow the conventional pattern with numerous bond and guarantee requirements, which the small-scale contractors are known to be unable to obtain. There is an ever-present fear of contractors defaulting and disappearing with an advance payment, yet the evidence from this country and elsewhere suggests that it is the small-scale trained contractors, which are the most reliable. Very few failures have been recorded whereas for contractors with other business interests financial pressures can lead to the necessity of using funds from one source to solve a problem elsewhere to, the detriment of the contract. Most small-scale contractors see this type of contract as

- ◆ A once-in-a-lifetime opportunity



- ◆ A chance to acquire training/skills
- ◆ A first step on the way to developing
- ◆ Usually an opportunity to acquire some basic equipment
- ◆ A more guaranteed profitable income

In general the most successful have been those who have few, if any, diverting interests and who put their whole energies into the business. Although one or two of the original contractors did leave the programme the Client did not suffer any financial loss as a consequence (one or two suppliers may have done).

Contracts need to be written to reflect and apportion the real risks, and not simply follow established convention. All these contractors are well aware that there is only one client for road works and few are in a position to diversify. Clients exploit this situation such that contractual disputes do not exist.

### 3.4.2 Contractors Comments

In the discussions with the Mwanza and Shinyanga contractors themselves many points were found in common.

- ◆ Obligation to keep staff without pay or work
- ◆ Originally understood they would be able to acquire equipment
- ◆ All told they would complete training phases-now being told there will be screening after the trials
- ◆ Established a Contractors Association, but it was suppressed (Mwanza)
- ◆ Cash-flow problems associated with cheque clearing difficulties
- ◆ Mobilisation advance was only sufficient for tools
- ◆ Equipment hire through NCC more expensive than allowed for in the rates, but no alternative
- ◆ Lack of cash has reduced labour employment; therefore productivity; therefore lack of cash
- ◆ Minimum payment certificate value prevented them claiming for initial work done.
- ◆ Labour taxes (10%) were not included in the rates build up
- ◆ 2 month trial contract too short to reach full production
- ◆ The situation is one of 'survival not development': 'its not a question of being happy but a matter of being in the project'
- ◆ Labour-based construction is very popular in the communities – 'don't listen to those in headquarters'
- ◆ The situation in farming is worse
- ◆ Technical Assistance is far more directive than advisory
- ◆ Joined the project because the resource they had was labour
- ◆ They have no access to credit in formal commercial market
- ◆ For long periods there was no communication to inform them what was going on
- ◆ Given the resources 2 km rehabilitation per month is achievable

What is remarkable is the enthusiasm for the project still retained by the contractors despite all the set backs, but in terms of work availability it was stated often and from different sources that the tendering procedures at Regional level are not transparent. This can particularly affect the smaller emerging contractors who are not well 'connected'. Later in their development they will need to operate in the realities of the marketplace but it appears that the present situation is more akin to being stifled at birth.

In Shinyanga the example was given of three of the trained contractors, which were awarded adjacent 12 km roads contracts through the District council to use labour-based methods. It is reported that a foreign consultant (Netherlands funding) was then engaged for supervision and instructed a change in technology to a traditional equipment-based approach.

Regional Engineers agreed that contracts could be restricted to certain groups of contractors and none admitted to any negative pressure against the use of labour-based contractors (a point that had been asserted in some discussions in headquarters). This was also confirmed at District level where the benefits of increased local employment for the local revenue funds were noted. In Magu District the local MP (the Minister of Communications & Transport) was visiting both the labour-based trial contract sites in the District, at the time of the team's visit.

In Arusha under the GTZ programme some of the Moshi trained contractors were employed for initial road rehabilitation contracts and the emphasis is now on routine and recurrent maintenance. Individual petty contractors are being given 10 km lengths of roads, (including the trunk road) on 3-month contracts based on a simplified Kiswahili document with fixed rates developed by the programme. At a higher-level competitive bidding is introduced with contracts including a 15% advance payment without bond/guarantee. Training is offered during a contract, with short courses/seminars/workshops. Contractors in Arusha who embarked on the NIGP/NCC programme did not reach the trial contract stage. However some of them have been involved in the GTZ programme.

### 3.5 Consultants

In the Moshi project document the use of consultants and their need of training was mentioned four times and during the project a proposal was made for a study of the role of consultants. However, nothing was done and an opportunity was missed. In Mwanza although national advertisements were published requesting consultants' expressions of interests there was again apparently no follow-up with those who responded. In November 1996 consultants for NCC (CIDA-funded) produced a report, which examined the development and training needs of local consultants in Tanzania to allow them to participate more effectively in the IRP. During the study the team conducted two demonstration-training seminars. The report proposed a Training Plan and anticipated a second phase of implementation. This did not take place. Then in 1998 NIGP called for proposals for a national training programme for consultants and the best of these has been assessed, but again the resources are still lacking.

The reasons why such training for local consultants (and even many of the major foreign firms) in labour-based roadworks is needed are.

- ◆ traditionally roadworks have been force account operations, so few consultants (except those ex-MOW) have experience
- ◆ labour-based operations have generally used Technical Assistance personnel (from ILO or elsewhere) who have not been permanent staff of consulting firms
- ◆ most consultants tend to be conservative, favouring the conventional, familiar approach

The resources needed to implement such training need not be as great as might appear since, as with contractors, much of it can be on-the-job eg preparation of actual designs, documentation; site supervision; work measurement and interim payment certificates. Such tasks on real worksites have to be paid for by the Client and this should apply to supervised trainees. This principle was adopted in Zambia after some consultants had first volunteered their staff at their firms' expense. A fee per kilometre of completed design and documentation by the trainees was then paid to the firms.

As with all private sector training the companies will be expected to contribute, which most will be willing to do provided they see real potential benefits in terms of profitable opportunities.

#### **4. APPROPRIATE TECHNOLOGY ADVISORY & TRAINING PROJECT (ATATAP)**

##### **4.1 Ministry Of Works (MOW)**

###### **4.1.1. Project**

This project is part of the NORAD funded Road Sector Programme (component 8) which aims to assist GOT policy to encourage use of labour-based methods and local resources. NORAD was instrumental in the initial introduction, over 20 years ago of labour-based methods (LBM) in the country - initially under force account operations. ATATAP is a national support programme for these activities and it has included the establishment of the advisory, supervisory and co-ordination unit (ATU) and two training institutes (ATTI) one at Lushoto, Tanga and the other in Mbeya (1993) with the objective of training inspectors and foremen for MOW Regions.

###### **4.1.2. Progress Reviews (1995)**

After two years (1995) a major Progress Review workshop was held in Tanga at which some notable contributions were made. The Director of Roads presented a paper, the "Strategy on Labour-based Technology up to the year 2000" in which he highlighted the GOT commitment at policy level to the mobilization of private contractors and the increased use of labour based methods in the context of the IRP. Amongst the priority objectives for increased emphasis on LBM are the creation of employment and the reduction of the foreign exchange requirements. He noted the launch of the contractor training programme and the decision to scale down force account operations in favour of the private sector. He emphasised that all MOW staff must play their part in implementing this strategy. Nearly four years later it is not clear that these stated objectives are much closer since labour-based activities appear to have continued very much on a project (donor-funded) basis and the trained contractors have hardly had a single contract after their initial training. Some of the training had also not been completed.

In the review of progress it was noted that the ATU and the ATTI were established and operating with some 71 foremen and road inspectors trained. But no progress had been made on the proposed technical manuals (finally printed early in 1998). A draft of the training manual was produced in 1995 from which training modules were to be produced. Up to that time individual instructors were using their own material.

In the light of the Director's remarks concerning the move towards the private sector it seems curious that the workshop does not appear to have discussed the future scope of the training at the ATTI. It was stated as a key output of the project that 180 foremen and inspectors from the REO were to be trained (but still on the basis of force account operations).

The various procurement and administrative problems were highlighted as reasons for slow progress in achieving goals, together with the departure, after a year's contract, of the ILO's Chief Technical Adviser (CTA).

Although a paper was presented giving the details of progress on the NCC contractor training in Kilimanjaro region there is no recorded discussion as to what specific linkage or involvement ATATAP (ATU) should have with this activity, if any. As with many other projects it appears that MOW was content to allow its implementation (by NCC as government agency) to be guided by others. Although not stated in the workshop proceedings subsequent information is that ATU was represented on the project Steering Committee and thus did receive documentation/reports etc.

An ILO/ASIST contribution to the workshop raised a number of issues for future direction, most of which still appear pertinent four years later

- ◆ Should LB works continue as a series of isolated projects?
- ◆ Is there an enabling environment for a LB programme?
- ◆ Is there real commitment and policy direction for LB works?

- ◆ What are the real priorities in the road sector?
- ◆ Are current training programmes adequate?
- ◆ Do we need more LB contractors?
- ◆ Is it time for a change?

It was noted that the cost of road rehabilitation on the Moshi project was around \$ 12,500 per km, which was about half of the equivalent equipment-based contract cost.

Two actions were proposed by the workshop:

- A report to be prepared by the ATU providing an estimate of the potential for employment creation in the roads sector in Tanzania.
- A series of awareness-raising seminars on labour-based methods to be prepared and run by the ATU for District, Regional and Headquarters staff involved in roads.

An immediate output was a report "The estimated potential for the use of labour-based methods in roadwork in Tanzania" which was produced in June 1995. This indicated that there is potential on all classes of roads for the creation of 75,000 jobs, with 16,000 that could be created under the IRP. The first series of awareness seminars were held in September/October 1995.

#### 4.1.3. Further Progress

Progress was reported in a document '1996/97 national labour-based road sector programme and policy guidelines' (June 1996) (in which it was noted that the second phase of awareness seminars were yet to be held). This report highlighted in particular,

- The need for slicing (or packaging) of works to be suited to the small-scale contractors operations
- The need for technology-neutral designs to be equally suited for labour-based and equipment-based methods.

The document also contains an analysis of the various labour-based projects ongoing; the various types of labour-based contracting; and it identifies all MOW staff who have had some involvement/experience/training in labour-based methods. There is no indication that this document was officially adopted as MOW policy.

Subsequently the ILO CTA was not replaced and the Technical Assistance to ATATAP was reduced to the two Training Advisers at the ATTI (Mbeya and Lushoto). Since the CTA of the Moshi project and the Training Adviser in Lushoto had previously worked together on the Ghana project (as indeed had the ATATAP CTA) the Moshi project gave some input to the Lushoto training to illustrate the contracting situation which MOW inspectors might be expected to meet on return to their regions. This was supplementary to the standard syllabus of the ATTI and so remained a personal initiative.

This serves to illustrate the wider issue of the fragmentation of training activities within MOW as many of the donor-funded projects have included their own training component. So that as ATATAP progressed, far from the training facilities expanding their activities and capacity the result was a closure of Lushoto and consolidation of training at Mbeya. One of the classic arguments used in the area of training is that public funds should not be used to finance/support the private sector. But in reality public sector institutions are often heavily subsidised with real training costs not being charged to other ministries for use of the facilities (or, if charged, then not paid). This situation makes the effective use of such institutions extremely difficult and many countries have taken decisions to establish such institutions on a more commercial, semi autonomous, basis. It is noted for example that the ATTI does not have its own account or

autonomy to run courses by charging fees and is therefore totally dependent upon MOW budget. Courses can thus only be run as and when budget is available, thus negating any possibility of operating an effective training programme or utilising the available facilities such as equipment on hire basis. Much of the training at the ATTI is site-based and require funds for the physical construction works which is not always available.

In contrast the Vocational Education and Training Authority (VETA) is funded by an employee levy and operates on a countrywide basis with accredited courses. Some short courses on road making are seldom conducted. However, intensive special courses such as 'road-maker course' doesn't exist and there is a clear potential for such training. Some collaboration between VETA and ATTI activities is required to widen the scope and integrate their training into a nationally recognised programme.

Since the Regional Engineer's Mechanical Workshop (at Mbeya) has been successfully established on commercial lines, a precedent would seem to exist for a training institution (ATTI and Morogoro) to be the same but it has not been possible to find evidence of these ideas being discussed. When mentioned to the Permanent Secretary the concept was considered worthwhile. The MOW is currently discussing the idea of having its training institutes operating with semi-autonomous entity. Human resources development is not seen to have a high profile in MOW, yet so many of the Engineers have enjoyed further training opportunities in overseas MSc. at Kisii and on short course training (e.g. Road Maintenance in Africa - Crown Agents/SWK and TRL UK). In this respect it is interesting to note a comment in the study report on "Contracting of road maintenance in Tanzania" (Marmo, 1995) that it is .... "Not lack of qualified and trained staff but rather lack of application of the so acquired practices and techniques. For example, most of the engineers interviewed admitted they never referred to any training materials or manuals". If that is truly the situation questions might well be asked about engineers' basic training and their commitment to seeking the most technically and cost effective solutions to their day-to-day engineering problems.

#### **4.2 District Roads**

The 1996 report on road sector programmes and policy guidelines mentioned above also covered an assessment of the programme (1996/97) for District roads, which at that time were under the Prime Minister's Office. 20% of Road Fund was allocated to these roads, which in 95/96 was estimated at \$ 1.2 million and in 96/97 at \$ 1.8 million. The report computes the achievable outputs for this level of funding. In addition there are several Districts enjoying donor support and the new pilot projects for VTTP are also mentioned. Thus is identified another major market for the development of labour-based technology activities and it is suggested that in monitoring the national programme as a whole the ATU should be assisted by the PMO in respect of the District roads. It is not evident that any such formal arrangements were made.

Recently the District roads have become the responsibility of the Ministry of Regional Administration and Local Government with the District Councils being autonomous local government authorities. District works departments are established with District Engineers being appointed (with 120 Districts this is by no means complete). The ATATAP does not appear to have discussed or initiated any formal links apart from one ATTI training course offered to staff from two Districts and some informal contacts by ATU as detailed in the following section.

With VTTP as another area of potential involvement it was re-assuring to be told that some donors are intending to use ATTI as a training facility for their projects. The training content in this case would encompass other activities besides roads and wider expertise will be required of the trainers. The essence of the VTTP philosophy is to make communities the initiators and the owners of the projects with as much participation in implementation as possible. One tailor-

made course has been developed at ATTI and links will be established with other institutions. An area of particular interest to VTTP is that of intermediate means of transport (IMT) and given more flexibility of operation ATTI might venture into this field. Since VTTP is currently only operating at pilot level in 7 Districts the potential for ATATAP involvement would appear considerable.

### **4.3 Appropriate Technology Unit (ATU)**

#### **4.3.1. Objectives**

The ATU as part of ATATAP was established in 1993 with NORAD support based on an initiative of the MOW supported technically by ILO which was also at that time involved in provision of Technical Assistance to the contractor training project in Moshi. The preliminary objectives of the ATU were to,

- ♦ Coordinate ATATAP activities (very much centred on establishing the ATTI at Lushoto and Mbeya)
- ♦ Take an advisory role for Appropriate Technology in roadworks
- ♦ Look to the training of higher levels e.g. Engineers. through workshops and seminars.

The ATTI were established with the limited intention of training supervisors for Regional Engineers Offices (REO) for the performance of labour based force account activities, which NORAD was supporting in Tanga and Mbeya Regions. (it is possible that an opportunity was lost in not establishing a link with the ongoing contractor training at that time).

At the workshop in 1995 it was agreed to produce Technical Manuals for labour-based roadwork maintenance and rehabilitation and these were commissioned from a consulting firm with considerable experience in this field. The final production of 3 volumes (out of 4) was achieved early in 1998. Meanwhile an extension of ATATAP Phase I was requested (from 1997) to cover this activity. Also in 1996 the NORAD review team decided upon a reduction of the institutional support to the ATTI and ceased the financing of physical and capital works. In the light of the reducing activities of the two ATTI they were consolidated into one (based at Mbeya) but still looking to train public sector staff at supervisor/ inspector level, mainly through the medium of practical site works. Thus both ATTI and the ATU remained very much project oriented and it is only recently that training for District staff and proposals for VTTP initiatives have been added although the first link between AATI and VTTP was established in 1997 with a footpath training report. However, since funding for the practical roadworks (due from the Road Fund) has not been consistent, courses have been irregular and subject the postponements.

In view of the stated policy within the IRP that works would be moved into the private sector. Efforts are required to have a parallel move within ATATAP to consider the expected training needs in that area and to adapt and widen the training scope of the ATTI. There was clearly going to be a diminishing number of MOW supervisory staff requiring training for force account operations towards those required for contracted works. Also, engineers were continuing to attend courses at Kisii, in Kenya at a considerable expense, ATTI might be used for similar training. It is worthwhile now for relevant authorities to evaluate the possibility of transforming the institute towards undertaking this assignment.

#### **4.3.2. Institutional Position**

The ATU as a Unit in the MOW did not enjoy a very prominent status, being headed by a Senior Engineer, and its initial effectiveness would have depended much on the initiative and drive of the incumbent and the positive support he would have received from the Director and Chief Engineers. It would not have been easy to carry out a wide brief within MOW without

such authoritative support. When the Directorate of Roads was divided into Trunk Roads and Rural Roads, the ATU position became, if anything, of a lower profile, being assigned to the Design and Construction, (Rural Roads,) section, thus not specifically having any voice in rural road maintenance let alone Trunk roads. With a multiplicity of sections all operating very much on a vertical management structure any cross-fertilisation of ideas or policies relies to a large extent on personal relationships and often engineers' own experience or lack of it (e.g. in labour-based technology). The same is true for Regional Engineers, who have direct responsibility to the highest level and who enjoy a largely autonomous role in deciding how works in their Regions shall be carried out.

It is perhaps significant that on MOW organization charts the ATU often fails to appear because it is implementing the support project. This doesn't imply that its role is still uncertain and its presence is only transitory. Towards the end of the project, proper institutionalised unit forming part of the MOW organisation structure is required. However, this situation may be of only minor concern compared with its lack of influence in the area of District Roads where the technology would be expected to have a huge potential for development, and which are the responsibility of the District Councils. Each council is expected, in due time, to have its own District Engineer and each Regional Administration will have an engineer posted in an advisory capacity to assist and guide them and the Districts in technical matters (including roads). If labour-based technology is to be nationally adopted and effectively practised it is these engineers who hold the key and they are outside immediate MOW influence. The major question to be resolved is therefore how will a unit such as ATU be established to have a wider influence beyond the immediate confines of MOW to include all rural and urban infrastructures. It is already noted that the VTTP has been relocated to the Ministry of Regional Administration and Local Government, and this is another area where Appropriate Technology is the guiding force. It could be concluded that the ATU should not be marginalized especially when there is a proposal to establish TANROADS as a road agency. This proposal is not yet developed in sufficient detail to know precisely which functions will remain in a (slimmer) MOW but it might be expected that ATU would fall into policy; technical standards and advocacy and thus remain in MOW.

Also under discussion will be the future of MOW training and the training institutions, currently under the Administration and Personnel Directorate, but with budgets to be agreed by the Planning Directorate. It could be strongly argued that if, for example, materials testing facility is to have a wide, commercially oriented brief to serve both private and public sectors nationally then training institutions should be established to enjoy similar autonomy to serve the needs of the whole construction industry, with labour-based technology being a component and not seen only as a specialised, isolated activity.

#### **4.3.3. Policy on LBM**

The impression is that, as with other areas of activity within MOW, there is an absence of formally documented policy on labour-based technology even though its introduction can be traced back nearly 20 years. Various statements, e.g. letter of Transport Sector Policy; Minister's budget speech; ATU policy Guidelines document; make specific reference to its 'encouragement'; 'development' etc but there is little more substantial in the way of instruction and directives. To support this impression it was noted that currently, apart from other policy documents already mentioned, MOW Pavement and Road Design Manual is under discussion, which might seem surprising in view of the IRP activities, which started in 1990. Such policy documents and technical standards might be expected to lead a major investment programme rather than follow it.

#### **4.3.4. ATU Seminars**

In its effort to gain national awareness and acceptance of labour-based technology within MOW the ATU (in 1998) conducted 2-day workshop/seminars in each of the 20 regions, mainly for

MOW staff but also giving invitations to Districts. At the same time copies of the Technical manuals were distributed and their contents explained. A summary report (Oct. 98) highlights the comments, recommendations and suggestions from these meetings, which contain assurances regarding the targets of work to be allocated to the technology. What seems not so assured is a system within the Headquarters, which can ensure that the manuals are actually used and that the targets are met. Regional Engineers gave the impression that it was their personal responsibility regarding the choice of technology, and some seemed unable to recall the seminar promoting the manuals.

ATU as a result of this nationwide campaign has been asked to make copies of the manuals available to the Districts and proposals are in hand for a reprinting. But again, this is seen more as an individual District initiative rather than a policy decision, and it is uncertain which Ministry will bear the cost.

#### **4.3.5. Coordination**

In its coordinating role ATU's success is less obvious. It is difficult to dismiss the idea that many projects remain donor driven (maybe due to some extent to the apparent absence of clear MOW policy) and within the MOW these projects/programmes are coordinated in CODAP. Over the last 1-2 years most of its time has been taken up in the discussions and proposals concerning the establishment of the Road Fund and the Road Agency. The impression from CODAP is that labour-based involvement comes when the donors are financing (if that is a technology the donor supports). Since CODAP is not concerned in the day-to-day project details their implementation is very much a matter for the project management, which may well involve foreign consultants/advisers not specifically experienced in labour-based roads technology. ATU finds itself one stage remote from this and has no designated involvement, which could only come through formalising its participation in CODAP activities at project proposal stage.

Even where a project (GTZ-Arusha) claims to have submitted proposals and draft small scale contract/petty contract documents to MOW for comment these have not found their way to the ATU. Yet many donor-supported projects are using a variety of different approaches/documents/procedures successfully from which the Ministry in general is not learning or benefiting. One Chief Engineer suggested that consideration is being given to producing more 'neutral' contract documents applicable also to labour-based contracts (e.g. removing the plant/equipment requirements) whilst, at the same time, the consultants to ATATAP are producing (Vol. 4) contract documents specifically for labour-based contracts (based on what is currently being used in Tanzania and elsewhere).

The Contracts Control Unit, on the other hand, seems to be guided firmly by the demands of donors and is not much involved at the small-scale contract level. The nearest to the small-scale works in its area are those under the World Bank Smaller Contracts documents, which stipulate a limit of \$10 million in contract value (certainly not small works by the standards of most developing countries). Of more relevance would be ICE (UK) Minor Works Contracts or FIDIC Short Contract neither of which the Unit has experienced.

Although the new technical manuals was the subject of headquarters discussions, one activity proposed by ATU for which resources and a suitable time frame have not yet been found is a headquarters based seminar/workshop on the wider issues labour-based technology at which both awareness and discussion about the problems/questions raised in the Regional seminars would also be highlighted. It might be reasonable to question why this has not taken place sometime within the 6 years since ATU'S inception, as it might have been an appropriate launching event. This would be linked to the question as to why MOW (and the REO) were not more formally involved in the Moshi contractors training project since this coincided with formation of the ATU and might have been a valuable practical example for general awareness. It is reported that some site visits by MOW staff were organised to that project, on an ad-hoc basis.



ATU sees this Study and Workshop as being a suitable forerunner to an 'awareness' initiative.

#### 4.3.6. Terms of Reference

One comment on the ATU terms of reference/objectives statement would be of the generalised nature of the objectives and outputs (it is understood that annual workplans were agreed and these were more detailed). A review of the project matrix for Phase II sees ATU activities centred in Rural Roads; the use of the technical manuals; the technology included in the RMMS (which appears dormant); and initiatives on tools and equipment.

The ATTI is to continue MOW staff training (foremen/inspectors) with other courses 'as required'. There is nothing to suggest wider, more national roles for either, or any specific brief for collaboration with MORALG (though ATTI has one activity of familiarisation for village and district level). Relations with outside bodies such as NCC and CRB are not mentioned anywhere despite that the institute could benefit and utilise the experience from them. However, there is an activity relating to the tools and equipment manufacturers and suppliers. Accreditation for training may also be another area needing action. The ATU's future within MOW, Tanroads or elsewhere should also be of major concern at this point.

The contribution to the RMMS is mentioned but not to the Road Design Manual which might be equally relevant. Some major issues about future direction identified by the team were discussed at the consultation workshop.

- ◆ status of ATU and appropriate staffing
- ◆ location of ATU within Ministries or elsewhere
- ◆ wider brief encompassing private sector
- ◆ Coordination role with NCC/CRB etc
- ◆ ATTI future training direction (semi-autonomous or other)
- ◆ relationship with MORALG/Districts
- ◆ role in other sectors for promoting LBM
- ◆ influence in policy directives (design: documentation: technology choice)

#### 4.3.7 Tools Issue

A much-neglected component of any successful labour-based contractor development programme is the issue of good quality hand tools. Without these the site productivity of the contractors is seriously restricted and often of poor quality tools result in injuries, or at least a disincentive, to workers. Many projects initially import tools manufactured to high specifications but thereafter contractors are left to the vagaries of the local market. Generally the local quality is exceptionally poor, particularly for the impact tools. Little development in the local market takes place over the life of a project but for any programme, which wants to go national local manufacturers' need to be sensitised and supported to see the potential of the market.

ATU has a brief in the project matrix (ATATAP II) to assess the need for appropriate equipment and tools for labour-based roadworks in the country and identify possible manufacturers and suppliers. This is a major task and would need coordinating with other players, who have involvement with the materials/supplies side of the construction industry. There are drawings and specifications in Volume 3 of the ATU technical manual and initially funding would be needed to manufacture some prototypes. Then contractors will need convincing that the additional expense has profitable implications. It could be a potential project for NIGP involvement since manufacturing units could be established in the Regions with employment generating possibilities.

This should be a major focus of ATU activity as soon as possible so that some practical

proposals may be prepared for funding, and since it is fairly specialised field ATU/NCC staff might require some experienced assistance.

## 5. CONTRACTOR TRAINING PROJECTS (NCC)

### 5.1 Pilot Project - Labour Based Road Contractor Training (Kilimanjaro Region)

This project was aiming at establishing a Labour Based contracting capacity in two regions (Shinyanga and Kilimanjaro) to effectively execute road rehabilitation and maintenance works as well as establishing the capacity within NCC to continue with the training programme. The target was to train thirty (30) contractors within the two regions who should be able to undertake the road works addressing the issue of continued maintenance and rehabilitation of core roads in the country. During the training 265 km of road was to be rehabilitated and maintained.

By the end of July 1995, twenty four (24) contractors were trained successfully and about fifty (50) km were rehabilitated and 162 km of roads were placed under maintenance.

The initial project based at Moshi was established along the lines of the Ghana project (1986) but without the provision for all the successful contractors to acquire the appropriate equipment through financing arrangements. It was expected that the open market would be able to provide for the contractors' needs. When this proved to be difficult some contractors procured water bowsters and rollers through the agency of the project making direct payment to suppliers with reimbursement through the certificates. Guarantee and bond arrangements were also relaxed. There was no default on repayments.

NCC was the government-implementing agency with Technical Assistance (CTA and Training Adviser) provided by ILO (UNDP-funded). USAID provided funds for the physical works. NCC provided 7 newly recruited engineers for secondment to the project, who proved to be very enthusiastic trainees in the technology and were in due time able to take over training and supervisory responsibilities. NCC was also responsible for the equipment procurement, both for the site training works and the pool, which was agreed to be available for contractors to hire when it was realised that the open market had insufficient capacity (e.g. in vibrating rollers). This procurement process suffered serious delays eventually taking around 36 months (CTA Terminal Report), for reasons not fully explained, and the whole Phase 1 training was carried out with hired equipment.

From the outset MOW did not have any 'hands on' involvement, despite being the 'owner' of the roads being improved, apart from membership of the project Steering Committee. Thus the REO was also not formally integrated into the management despite being the office responsible for continuing maintenance and for the award of the future contracts for which contractors were being trained.

This situation was perpetuated when NIGP was established and became subsequently the client and source of funds for a similar project to take off. It matches the same way as other donor funded projects, which often operate under their own systems, the contractors training projects have suffered in the same way. The key element of some assured potential workload for the newly trained contractors has been absent. One outcome of these arrangements was the acquisition by NCC of large capacity water tankers instead of the required (and appropriate) water bowsters, which might have had more to do with perceived needs of the construction industry as a whole rather than the project in particular. The first phase of the Moshi training at least saw the contractors complete through the standard contract stage (i.e. the full training cycle) although at that point there was no funding allocation for further work.

A valuable source document giving project details, including profiles of the participating contractors is the Status of Activities Report 1995. The issues of equipment procurement; continuity of work/funding; funds transfer; and the supervision role of REO were raised in that report (which was included as an Annex to the ILO Labour-based Contracting Study 1995)

## 5.2 **Pilot Project - Labour Based Road Contractor Training (Arusha/Mwanza Regions)**

### **NIGP Funded Project**

#### **5.2.1 NIGP/NCC Proposal**

At the end of the pilot project in Kilimanjaro region in 1995 a capacity had been established within NCC for labour-based contractor training. Basing on this fact, NIGP appointed NCC to conduct a similar training for Mwanza and Arusha Regions. This is in line with the light of the NIGP objective statement, which includes.

- ◆ To strengthen *private* Tanzanian companies to be able to execute infrastructure rehabilitation and development projects
- ◆ Encourage greater *private* sector participation in the delivery of services.

Although NCC is not a private company, the aim was to use it to train private contractors. However, there seemed to be no suggestion of any consultant to be involvement at this point. NIGP was a UNDP initiative through which its development funds were mainly channelled but which seems not to have had overwhelming support from other donors. The expected funding for the NIGP/NCC expansion was not fully realised and contractor training was not completed.

UNCDF already had the Mwanza Region Project formulated, one component of which was the District Roads Rehabilitation and Maintenance project, for which District Councils would be the Clients/Owners, (the correct responsibility). The interspersing of NIGP, temporarily during construction, in that Client role may be a short term advantage in getting things done but questions are raised about the long-term sustainability if the 'real' owner has not been fully involved from the outset.

At this point there were 12 contractors trained and waiting in Shinyanga, and by the end of 1996, 12 contractors trained on model roads in Mwanza were awaiting trial contracts. Another batch from Arusha had been initially trained at the Moshi facility, which NCC had retained. The ILO CTA had left in June 1996 despite being initially willing to continue on the UNCDF project, which would have given an essential continuity. International bureaucracy however failed to provide him with a contract before an attractive alternative offer was made.

#### **5.2.2. UNCDF Project**

Trying to unravel the history of the project development from this point has proved difficult within the short time of the study, not least because of the variety of understanding of the facts, which seems to reside with each party involved. The UNCDF project document was detailed, practical and set out clearly the implementation arrangements with such phrases as.

...more achievable role for District Councils...  
to become facilitators rather than executing...  
planning, directing, controlling...  
works by the private sector (contractors and consultants)

...construction and maintenance will be contracted out to private contractors, and design and supervision to local consultants, with District Councils as the Clients.

This is not consistent with NIGP continuing a role as Client or the NCC implementing design and construction supervision duties beyond trial contracts. With the eventual break with the project and NIGP, a different arrangement was embraced, namely one in which the District Councils act as clients with supervision services for full contracts undertaken by independent consultants in collaboration with District Engineers / technicians.

The document also detailed the estimated rehabilitation costing, which was to become a bone of contention upon the eventual arrival (July 1997) of the Programme Management Adviser (PMA) as the listed prices were nearly twice the industry standard.

- **Resources**

In some areas it is hard to find labourers for the job. (It is hard work and not well paid). LBT needs more supervisors, which might be scarce. Appropriate equipment is not available, or it is difficult to get a loan. Interest rates are high and banks require a guarantee. The tender process is not transparent.

iii) **Training institutions**

- **Objectives**

There are a variety of different training institutions with a variety of different goals.

- **Information**

Not all the training institutions are considered to be appropriate.

- **Resources**

It is difficult to find well skilled consultants in the particular field.

It is questioned if the training institutions would be economically sustainable.

...the Steering Committee was supposed to meet quarterly but managed to have only three formal meetings

...MOW headquarters was invited to be on the Committee but its member did not attend any of the meetings (last meeting October 1996)

...trained staff soon found themselves idle ... many of them frustrated

Some of the points were really based on actual situation, for example the training by NCC was for FTC holders, but FTC holders were not in place therefore people with ordinary and advanced level of secondary education were included in the domain of trainees.

One of the positive conclusions of the report is that labour-based technology has been demonstrated as technically and financially viable (but this did not need proving again in Tanzania).

Some comments on the draft report, submitted by ILO ASIST, were not incorporated into the final version.

Many of these issues were considered seriously as key constraints of the project progress and the situation was addressed by concern authorities.

#### **5.2.4. UNCDF Inception Report**

On the basis of the UNCDF consultants report, the arrival shortly afterwards of the PMA and the assurance of the funding it might have been anticipated that major progress would be made. Yet from the inception report, and from the sustainability point of view, it is clear that the PMA was of the opinion that several key issues were still obstacles to further implementation. Some of the highlights of the inception reports are as follows

- no technically qualified person attended training from the contractors
- no mechanics had been trained
- no consultants were available so none were to be trained
- trainees from the Districts were not the required academic standard
- no technically qualified personnel were available at District level
- Districts Councils staff is grossly inadequate to handle project activities. They need to be manned by adequate numbers of technical staff. Then and only then should the project commence
- Work on trial roads cannot commence because
  - ◆ Cost estimates by NCC far exceed estimates by the PMA of UNCDF in Mwanza
  - ◆ Requisite technical staff not available
  - ◆ Prepared contracts do not fulfil basic requirements of contractors being exposed to all construction activities
  - ◆ Future contracts would be excessively expensive
  - ◆ Contractors should get equipped before commencement of trial contracts. Without this the lease-ownership time would be insufficient for repayments.
- Trial roads have not been selected in consultation with the Districts
- Modalities of contractors' lease-ownership need to be worked out before initiating procurement of equipment

It is to be noted that the Inception Report did not constitute official UNCDF/UNDP policy or opinion, and that many of the recommendations and viewpoints were not embraced as providing apt justification for further delays. Yet some issues needed to be resolved, and the

commencement of the first trial contracts faced initial difficulties. Advance payment cheques (cash for mobilisation) could not be cleared into the contractor's accounts even by the end of the contract period. The main reason on this anomaly was related to bank transactions and considering the consequences UNCDF allowed for an extension of contracts periods.

The project document, as stated above, includes a clear role for local consultants. While this did not achieve great support from the PMA in his inception report, it has become a major focus of the project. With the change in management of the project, considerable attention has been paid to this dimension and the project is planning to embark on a major training exercise for local consultants in connection with such projects. The intention is that private sector local consultants will be fully involved in the further implementation of such projects starting with the second trial contracts. As a non-private sector entity, the role of NCC will therefore cease with the completion of first trial contracts.

More fundamentally the implications of the direction of the Inception Report towards establishing fully staffed, fully functional District works offices would be seen to be contrary both to the spirit of the project document and the policy of government to reduce public sector staffing levels. This recommendation was also rejected by UNDP/UNCDF and, for sustainability and capacity building purposes, the project only required District engineers and Technicians to be in place for the successful implementation. Achieving this took nearly one year to accomplish because of unclear recruitment and transfer policies within the Government, and constituted a major reason for the initial delay of the trial contracts.

While this project fell victim to a lot of start-up problems associated with projects of this nature, a concerted effort has been made on the part of both UNDP/UNCDF and the Government to rectify these. A new PMA with considerable experience from a similar project in Zambia was fielded in 1999, the National Programme Coordinator has been given an increasing stronger role in the continued implementation. The recruitment and fielding of both support staff and National Road Advisor has strengthened the Mwanza office considerably. In addition, extra staff has been placed in Dar Es Salaam to provide back stopping to the project. Nevertheless, many of the problems associated with getting the project off the ground should be noted as lessons for future projects of similar objectives.

### **5.3 Other Projects**

NCC has been involved in other contract training projects and more are at the preparation stage. In Morogoro the training focused on technical and management issues as well as financial management with both labour-based and equipment-based technology. This has enabled contractors to choose the technology better suited to the particular project circumstances - which is the ultimate objective. Basing on the fact that NCC has the role of promoting the development of the local construction industry, it was their responsibility to influence the availability of the works with clear documentation, which gives the contractor the chance of choosing between the two alternatives. But this is not the case in practice, actually all contract documentations in road works clients' offices are biased towards the use of heavy equipment hindering the development of the use of LBT.

In all these interventions NCC still operates apart from any recognised institutional framework without which it is difficult to see a sustainable basis for construction industry training being established. The 'gap-filling' role appears to have no planned conclusion. There is no suggestion of this training receiving any national accreditation. Clear plans on reliable and sustainable training arrangement should be explored now. Possibilities of NCC joining efforts with other training providers such as ATTI with the aim of establishing an institutionalised training could be very useful.

### **5.4 Standards and Costs**

There has not been any question raised about construction standards using LBM in Tanzania and all projects assert the technical and economic viability of the technology. The site works

visited by the team confirmed these conclusions and the only concern was a general lack of productivity and expectancy about output. Whereas other countries look to 2km of rehabilitated gravel road per month as the norm targets in Tanzania seems to be nearer the 1km figure, slipping back from original achievements in Kilimanjaro. Elsewhere it has been shown that productivity of around 2km (at about \$12000 per km) gives contractors the turnover required for repayments and profits to enable them to reinvest in additional equipment if necessary. Anything less also tends to confirm the erroneous impression that LBM are unacceptably slow.

In countries with similar labour rates to Tanzania costs in the \$11000-\$13000 range are still the average for roads in normal terrain and LBM are generally assessed as 20-30% cheaper than equipment-based. This was the reason for the concern on the Mwanza project when NIGP signed two initial trial contracts at figures of \$28000 and \$25000 per km. They were subsequently revised. Generally insufficient data is available (as elsewhere) to make real comparisons between LMB and equipment.



## 6. STUDY FINDINGS

### 6.1 Summary

The following is a summary of the main findings of the study deduced from the variety of documentation and discussion information, which were available to the team.

#### **Policy**

- i. Labour-based technology in road construction has been operational for over 20 years yet still it appears fragmented and essentially donor-driven in its implementation. Nobody questions its viability.
- ii. The construction industry as a whole (of which labour-based activities are a part) has ongoing problems many of which have existed for a long time, for example
  - Access to credit/equipment/materials/resources
  - Lack of technical skills/expertise
  - Lack of work continuity
- iii. Many previous studies and reports, have highlighted the above problems, including,
  - Need for contractors training
  - Need for local consultants training
  - Contracting out road maintenance
  - Comprehensive review of IRP
  - Construction industry policy document
  - Labour-based road sector programme and policy guidelines
  - Assessment of labour-based potential in roadworks
- iv. Many of ideas and proposals contained in these reports are still pending awaiting either the resources or the political impetus for implementation.
- v. Despite stated government objectives and major investment from IRP hardly 10% of that expenditure went to the local construction industry (this figure is disputed if all donor investment is considered).
- vi. Donors are perceived (and accepted) as setting standards and implementation systems with conditions attached to projects and their own procurement procedures followed.

#### **MOW**

- vii. ATU, being a small Unit within one branch of Rural Roads, has insufficient status and no authority to influence the use of the technology on a national basis, or even effectively within its own Ministry.
- viii. The impression from discussions within MOW is that ATU looks after labour-based technology, rather than it being seen as something to include in all MOW activities as appropriate
- ix. Regional Engineers have considerable, autonomous, responsibility and their advocacy of labour-based technology depends more on personal commitment (or lack of it) than on headquarters/government stated policy.
- x. The recently produced (and excellent) manuals are seen as being "a good quality labour-based technical manual in use by MOW HQ and at regional level". This excludes the Districts; donors; local and foreign consultants and local contractors.
- xi. Within MOW the discussions regarding the establishment of a Road Agency and a much-reduced MOW for policy; standards and technical monitoring will have a significant influence on the future of the ATU and also training activities.

- xii. The comprehensive review of the IRP (1997) notes the lack of an effective accounting system: a monitoring system and a maintenance management system. With these priorities, the activities that put emphasis on the use of labour-based methods somewhat missed the attention of the top management of MOW.
- xiii. The development of labour-based technology methods and specifications needs an inclusion in the MOW draft pavement and road design manual now in circulation for comment. Otherwise it may again be seen as separate from and not part of mainstream road engineering.
- xiv. Discussions and proposals are ongoing about appropriate contract documents for labour-based works (see also J. Clifton's report on Hanna Nassif documents). Many already exist but are not necessarily known to ATU or MOW headquarters. The principle is being missed that 'technology neutral' designs are needed with standard appropriate documents for small-scale works (e.g. ICE or FIDIC) and special conditions written if works are to be specified as labour-based (although eventually this should not be necessary).
- xv. The Road Fund is now expected by everyone to provide a continuity of funding which has been lacking. However it may be that such a flow of funds will highlight other deficiencies in contract preparation, management, procurement procedures, technology choice, equipment availability, policy guidelines which have not yet been noticed, and which will prevent funds being effectively disbursed.
- xvi. ATATAP objectives are narrow in being confined to the institutionalisation of the technology within the Rural Roads Division only, and refer to road maintenance activities (according to the Phase 2 project matrix).
- xvii. ATTI also has narrow objectives in training only road inspectors and foremen (originally for force account operations). There is no vision to include the private sector; higher-level courses (e.g. as Kisii); becoming autonomous; coordinating with other institutions. Study tours by ATTI/ATU to Kisii, Uganda and Zambia have been undertaken to broaden awareness of possibilities.

### **MORALG**

- xviii. The whole area of District Roads and relationships with District Councils; the MORALG and other bodies within the industry are not included in the ATU brief.
- xix. Donors and funding agencies are very much looking to district level for current and future development investment. Many VTTP are being established (based in MORALG) together with District road maintenance programmes. There is an acknowledged lack of technical capability at District level and a clear potential for appropriate technology applications.
- xx. Similarly the potential exists in the urban infrastructure sector but no donors are mentioning this area it appears. Lessons and experiences from Hanna Nassif should lead to further interventions
- xxi. The newly created MORALG is appointing engineers at headquarters and regional level to give technical advice and monitoring of Road Fund expenditure (30%). It expects to receive advice, technical standards, and manuals from MOW as the Ministry with technical responsibility for all roads.

### **Contracting Environment**

- xxii. Plant hire situation is confused with PEHCOL the Regional workshops and NCC all providing equipment to the small-scale contractors. On the sites suitable equipment still seems to be lacking and productivity is often low
- xxiii. Initiatives involving NCC to produce a Construction Industry Policy, to establish

construction Industry Trust Fund, and a Construction Industry Training Board are noted, but it is also noted how long it often takes for such proposals to reach fruition in Tanzania.

- xxiv. As an initial contractor training project the Kilimanjaro results were successful but subsequently things fell apart with lack of funding causing programmes to be curtailed. MOW despite being 'owner' of the roads was not playing a central role, although the RE did chair some Steering Committee meetings. Subsequent the involvement of other parties outside the MOW with their various responsibilities and inputs, has led to a complicated management situation which are yet to be properly resolved.
- xxv. The group that has suffered most from these events is undoubtedly the contractors themselves, the main beneficiaries. It may be that personalities and/or the differing mandates of the organisations have been the prime causes, but project 'ownership' has been identified as a major factor.
- xxvi. The Mwanza project was particularly subject to delays changes in the contractual arrangements, and lack of equipment resources. NCC has both a training and supervisory role for the trial contracts. The discontinuity of the ILO advisory services, with long experience in this field, was also a contributing factor. Major efforts will be needed to ensure satisfactory performance.
- xxvii. The CRB has a specialist category suitable for of labour-based contractors. This may be a short-term support in their development but it may simply reinforce the concept already, it seems, widely held that this is a specialist technology for the few rather than a viable option for all at whatever level within the industry. (example of the car park structure in Dar es Salaam)
- xxviii. Labour based construction is popular in the areas of operation for the usual reasons of employment generation and local involvement. Districts see added advantages of local income generation. Nowhere were heard any adverse opinions, which had been suggested in interviews at headquarters.
- xxix. There has been no specific encouragement or support for the establishment of labour-based Contractors Associations although some do exist at least in name. Their formation has proved beneficial in other countries.

### **Training**

- xxx. Many organisations are involved in various ways with training for the industry but overall there is no coordination. Duplication of effort appears inevitable with capacity being unfulfilled.
- xxxi. Most of the efforts in the development of labour-based technology have been directed at technical guidance, training of clients' staff, contractors, and other implementing groups.
- xxxii. The non-involvement of local consultants is a serious omission as their services will be increasingly required in rural Districts. Urban projects, VTTP, in addition to mainstream road works.
- xxxiii. The undergraduate course at the University of Dar es Salaam is in its fourth year of inclusion of the appropriate technology syllabus. This should begin to introduce engineers into the industry who have been made aware of the importance of technology choice. At the MSc level, some candidates are doing dissertations on issues related to the use of LBT.

## 7. OTHER EXPERIENCES

### 7.1 Ghana Project

In comparing the apparent lack of success in institutionalising labour-based technology in Tanzania with apparently more success elsewhere, despite the fact that not only was ILO initially involved but many of the same technical personnel participated, it is noted that the IRP has significant differences with respect, for example, to the Fourth Highway Project in Ghana. In the latter there was a specifically funded component for Feeder Roads to be carried out by labour-based contractors (for the first time) with equipment (\$150000 per contractor) to be provided under established financial arrangements through the local construction Bank. This was affirmative action in favour of a few (initially four) which has led, through various modifications and several different funding agencies to the current situation of 93 contractors trained with 54 equipped over a 12 years period. It is true that the competitive market does not operate (contracts are still fixed price) but over 2000kms of roads have been rehabilitated at costs, which satisfy all parties. It is also true that the first contractor repaid his equipment loan in 3 years, which is remarkable by any standard and indicates what is possible if there is genuine, positive political and technical support for contractor developments. Access to credit, equipment and continuity of work are key components and there is more than one way of achieving these.

One key factor is to convince the decision makers and mainly those controlling the finances, of the great potential economic benefits of the construction industry in general and the socio-economic benefits particularly of the labour-based construction technology. This was done in Ghana by asking the Minister of Finance to perform the opening ceremony on a completed labour-based road after first taking him to a working site with 200 labourers in action. Political and public awareness need to be raised and many engineers do not see this as part of their job description.

### 7.2 Uganda Project

This project was also established closely following the Ghana model with the key components of continuity of work (a target of 622km to be rehabilitated) and equipment provision through local leading arrangements. Packages values of between US \$95000 - \$192000 will be repaid by the contractors over 24-47 month periods. Crucially too it is District staff who are trained to take over technical and contract management control as the technical assistance is phased out, thus placing the responsibility directly in the hands of the client. Both rehabilitation and maintenance contractors have been trained with numbers matched to the workload and budgets.

### 7.3 Zambia Project

This is another successful example of a similar approach and in this case the perceived lack of technical capacity at District level is being addressed through the training of local consultants in contract preparation and supervision, in addition to the Districts' own staff.

### 7.4 Philippines

In order to enforce the use of labour based technology in the country after realising its viability and benefit, the president of the Philippines issued an order No. 94. This order is on establishing the policy direction and institutional framework to implement labour based equipment supported infrastructure program. It includes adoption of the policy, creation of the programme committee, funding, repealing clause and effective date (12/04/1998). (See Annex 12).

This is an example of government and leadership commitment towards ensuring that viable options are adopted and implemented accordingly. It is worthwhile considering a similar approach

## **8. FUTURE DEVELOPMENT**

### **8.1 Policy**

For future development in any sector of the economy there needs to be the political will and commitment to formulate and implement clear policy with set objectives. Over two decades many policy statements have been made about the 'encouragement' 'support' for the private sector; local contractors; labour-based technology, however this has not translated into practice to any significant degree.

What appears to be lacking in this area, as elsewhere, is an agreed published (if necessary 'glossy') document available to all sections of the industry, the public sector, donors and other involved parties setting out such a policy for labour-based technology in Tanzania. It needs to be included within the agreement of the overall 'Construction Industry Policy' now being discussed of which it is an important part. A clear policy directive from the government leadership (similar to an example cited from Philippines) is of great importance and use to all implementing agencies, donors and all related groups.

The technology should not be seen as a small isolated, specialist activity but as part of the whole picture. The government agency responsible is the MOW, which needs to ensure the production, coordination and implementation of government policy. Without this the current fragmented activity in this field looks set to continue, very much influenced by donor decisions rather than national interests.

### **8.2 Institutional Arrangements**

The fluctuations in institutional arrangements over the last few years have initially left the Regional Engineers with considerable autonomous powers but without the necessary directive framework in which to operate. Use of labour-based technology has been more from personal choice than from technical or socio-economic analysis. ATU has been a small unit in one sub-section of Rural Roads and thus unable to exert the kind of influence that was envisaged at the outset. Officers in headquarters, working on the basis of vertical management structures have mostly expressed the view that labour-based technology is others' responsibility and not necessarily appropriate to their activities. With the move to establish the Road Agency (Tanroads) under the direction of MOW there exists a one-off opportunity to place ATU in a position of influence and to give it the essential status that it needs if labour-based technology is to play a serious role in future roadworks activities. This position will also be essential if ATU is to advise and inform the MORALG and through it the Districts where the major potential for the use of the technology exists. Influencing the newly appointed engineers within the Regional Administrations will be crucial as will also a close liaison with the newly established VTTP Unit in the Ministry headquarters.

### **8.3 Parastatals**

Bodies such as NCC, CRB and the professional bodies are established under the overall control of the Minister of Works and their activities need firm coordination and direction towards the actual development of the construction industry. Currently, when these organisations have been instructed to be self-sustaining, there appear to be suggestions of duplication of activities, which can generate income and migration outside the original guidelines. Particular interest has been developed towards promoting the private construction sector without observing the actual utilisation and survival of those involved. These bodies should not be seen as taking over many of the roles and responsibilities of that sector. The insistence that they are 'gap-filling' only is acceptable as long as they are not perpetuating the gap in their own interests.

### **8.4 Donors**

The contribution of donors and funding agencies to future development will continue for the foreseeable future and the need to coordinate their activities will be crucial in ensuring the most effective use of the available resources and direction of the investment coupled with the

maximum local participation in programme implementation. There is also need to ensure that all major areas are being covered either from these funds or local revenues, for example, in the field of urban infrastructures, which currently seems to be lacking. The coordinating group would expect to have representation from MORALG to ensure that the needs of District and Urban areas and the relevance of appropriate technology are appreciated. With donors being drawn more towards District level and with VTTP activities rapidly expanding, programmes will need that essential coordination if the best practice and experience is to be replicated countrywide.

#### **8.5 Alternative ATU**

A higher profile ATU should have a formalised, established liaison role - as part, perhaps, of a labour-based construction advisory group with other bodies which has the particular brief for poverty alleviation as well as income generating projects. An appropriate level for the chairperson of such a coordinating group would be at least an under-secretary at the Ministry.

Although probably the best position for ATU remains at a high level within the government structure an alternative would be to transfer it to a body such as NCC which has the brief for the construction industry as a whole, including contractors, consultants and materials/equipment supplies. It might in this way be assured of more independence of action (free from civil service procedures) but there would remain the question of the specific funding of its activities, as with other activities of NCC only 20% of which at present comes from government. However, this alternative will eliminate its influence over the government involvement at the commanding or directing level.

#### **8.6 Affirmative Action**

As part of an established policy some affirmative action in favour of the development of small-scale and labour-based contractors should be encouraged. It has to be implemented and monitored through directives to Tanroads and the Districts. Continuity of Roads Fund disbursement would be conditional on satisfactory implementation of the policy directives. Registration Board regulations restricting contractors to their own classification categories (at the same time ensuring that work-sharing was equitable) would greatly assist the development of contractors at the lower level. Again, initially, an allocation to the specified category for trained and accredited labour-based contractors would be needed to help give some continuity of work opportunities. The question of appropriate market share for all types of contractors should be another essential policy consideration for the new-form MOW, in collaboration with NCC and CRB. Other requirements for foreign companies to ensure a specified share of their work for local enterprises should also be looked at. In this respect some of the policies adopted in South Africa may be a useful guide to what can be achieved with targeted procurement.

#### **8.7 Access to Credit**

Small-scale contractors (and others) have major problems with lack of access to credit - not aided by the contracting procedures, which require numerous bonds/guarantees but do not allow prompt payments. This is a national issue needing the involvement of many parties, including government, and in its present position ATU cannot play a really active part in trying to solve the general problem. Initiatives currently under discussion within NCC and NIGP are welcome but it is suggested that government will need to take a decisive and active role if a workable system is to be established. As with many initiatives the eventual aim is for the private/commercial sector to be self-sustaining but initially government assurances, and if necessary guarantees, are generally required before a stable situation can be reached. The private sector needs to see evidence that government regards the construction industry as a key factor in economic development - the question of political will again.

#### **8.8 Access to Equipment & Tools**

Associated with access to credit is access to appropriate tools and equipment for labour-based contractors. To date this has been at best fragmented and at worst non-existent. Plant hiring

outlets have mainly dealt at the heavier end of the equipment spectrum and even where specific efforts were made to supply the small contractors the results have not been as planned. Only a few of the first Kilimanjaro contractors were able to acquire equipment and hiring arrangements have generally been unsatisfactory. Some equipment procured for labour-based programmes has been inappropriate (eg water tankers) and this is another area for essential coordination at the central level where ATU should have a major input. This should include initiatives for local manufacture, where again assurances/guarantees about the initial market would be required to establish an industrial base and NIGP could play an important role in this. In the final analysis the productivity of labour-based operations is dependent upon proper tools and sufficient appropriate equipment (since the labour-force is more secure) and this is where much of the (ill-informed) criticism of labour-based methods is directed (slowness and quality).

### 8.9 Training

The labour-based programme has hardly suffered through lack of training inputs. Almost every project until recently has had some training component but this has been project orientated and has experienced a lack of organised coordination.

ATATAP has had limited objectives and this resulted in the merging of the two ATTI. Several established institutes from the University downwards include some element of labour-based technology in the syllabus, aimed at different levels of academic standard. NCC has undertaken a role of training the contractors, which has been sometimes uncompleted due to lack of funds. CRB has claimed to have the mandate for training the contractors, although their efforts have not been recorded. All these don't have a central co-ordination and the results are piecemeal.

Much of the construction industry training (for contractors, consultants and clients' supervisors) would be common and independent of technology. In principle co-ordinated training should include labour-based aspects as part of the training programmes as a whole rather than being isolated from the normal practice. Ideally the situation should be developed, where training within the industry is self-sustaining and seen as a commercially based activity.

ATTI and the other institutions need to have an association, preferably under a body such as a Construction Industry Training Board, which conducts market research and organises training as needed at appropriate institutions. ATTI needs to be free from public sector constraints and narrow objectives.

ATU should have a voice on any such Board to ensure that the interests of appropriate technology are met. The University needs to be encouraged to include the module in its MSc Course, initially perhaps as an option, but with the objective of making it compulsory.

### 8.10 Contract Documents

Despite all the progress towards establishing labour-based contracting many of the basic essentials, including appropriate contract documentation, are still not uniform. Most projects have produced their own forms and many anomalies exist. Only one appears to have produced the very simplest petty contract in Kiswahili and others, with 2 months contract period, have full-scale bond, guarantee, and retention requirements while allowing payment delays of one month. Each consultant and donor will tend to impose their own standards in the absence of definite documents from the Ministries, and engineers from a variety of sources produce many such documents with little or no reference to the legal profession (they are, after all, legal documents). Several internationally accepted formats exist, they have been tested but none is yet in use in Tanzania. ATU has been involved in the production of another set of standards but this has already taken a long time, allowing others to continue to go their own way. It is imperative that this situation is finally resolved as a matter of urgency with decisions required on the appropriate documents for the appropriate level of contract, including,

- ♦ petty or single person contracts - routine maintenance

- ♦ community contracts
- ♦ small-scale contracts
- ♦ labour-based construction - special conditions
- ♦ national or international competitive bidding

### **8.11 Other Sectors**

One further constraint to the wider developments of labour-based technology is the assumption by many that it applies only in the field of rural roads (since this is where most of its application has been). There are many other areas where it is applicable.

- ♦ urban infrastructure
- ♦ irrigation
- ♦ water supply
- ♦ agriculture
- ♦ forestry
- ♦ soil and water Conservation

and part of the ATU brief needs to be in this area of advocacy and awareness. This may start within the University with the general training of engineers but it is the other non-technical decision makers who need to be equally aware of the possibilities. Uganda, for example, has had great success in raising public awareness to the needs and benefits of road maintenance and funding for it has ceased to be a major problem. Public relations; publicity campaigns; political speeches are all areas for potential ATU action with the need for other skills besides traditional engineering.

### **8.12 Role of Consultants**

To date this is a totally neglected area despite the role of consultants having been written into at least two projects (Kilimanjaro and Mwanza). It should be relatively easy to correct this situation and it will be particularly important in view of the lack of capacity at the District level at present. With the Road Fund disbursement to Districts already being effected, the need for consultants at that level is urgent. With ATTI having spare capacity and other training locations available some self-financing courses should be relatively easy to organise in collaboration with MORALG, which should be able to give assurances about potential workload and type of services required. ATU has an important coordinating role. There are plenty of potential trainers with the necessary experience on the various projects in the country. There have been too many examples of inappropriate project design and documentation from the (apparently) experienced foreign consultants to allow this area to be left to chance.

### **8.13 ATATAP/ ATU**

With the above points in mind the institutionalised operational programme as ATATAP time frame approaches the end, would need detailed focus with a view of giving the implementation team sufficient status, authority, staffing and resources to be an effective organ for the wider promotion of labour-based technology within and outside the government organisation. It seems clear that to leave it as it is will guarantee that little or nothing will change and that the activities will be forgotten. The opportunity (not to be repeated) now exists for the radical re-thinking necessary, what is not so clear is whether there is the political will to enable this to happen.



## **9      WORKSHOP DISCUSSION**

### **9.1      General**

The details of the Workshop held on 20-21 May are given in the Workshop Annex 5. This includes the list of participants, programmes, and summary of the discussions, agreed documents and conclusions. The objective was to have a wide representation and discussion on the draft report, Vol 1 of which had been circulated several weeks beforehand. It was significant that the Permanent Secretary MOW was in attendance for the first day when the summary of the report findings, and the policy and institutional issues were discussed. A number of other senior officers however were not able to be present, (from NIGP; NCC; MORALG) which highlights the problems of trying to organise such a forum for people who are committed in a number of areas of public life. Also donor representation was minimal, and this resulted in the majority of participants being from within MOW itself.

### **9.2      Draft Report**

The report findings and the separate reports of the local consultants had been summarised in advance and these were circulated to participants as the individual presentation were made. Apart from a few points of clarification there was no dissension on the report findings and conclusions presented.

### **9.3      Key Questions**

#### **9.3.1      The Policy and Strategy**

The first key question concerned the apparent lack of a formalised, documented policy on labour-based technology despite the number of supportive statements, which have been made over many years. The current consultations on the national Construction Industry Policy were noted and it was agreed that this represents the best vehicle for ensuring that LBT is adequately promoted. It was further agreed that Strategy was equally important and a paper detailing essential components of Policy, Strategy and Implementation was agreed.

#### **9.3.2      Contracting Issues**

It was recognised that the contracting environment generally is not conducive to development of small-scale contractors. Labour-based contractors suffer more than others in this situation. Many constraints that hinder the development of LBT in the road sector have been identified to be related to various actors in the field (clients, consultants, contractors, donors, training institutions, financial institutions etc.). A lot have to be done to rectify the situation.

#### **9.3.3      Training Issues**

The fragmented, generally project related, training of labour-based contractors was acknowledged, as was the serious omission of training for consultants. Lack of training capacity in the private sector means that organisations like NCC are only 'gap-filling', and ATTI, which is the only remaining facility is not fully utilised. National coordination of construction industry training (of which labour-based is a part) is required and links with VETA and the academic institutions need to be included. Proposals for a Construction Industry Training Board are seen as a move in the right direction.

#### **9.3.4      ATU - Institutional Position**

The low status of the ATU in the MOW was seen as a serious constraint to the promotion of LBT to date and the increasing importance of the districts (under MORALG) and the establishment of TANROADS means that ATU's position needs serious attention. Ideas ranged from placing ATU within NCC; within the RMI unit (MOW), which has cross-ministries influence; in MORALG; or elevating it in MOW, were thoroughly discussed. It was pointed out that NCC has a statutory obligation to promote Appropriate Technology and the use of local materials in the construction sector and some argued that this was therefore the logical place for the ATU. The majority, however, favoured an elevated status in MOW, guided by a Steering

Committee composed of all interested parties. It was significant that the Director of Rural Roads favoured this option.

#### **9.3.5 ATTI Operations**

The constraints on the operations of the ATTI in terms of its original limitations to public sector force account staff, its reliance on MOW budget for the physical site works on which the training is based and its lack of a mandate to be a more commercial institution in view of the needs of the private sector, VTTP and work in the Districts were discussed. It was also noted that the training has no accreditation. Although a number of possible operating arrangements were suggested it was agreed that a wider ranging training needs and institutions study is required since the ATTI question should not be tackled in isolation.

## **10. CONCLUSIONS AND RECOMMENDATIONS**

### **10.1 Findings**

Based on the findings of the study team as outlined in the draft report and following the deliberations of the participants at the Workshop a number of conclusions and recommendations have been collated.

### **10.2 Policy for the Promotion of LBT**

- the participants identified key policy aspects needed to promote the application of labour-based technology (see Workshop Annex)
- the participants are aware of adopted and draft national policy documents which include the promotion of labour-based technology
- the participants support the efforts of the NCC in the drafting process to produce a Construction Industry Policy document

#### **Recommendation:**

- ❖ that the policy aspects identified by the workshop be incorporated by the NCC when revising the Construction Industry Policy draft and the ATU should seek to coordinate this input
- the participants believe that the revised draft will then provide a sufficient basis for a Cabinet Paper that will include policy statements on the promotion and application of labour-based technology
- meanwhile, acknowledging that policy documents in Tanzania have long gestation periods, participants believe that, since implementation of LBT has not followed from the many affirmative statements, clear strategy guidelines are required from the MOW. These should direct the implementers in headquarters, at Regional and District level (in both MOW and MORALG) in a detailed strategy to be adopted to optimise the use of LBT within the roads sector.

#### **Recommendation:**

- ❖ that ATU, in liaison with the appropriate officers in both Ministries, drafts a strategy document to be adopted as a practical guide to the implementation of LBT within the MOW and MORALG, and to include areas such as VTTP and Urban infrastructure operations.

### **10.3 Contracting Issues**

- the participants agreed that there are innumerable constraints within the construction sector which jeopardise the creation of an enabling environment, particularly for the labour-based, small-scale contractors
- the participants welcome the initiatives (detailed in the report) within NCC, CRB, NIGP and other bodies regarding Construction Industry Trust Fund; tools and equipment manufacture; strengthening of Professional bodies; Mutual Guarantee Funds; contractors registration regulations and Contractors Associations
- the study highlights that more needs to be done within Client organisations in the areas of contract design, documentation and award to establish an equitable environment for all types of contractors and to redress the current bias in favour of equipment-based implementation.

#### **Recommendation:**

- ❖ that ATU is given a brief to establish a working liaison with the other interested bodies to detail practical measures to be taken to improve the contracting environment with particular emphasis on the small-scale and labour-based contractors

#### 10.4 Training Issues

- training in the roads sector is fragmented, mainly project based, and lacks national coordination. It has been targeted almost entirely at contractors and has no accreditation
- the participants agreed on the urgent need for coordination and noted the NCC initiatives for a Construction Industry Training Board, although realising how long this might take to establish
- several training proposals for consultants (both project based and national) have been made but these have not progressed
- some of the labour-based training (NCC) has not been related to subsequent availability of work and funding. Many contractors who participated in the Arusha/Mwanza training program couldn't complete their training due to inconsistent funding.

##### **Recommendation:**

- ❖ ATU should be given a brief to take a proactive role in the development coordination and implementation of labour-based training programmes for clients, contractors and consultants, including liaison with donors, NCC, CRB and learning/training institutions

#### 10.5 Position of ATU

- the majority of participants agreed that ATU should be raised to a higher status in MOW (with a significant minority in favour of placing it in NCC)
- participants agreed that ATU needs to have influence beyond MOW in view of the emphasis on Districts, VTTP, the establishment of TANROADS, the Road Fund distribution and the demands for urban infrastructure

##### **Recommendation:**

- that the appropriate steps are taken in MOW to raise the status of the ATU to a suitable level of influence such as being led by the under-secretary and to appoint a Steering Committee of interested parties in LBT promotion to direct its activities

#### 10.6 ATTI Operations

- participants agreed that the ATTI needs a wider mandate to operate in all LBT related fields but this needs to be within the context of a coordinated training strategy for the construction industry as a whole
- insufficient data is currently available to decide on the status of ATTI as an autonomous commercial training institution; as part of NCC; affiliated to VETA or some other option

##### **Recommendations:**

that ATTI is given a position within MOW similar to the self-accounting Regional workshops, with a brief to widen the scope of its services and operate within all areas of LBT

that a study be undertaken to assess the LBT training needs within the construction industry and the role which ATTI should play in an overall strategic plan.

## **Annex 1**

### **LIST OF PERSONS INTERVIEWED**

## **ANNEX 1: LIST OF PERSONS INTERVIEWED**

### **1. MINISTRY OF WORKS**

- 1.1 S. Odunga - Permanent Secretary
- 1.2 J.L. Ngumbulu - Director, Trunk Roads
- 1.3 J.W.H.V. Kijazi - Director, Rural Roads
- 1.4 W.A. Lyatuu - Coordinator, RMI
- 1.5 F.T. Marmo - Director Policy and Planning
- 1.6 G.S. Kinyero - Chief Engineer (D&C) Rural Roads
- 1.7 A.M. Byabato - Chief Engineer Maintenance, Rural Roads
- 1.8 G. Rubibira - Chief Engineer Contracts Control
- 1.9 T.T. Kilagwa - Chief Engineer Inspectorate, Rural Roads
- 1.10 B.V. Katabwa - Head, Planning & Programming
- 1.11 Y.N. Shitindi - Project Coordinator, CODAP
- 1.12 R. Byanyuma - Engineer, CODAP
- 1.13 A. Andreski - Technical Adviser, MAG
- 1.14 L. Kyombo - Senior Engineer , ATU
- 1.15 U.L. Msengesi (Ms.) - Engineer, ATU
- 1.16 G. Runyoro - Project Coordinator VTTP

### **2. NATIONAL CONSTRUCTION COUNCIL**

- 2.1 K.M.I.M. Msita - Executive Secretary
- 2.2 E.K. Kinasha (Ms) - Chief Consultant
- 2.3 L.A.K. Chobya (Ms) - Consultant
- 2.4 M.S.R. Wambura - Training Engineer
- 2.5 L. Lucas - Training Engineer, MRSP, Morogoro
- 2.6 D. Msekeni - Training Engineer, MRSP, Morogoro
- 2.7 P. Saitabau - Training Engineer, Mwanza
- 2.8 A. Uriyo - Training Engineer, Mwanza
- 2.9 E. Lima - Training Engineer, Mwanza
- 2.10 A. Khajia - Training Engineer, Mwanza
- 2.11 A. Kasuwi - Training Engineer, Moshi

### **3. MINISTRY OF REGIONAL ADMINISTRATION & LOCAL GOVT**

- 3.1 S. Sijaona (Ms) - Permanent Secretary
- 3.2 R. Musingi - Director of Regional Coordination

### **4. REGIONAL ENGINEERS PERSONNEL**

- 4.1 E. Korosso - Regional Engineer, Shinyanga
- 4.2 R.W.B. Kambikiye - Rural Roads Engineer, Shinyanga
- 4.3 G.H.N. Lwenge - Regional Engineer, Mwanza
- 4.4 T.L. Mosso - Regional Engineer - Arusha
- 4.5 D.C.V. Kakoko - REO Morogoro
- 4.6 G.S. Kyara - REO Morogoro
- 4.7 Urs.J. Studeli - REO/Itecto, Morogoro
- 4.8 Hans Mhalili - REO/VTTP Adviser, Morogoro
- 4.9 A. Sungura - Regional Engineer, Iringa
- 4.10 J.A. Msemwa - Planning Engineer, Iringa
- 4.11 M. Mtigumu - Engineer. Rural Roads, Iringa
- 4.12 O. Mng'ong'o - Technical Adviser, USAID, Iringa
- 4.13 I.S. Mwanawima - Regional Engineer, Mbeya
- 4.14 S. Manenuka - Planning Engineer, Mbeya
- 4.15 R.S. Lawena - Rural Roads Engineer, Mbeya
- 4.16 A. Ngweta - Trunk Roads Engineer, Mbeya
- 4.17 K. George - Manager Regional Workshop, Mbeya

### **5. DISTRICT PERSONNEL**

- 5.1 Mbale Smooje - District Executive Secretary, Magu
- 5.2 H.J. Undongole. Ag District Executive Director, Kilosa
- 5.3 R. Mwakasitu, District Engineer, Kilosa
- 5.4 A.S.H. Nyagweda, Road Supervisor, Kilosa
- 5.5 F.S.D. Kapinga, District Engineer Director, Iringa
- 5.6 K. Haule, District Engineer, Iringa

## **6. APPROPRIATE TECHNOLOGY TRAINING INSTITUTE MBEYA**

- 6.1 F. Mlaponi, Principal
- 6.2 F. Mwakimi, Roads Inspector
- 6.3 H.A. Mombo, Trainer
- 6.4 R.D. Kansimba, Trainer
- 6.5 R.F.B. Mwandu, Trainer
- 6.6 J.E. Majarua, Trainer
- 6.7 D. Mwangosi, Supplies Officer
- 6.8 C.W.K. Zayumba, Office Supervisor

## **7. DONOR AGENCIES**

- 7.1 A. Nordbo - NORAD
- 7.2 A. Strom - NORAD
- 7.3 G.A. Banjo, RTTP Regional Office - World Bank
- 7.4 Mulugeta Yohannes - USAID
- 7.5 C. Lema (Ms) - SDC
- 7.6 A.B. Lorentzen - DANIDA
- 7.7 C.J. Cracknell - EU
- 7.8 Mr Lambart - EU
- 7.9 Mark van den Boogaard - Royal Netherlands Embassy
- 7.10 L. Melgaard - UNCDF
- 7.11 D. Mkwawa - UNDCF
- 7.12 Avtar Singh - PMA, UNCDF - Mwanza
- 7.13 K.W. Salewi - NIGP
- 7.14 K. Schneider, GTZ Adviser - Arusha
- 7.15 J. Connolly, GTZ Adviser - Arusha
- 7.16 Riika Laatu (Ms) - Embassy of Finland
- 7.17 D. Johnson - CTA Finroad Lindi
- 7.18 Wilma Van Esch (Ms) - ILO Asist
- 7.19 Ali Ibrahim, Director ILO Area Office
- 7.20 Kwaku D. Osei - Bonsu - ILO EAMAT



## **8. CONTRACTORS ORGANISATIONS**

- 8.1 B.C. Muhegi - Registrar, Contractors Registration Board
- 8.2 S.N. Materu - Assistant Registrar - CRB
- 8.3 P.A. Kingu - Dipe & Company Ltd, Morogoro
- 8.4 Manjit Singh - Ram Singh & Sons Ltd, Morogoro
- 8.5 F. Samnamwande - Ram Singh & Sons Ltd, Morogoro
- 8.6 Hassan Madai - Ram Singh & Sons Ltd, Morogoro
- 8.7 K.R. Mashamba - Mashamba's Construction Co., Kilosa
- 8.8 Andrew B. Mbawa - Parts Building Contractors, Kilosa
- 8.9 Abdallah S. Senkubo, Senkubos Construction Co., Kilosa
- 8.10 Contractors Group - Mwanza
- 8.11 Contractors Group - Shinyanga
- 8.12 Williamson Construction - Arusha

## **9. OTHER INSTITUTIONS**

- 9.1 J.W. Chohan - Chairman, ACET
- 9.2 B.L.M. Mwamila (Prof) - Institution of Engineers Tanzania (IET)
- 9.3 T. Rwebangira (Prof) - University of Dar-Es-Salaam
- 9.4 S.S.Y. Fungafunga - Dar-Es-Salaam Institute of Technology
- 9.5 D.J. Kipokola - Principal, VETA Centre, Mikumi
- 9.6 E.H. Masija - Irrigation Project, Ministry of Agriculture and Cooperatives
- 9.7 Mr B. Nyau - Ministry of Water
- 9.8 Mr C.N. Sayi - Ministry of Water
- 9.9 Mr R. Magesa - Ministry of Water

## **Annex 2**

# **MISSION ITINERARY**

## ANNEX 2: MISSION ITINERARY

February	22-26	Local Consultants Data Collection	DSM
	27-28	Team Leader : Travel/Arrival	DSM
March	01-06	Team Discussions/Meetings	DSM
	07	Documents Study	DSM
	08-13	Field Visits Mwanza: Shinyanga: Arusha: Moshi (Team Leader: Local Consultants: ATU)	
	09-14	Field Visits Morogoro: Iringa: Mbeya: (2 Local Consultants: ATU)	
	14	Team Leader Document Study	DSM
	15-20	Further Meetings/Discussions	DSM
	20-24	Drafting Reports	DSM
	25	Wrap-up Meeting	DSM
	26-27	Team Leader : Travel/Arrival	UK
	29-02 April	Compilation of Final Draft Report (Team Leader)	UK
May	17-18	Team Leader : Travel / Arrival	DSM
	19	Workshop Preparation	DSM
	20-21	Workshop	DSM
	22	Debriefing Meetings	DSM
	23	Team Leader : Travel / Arrival	UK
	24-29	Team Leader : Draft Final Report	UK

## **Annex 3**

### **TERMS OF REFERENCE**

**TERMS OF REFERENCE**

**1.0 Background**

The use of labour-based techniques for the construction and maintenance of infrastructure, in particular roads, has been established as a viable option in Tanzania. Important elements behind this choice are low wage levels, high unemployment and limited capacity to afford and sustain technology options based on imported skills, equipment and materials. Until late 1980s, the labour-based infrastructure works were largely directly implemented by the government agencies using their own permanent technical officials and government owned equipment to support a largely casual or daily paid labour force.

As a part of its Integrated Roads Project (IRP) which was launched at the beginning of the 1990s, the Government of Tanzania (GoT) embarked upon a programme on developing the national construction industry and strengthening its involvement in the road sector. The GoT wanted to move away from direct government implementation of works and seek to make increasing use of the private sector. The rationale behind this is that the private sector can be more efficient, making better use of limited resources, and will be more accountable than the former system of implementation (i.e. payments by result rather than payment by commitment).

However, this move could not be done overnight as the majority of the skilled people, particularly in the road sector, were employed by the GoT. An extensive training and re-training programme was therefore necessary before any truly local private sector skills could be considered available for the IRP). In the labour-based field, the International Labour Organization (ILO) has for some years been carrying out a number of country specific projects to develop the technology in general and a private sector capacity in particular. The ILO was therefore engaged to support the National Construction Council (NCC) and the Ministry of Works (MOW) in their development of this programme.

In many ways the labour-based approach is ideal for privatisation. The equipment and capital requirements are relatively low and the skills to be acquired are simple. This issue is very essential in an economy like the Tanzanian where the returns on the investments have proved to be fairly risky. In addition, the sort of person who is being trained to enter this field is usually the sort of newly established entrepreneur who will be essential if a developing country is to eventually compete in the world's free market structure. It could therefore help Tanzania to establish a new cadre of business people to meet the challenge posed by an ever increasing influx of foreign firms who look for good but often short term benefits in the country. The longer term benefit for the country is assumed to be an affordable and more readily available local capacity' to undertake regular maintenance of the road network.

Despite the relative simplicity of the concept, the ILO has found that there are numerous pitfalls to establishing a viable and sustainable contracting approach. Many of these problems are not immediately apparent to the government and donor personnel who are currently involved in infrastructure projects. The issues are often to do with financial management rather than the technology, i.e. obtaining credit, understanding cash flow and re-investment, and of course client systems that ensure timely payment.

In addition there are procedural issues of comprehensible project documentation (when contractors may be barely literate, particularly in the "language" of the contract documentation), equipment and tools ownership and management (still a significant and risky investment for a small businessman) and supervision capacity and quality control from the client. It is often taken for granted by first world organisations that a professional body of managers or consultants can be hired in as required, either nationally or internationally. These type of skills are not yet common in the third world, and when they do exist nationally they are usually un-affordable by government departments. The internationally procured expertise has often failed to adapt their advice to the national conditions, it has ever so often proved to be unaware of the difficulties faced by the local emerging enterprises and the challenges posed in the local context.

It has been the ILO's experience that these challenges can be overcome if they are properly recognised and addressed at project inception, and a vibrant and sustainable industry can be created. However the skills relating to small business management and petty contract procedures are not common amongst government personnel, nor among the type of technical assistance personnel often used in developing labour based programmes.

It is in this context that it has been decided to look at the programme of capacity building within the MOW and other client organisations in the use of labour-based technology at large and the development of the labour-based contracting programme from an independent position by a separate study team. They will therefore carry out an assessment of the programme achievements in view of the objectives and strategies set, and the activities undertaken to reach these objectives. However, more important than looking at what has been done, is to look at what is proposed to be done. The work of this study team will thus include an appraisal of the future programme of action in order to reach an appropriate level of involvement of the private sector to provide for an affordable and sustainable maintenance of the road network in Tanzania. The "new" programme must reflect the diversity of problems that may have been encountered and give comprehensive details of appropriate solutions.

An assessment of the labour-based contracting programme including the client organisations should be made with the issues above in mind and draw on the experience from the relatively few existing projects in the country<sup>7</sup> projects which have been implemented in a fragmented way with too little exchange of experiences between them and a lack of coordination of strategies and activities. This assessment should ensure that

an updated programme with realistic strategies can be produced and followed by the national agencies and the donor Community supporting the road sector and the involvement of the private sector in Tanzania.

## **2.0 Objectives**

The present assessment of the labour-based technology and contracting development programmes in Tanzania aims at analysing the achievements of the Appropriate Technology Unit (ATU) of the MOW, the labour-based contractor training programme with the National Construction Council, the development of an appropriate contracting environment within the different client organisations, as well as the development of a capacity with the private consultants for additional contract preparation and Supervision (contract managers) in order to reach an appropriate level of involvement of the private sector to provide for an affordable and sustainable maintenance of the road network in Tanzania.

Special emphasis will be put on the positive experiences with the different approaches adapted and the challenges met with certain elements of the contracting development programme, which will provide for recommendations on the future directions of the programme and enable the stake-holders to target their development programmes to remove bottlenecks in achieving a broader and extensive use of labour-based technology incorporating the private sector in rehabilitation and maintenance works in Tanzania.

## **3.0 Scope of the Work**

### **3.1 General**

The study team is expected to undertake an independent analysis under the programme assessment (independent from the NCC and the MoW internal assessment), but still work in close cooperation and understanding with them on all aspects of the work. They will be provided all available material by the two agencies on the programme established so far.

They will first of all aim to acquaint themselves with the programme development at the NCC and establish a comprehensive overview of how the present training programmes have been set up and operated, and to what degree they are meeting the specified targets of the programmes.

Likewise, they will look at the programme of the MoW, the Regional Engineers and in particular at the programme and interventions of the ATU in terms of developing an appropriate working environment for the trained roadworks supervisors, inspectors and labour-based contractors.

The fairly recent developments along the lines of the decentralisation policy have introduced increased challenges on the contracting development programme. As some of the work previously supported by the Regional Engineers will now be carried out by the District Engineers, there is a growing number of relatively in-experienced client organisations. New programmes which aim at supporting the District Councils and using private sector operators, have been started and others are in the making (i.e. the Village Travel and Transport Project, VTTP of the MoW and local authorities). The study team should keep this in mind when they look at the clients' capacity to let and supervise contracts in the future.

The study team will therefore look at the situation before and after the programme, organising their work in the different areas of the development process, some which are solely under NCC direction, others under MoW but most under a common responsibility when it comes to implementation. This is why it has been found appropriate to undertake this assessment of the contracting development combined for the "contractor training projects" under NCC and the "labour-based development programme" under the ATU of MoW.

This should result in not only an assessment of the present achievements but also a proposal on how to proceed with this development programme. Indeed, this could to a large extent be built upon the existing programmes of the NCC and MoW, but new and innovative approaches to problem solving will also be appreciated.

### **3.2 Specific tasks**

The study team will base their work on an assessment of information obtained in the areas mentioned below. Although the study team is free to organise their report(s) the way they see best fit for this assignment, the work will include an overview of what the projects did to change the situation described under the pre-project situation, the objectives and activities outlined for the programme and the effects of the actions taken. Likewise, it will be important to address the areas where there is a possible room for improvements.

The areas to be looked into by the study team include, but are not necessarily limited to the following subjects:

- *Project conception and objectives:* The study team is expected to analyse the initiation of the contracting development programme and its objectives in order to describe the appropriateness of the objectives and the strategies adopted. It would be interesting to find out to which degree the objectives are a result of internal strategic decisions and if any influence by external financing agencies have had a positive or negative impact on the programmes and their outputs (issues like donor strategies and conditionality of external funding should also be discussed). The cooperation between the different institutions involved in



developing a programme in pursuance of a national policy on the use of labour-based methods should be outlined. The issue could include, but not be restricted to: primary project objective (local resources utilisation, employment creation, physical outputs, contracting industry development, institutional development); programme identification, appraisal, agreement and approval process and to which degree the fact that it is a component of a large programme has had an influence on government's and other agent's commitment to the programme:

*Detailed preparation:* programme implementation plans, "indigenous" or Tanzanian plan adapted to the local conditions; programme resources and inputs; planned technical assistance and phase out plan, selection of advisory services and adequacy of provision of training; procurement procedures and time schedules for equipment delivery; donor coordination; reviews, evaluations and their possible influence on the direction of the programme:

*Contractors profiles and contractor selection:* the study team is expected to prepare an overview of the typical contractors selected for training and work including what type of businesses are being selected (e.g. one-man/woman operation, established companies, any gender issues involved etc.), which knowledge they possessed in technical and business skills (any certificates before participating in the programme in building, carpentry etc.), type of work dealt with (any road sector experience), fixed assets and financial situation including possession of bank accounts and access to credit:

*Technical and equipment resources acquired to undertake the works:* the amount of tools and equipment purchased directly by the contractors including that under possible and alternative hire/purchase arrangements following their participation in the programme. A possible description of available assets at the outset of the programme and the availability of equipment in the private market for hire would also be of great benefit for this assessment. The situation with regard to their staffing before they started on the programme, the number of staff hired by the contractors and/or trained under the development programme (skilled workers, foremen, storekeepers, cost clerks) should be outlined:

*Arrangements for contractor support:* full details of the contractor development programme should be given including the training programmes (alternative training modules), technical assistance support and possible mentorship arrangements, loans and credit, any assured work load:

*The contracting environment:* a comprehensive analysis of the contracting environment including prevailing Constraints and potentials, also taking into consideration other privatisation and entrepreneurship developments in the country (in the general context):

- *Contractors' own environment:* an outline of the existing legislation on contractor registration and classification, the applicability in relation to the development programme and any proposed future amendments to the system in use; the existence and role of contractor associations in the development process and the contractors' own role and responsibilities in as well as contributions to these associations;
- *Contract documentation:* the description of the present forms of contract for different road works (construction, rehabilitation and maintenance) and the appropriateness of the contracts in relation to the different road works and work implementation methods by the contractors (equipment based or labour-based) is an important part of this assignment: an assessment of the relevance of the contract documents with a view to ensure that contracts can readily be prepared by the client organisations, that quality control is being undertaken and that certificates are processed and paid rapidly (describe the responsible parties for control and payment); other aspects to be mentioned like: special conditions, specifications, bills of quantities and methods of measurement, in particular special clauses relating to labour-based methods (employment structure and targets, premiums, labour issues like enforcement of labour standards for unorganized workers, etc.) and facilitating the development of new small scale contractors; particular attention will be given to ascertaining the employers' and contractors' understanding of the contract documents they are using;
- *Contract organisation:* as a continuation of the contract documentation, the contract organisation should be outlined, i.e. relationships between the actors from the main client to the field worker (including the employer, any project manager, any use of contract managers (consultants), the supervisor, the contractor and his/her staff); additional information like the size of contracts, sureties, performance bonds, equipment and materials management and lastly the use of credit schemes, advances, leasing and hiring arrangements within the contract organisation should be included;
- *Client organisations:* the changing role and situation of the client organisations and their capacity to cope with this change will be discussed by the study team: as most of the works in the past were carried out under direct labour operations, it is vital to analyse how the role of the clients has changed during this programme, which organisational systems and procedures have been introduced to handle this new situation, how the capacity development programmes have addressed this new situation, and finally what have been the major constraints in the implementation of the national policy on the use of labour-based technology and the private sector for the road works in Tanzania;

## *Terms of Reference*

### *Labour-Based Contracting In the Road Sector in Tanzania*

- *Consultants:* the study team will with a particular view to the above section look at the function and capacity of the consultants to take part in the supervision of the contracted road works; an important element of this part will be to look into the different roles to be performed by the consultants (planning and design, quantity surveyors, supervision, contract managers any possibility of management contractors), the development potential and, if found necessary, the need for a strengthening of the consultants' capacity to perform duties as contract managers for the client organisations;
- *Type of work carried out by the contractors:* this section will include a description of the kind of work the contractors have been and / or are undertaking following their participation in the training programme including sectors and groups of work like maintenance, rehabilitation, spot improvement, urban, rural, surfaced roads, if they are involved with non-roads work etc.; if possible, it would likewise be important to describe if contractors not having gone through any training programme and a subsequent classification as contractors have noticed any change in their access to work (control group);
- *Value of works in the different sectors:* in order to look at the present importance of the programme and plan for future activities, the following financial data should be obtained: identification of the annual value of works in the road sector that qualifies to be carried out deploying labour-based methods; the annual turnover of (typical) contractors using labour-based methods, their present market share in the road sector compared to the work that qualifies for labour-based methods but still carried out by contractors or force account using equipment based methods; any conventional labour-based force account operations still being carried out should also be discussed, although it is appreciated that data at the district level and to a certain degree regional level are difficult to obtain;
- *Quality of contractors work:* although data might be difficult to obtain, it would be of interest to find out if any objective assessment could be made of the quality of the work of the contractors and describe to what extent the type of work carried out meets with the needs of the clients; if possible it should be differentiated between work for which the contractors have been trained, and work carried out by "non-trained" contractors;
- *Contractors comments on the process:* as the business aspect of contracting is the overriding aspect in sustainability, perceived profitability is a key issue; other interesting issues like long term prospects, percentage drop out, ideas on what could have been done better and changes desired would be useful to clarify with the contractors;
- *Consultants comments on the process:* interest in the work already made available

to the consultants like contracts management and supervision in remote areas for instance for parts of or entire districts (interest in new roles like management contractors), perceived earnings in supervision and future prospects, in particular related to maintenance works, what capacities are available and what is envisaged necessary for a capacity development programme for consultants:

- *Clients comments on the process:* value for money, replicability, future expansion plans if any, ideas on what could have been done better and changes intended:
- *Special issues:*
  - + the appropriateness of embarking upon such a programme in competition with the international contractors, i.e. the policy environment for developing and utilising the private sector in Tanzania as against letting pure market forces decide upon the possible development of a local construction industry:
  - + training for private and public organisations, the continued organisation and financing of the training providers in the road sector in Tanzania. This should include both an assessment of the appropriateness of the present programmes organisation and for the longer term organisation when one hopefully has come to a situation where it is the upkeep, modernisation and increase of capacities rather than the establishment of a capacity that drives the programme. Important factors will be the composition of the training programme, the accreditation of the training programme and the skills/trades taught at the institution(s) (including certificates for skills/trades accepted by the present and future employers), the sustained financing and availability of the programme to the public and private sectors. It is likewise important to relate this training to the training curricula at the University and Technical Colleges in order to ensure that they are complementary and coordinated in terms of target groups and substance.

#### **4.0 Composition of the Study Team**

The study team will be composed of the following capacities:

- a consultant on labour-based technology and private sector development. This consultant will be appointed as team leader:
- a consultant on vocational training (VET) with a particular knowledge of subjects related technical training:

- a consultant who preferably is familiar with and knowledgeable of the labour-based technologies development in the road sector in Tanzania:
- a consultant who is very familiar with and knowledgeable of the private sector (contracting and consultant) situation in Tanzania.

The study team will have at its disposal a Panel of Resource Persons, who will be hired for a limited time (7 days: interviews, discussions and finally workshop) to provide the study team with information, documentation, views, comments, etc.

This Panel of Resource Persons (PRP) will comprise of:

- a contractor who preferably has been involved with the training and development programme and worked for any of the clients in the road sector in Tanzania:
- an expert from the Ministry of Works who has been involved with the development and implementation of labour-based technology in the road sector in Tanzania:
- an expert from the Ministry of Works on contracting in Tanzania:
- an expert from the National Construction Council on the civil works contracts.

Apart from meetings and discussions with the stakeholders mentioned above, other important representatives to meet for more than an interview would include:

- experts from the NCC on the Contractor Training Programme (NCC Training Team Leaders):
- an employer from the National Income Generating Programme:
- an expert from the Ministry of Science, Technology and Higher Education;
- an expert from the University of Dar Es Salaam;
- representatives from the donor community, presently heavily involved in the road sector and/or small scale contractor support programme.

## **5.0 Timing**

It is anticipated that the work will necessitate an input by the study team over a period of almost 7 weeks. However, as displayed in the attached work programme (see annex: Study Team Work Programme), the study team members will provide different time inputs according to the following work programme:

- two local consultants will work for two weeks on preparatory work including data collection before the arrival of the team leader:
- the international consultant(s) will spend four days on preparatory work before meeting the rest of the study team in Tanzania:
- one week will be spent on data analysis, interviews and possible visits to contracting programmes in Tanzania (the entire study team):
- another short week will be spent on discussions with the PRP (study team and PRP) and others as found necessary, followed by:
- another four days on programme analysis, preliminary reporting and preparation for the workshop by the entire study team, furthermore:
- a three day workshop will be held with a larger group of stakeholders to rest the preliminary findings of the study team (study team and PRP), before:
- four days of programme discussions and preparation of a report outline by the entire study team, followed by:
- another three days to finalise the inputs to the report, and finally:
- four days have been set aside for the finalisation of the report by the study team leader.

The work should be starting in March 1993.

## **Annex 4**

### **DOCUMENT REFERENCES**

#### **ANNEX 4: LIST OF DOCUMENTS REVIEWED**

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## **Annex 5**

# **WORKSHOP PROCEEDINGS**

## ANNEX 5: WORKSHOP PROCEEDINGS

### A5.1 OPENING REMARKS BY:

**MR S. ODUNGA, THE PERMANENT SECRETARY, MINISTRY OF WORKS**

**During the Workshop to Assess the Development of Labour-based Technology in the Road sector in Tanzania - Achievements and Proposed Future Direction**

**White Sands Hotel, Dar Es Salaam, 20 - 21 May 1999**

The Deputy Director of ILO Area Office Dar Es Salaam, Mr Patrick Doughty.

Representative of the Ministry of Regional Administration and Local Government,

**Representatives from donor community,**

**Executive Secretary, National Construction Council,**

**Government official and Representatives from different Organisations,**

Workshop Facilitators,

Distinguished participants,

Ladies and Gentlemen.

I feel especially honoured to be invited to participate and officiate at the opening of this important workshop. I would like to take this opportunity to thank the organisers and all those who have contributed in one way or another to have this workshop conducted.

Before I proceed further, I wish to pay special tribute to the group of Consultants who made great efforts to prepare the Report which is today on the table for deliberation. I recall the many trips they had to make in a very short time outside Dar es Salaam in order to meet different people and institutions to see for themselves what is actually possible and what is happening and which can bring meaning to the Programme. I also wish to especially recognise the role which the International Labour Organisation (ILO) is playing in this whole process. Thank you very much ILO.

During the next two days, I understand findings of the study carried out by the team of independent consultants on **development of Labour Based Technology in the Road Sector in Tanzania** will be presented to us. Participants will have the opportunity of understanding, discussing, exchanging ideas and proposing appropriate approaches towards development on the use of labour based technology in the road sector and the entire construction industry in Tanzania.

Distinguished Participants, ladies and gentlemen,

Without pre-empting what the consultants are going to present to us, I wish to remind you that the Government through the Ministry of Works, right from the launching of the Integrated Roads project (IRP), decided to maximise the use of locally available potentials and resources in the road sector. Initially, labour based technology was to be adopted in the rehabilitation and maintenance of roads starting with few selected regions supported by management assistance and intensive training, and thereafter was to be spread all over the country. The importance and benefits to be realised through the use of this technology doesn't need to be emphasised. In addition a few, they include:

- Generation of temporary employment during construction or rehabilitation as well as long term employment during maintenance of the infrastructure.
- Reduced foreign currency requirements by the road sector.
- Encourage growth of local industry through manufacturing and assembling tools and intermediate equipment.

- The Labour based technology is comparatively flexible and environmentally friendly.
- Labour Based Technology enhances injection of cash-flow into the local economy.

During the implementation of IRP, the Ministry of Works with financial support from NORAD has been implementing the Appropriate Technology Advisory and Training Project (ATATAP) aiming at institutionalising the use of labour based technology within the Ministry, thereby building in - house capacity. On the part of the private sector, different donors including IDA, USAID and UNDP supported labour-based contractors training which was introduced through the National Construction Council (NCC) in collaboration with ILO. Achievements or failures through these and other related projects will have significant contribution on current and future arrangements for the development and use of this technology appropriately.

This workshop shall discuss lessons from successes and failures as identified by the experts. Our main focus shall be to provide suggestions for appropriate, affordable and sustainable approaches towards adoption of the appropriate technology in road-works and elsewhere.

I believe the workshop objectives can only be achieved through participative discussions among ourselves as we are from different organisations, institutions and personalities with significant roles to play in the construction industry.

Distinguished Participants, ladies and gentlemen,

You have to realise that the purpose of this workshop is not for the consultants to impose solutions from somewhere. They are here to assist in stimulating informed discussions so that the future direction is decided by all of us involved. Proceedings, conclusions and recommendations from the workshop will be seriously considered by the Government towards the development and adoption of the Labour Based Technology in the construction industry as a whole but more significantly in road construction.

Before I conclude I wish to express the Governments sincere thanks to the funding Agencies for the study which are NORAD and the UNDP. Their involvement in this venture demonstrates their commitment to good roads for Tanzania as well as the Poverty alleviation component of the programme. I am sure that this partnership will continue to grow from strength to strength.

In conclusion, it is my sincere hope that you will all participate effectively and contribute fully and openly to this workshop.

*Thank you for your attention*

## **A5.2 THE KEY FEATURES OF LBT**

### **Labour-based technology - what is it?**

Labour-based technology is a structured method of constructing infrastructure, optimising the use of labour, with fair working conditions. The use of labour is supplemented with equipment where necessary for reasons of quality or cost. It is a supervision-intensive system (see also Definitions below).

### **Labour-based technology in Tanzania**

Labour-based technology was introduced into Tanzania in the late 70s, by the ILO's Special Public Works Programme. The construction and maintenance of roads received the highest attention of the number of projects implemented in at least twelve regions. Unfortunately, none of the road projects was executed in Kagera region. In the last few years, the ILO, in collaboration with the NIGP and the NCC, has been pioneering the training and use of labour-based contractors in the road sector in the Kilimanjaro, Arusha, Shinyanga and Mwanza regions. The Village Travel and Transport Project, a component of the World Bank's Sub-Saharan Africa Transport Programme, has also used labour-based methods in Makete.

The technology is supported by the Ministry of Works Appropriate Technology Unit (ATU), a component of the Appropriate Technology Advisory and Training Project (ATATAP) funded by NORAD.

### **The benefits of labour-based technology**

Public and community works programmes encompassing rural roads, irrigation, soil conservation, afforestation and urban infrastructure works have been implemented with different levels of success, resulting in the creation of direct and indirect benefits to the poorer parts of the population.

Examples of these benefits include:

- The creation of jobs in the rural and urban areas where other wage earning opportunities did not exist.
- The increased use of local resources, reducing dependency upon imported heavy equipment, fuels, spare parts and lubricants.
- The saving of scarce foreign exchange, while channelling money into the local economy.
- The acquisition of skills by workers for maintenance of the infrastructure.
- The fostering of a sense of ownership on the part of the beneficiaries.
- The empowerment of communities in the management of rural infrastructure assets created.

### **Labour-based technology applied to roads**

Labour-based technology is suitable for the construction of low-volume earth and gravel roads which carry no more than 200 vehicles per day (50vpd in the case of earth roads), and where the local wage rate does not exceed about USD5 per day. When properly supervised, the quality of the finished product is equal or superior to that built by machine.

Labour-based technology is *not* as suitable for the construction of heavily trafficked roads, or fully engineered roads (ie those designed with heavy earthworks, compacted subgrade, sub-base, road base, and surfacing), but it is still a viable option for many of the construction operations.

Labour-based technology implies an appropriate mixture of labour and machines. This mixture, in the context of road building, is generally applied as follows:

### **A5.3 SUMMARY OF FINDINGS**

#### **Policy**

Within the MOW there is a lack of an adopted and ratified policy and no strategy for implementation of LB methods for roadworks.

The Construction Industry has failed to benefit as expected from the IRP despite its formulation including a policy to favour the local construction industry.

Regional Engineers are allowed to decide for themselves what technology to use in their regions.

The establishment of TANROADS will change the focus of technology decisions. Environmentally, economically and technically viable implementation will be demanded by the MOW.

Decentralisation of road investment management to the District level will allow DEs to influence the choice of technology in their districts.

It is not yet clear how the MORALG will guide the DEs in the use of the newly disbursed Road Fund money. It is understood that this will be through its own Engineers at Regional level.

The draft national Construction Industry Policy includes a section on promoting LBT in order to create employment as a means to poverty eradication.

Money from the Road Fund is expected to solve road rehabilitation and maintenance problems. However, money by itself is not enough; effective disbursement requires technical, management, and procurement systems and personnel being in place.

#### **Application of LBT**

The application of LBT over the last 20 years has been piece-meal and donor-driven. However, it has been demonstrably viable.

Training in LBT is not coordinated, and lacks accreditation,.

Despite the potential at District level for the application of LBT, there is a lack of technical capacity within the MORALG.

Hardly any initiatives have been taken to apply the technology within an urban setting.

LBT is not recognised within the construction industry as a viable construction option.

LBT is included in the undergraduate course syllabus of the University of Dar es Salaam, but not yet at Masters level.

Training needs to be coordinated over the Construction Industry and the proposal for an Industry Training Board is welcome.

#### **Contractor Training**

The MOW and in particular the REOs were not fully involved in the training which was carried out by the NCC in Kilimanjaro, Arusha and Shinyanga regions. The training was only partially successful; some trainees did not finish their trial contracts.

The UNCDF project in Mwanza, where the NCC also provided the training, has suffered from delays, lack of human and equipment resources, and poor management.

The NCC is involved in other contractor training projects, and also in contract supervision, and plant hire services.

## **The Contracting Environment**

Small contractors face lack of access to credit, equipment, lack of technical and managerial skills; lack of continuity of work.

Under the IRP, barely ten per cent of the funds for roadworks went to the local industry (according to the evaluation), although this figure is said to be 39 per cent if funding from all donors is considered. No local consultants have received training in LBT, but the need for them is becoming more obvious.

Sufficient Clients' staff have not been trained in the supervision of LB contracting.

Neither PEHCOL nor the MOW has equipment suitable for small contractors to hire.

The majority of those contractors trained in LBT have had no work.

LB contractors' only recognised place in the contractor registration system is as specialists. None has registered.

Designs and tender documents are not 'technology neutral'. Instead, they are orientated to machine-based methods.

Appropriate contract documents for small-scale LB works have not been developed nationally.

## **ATATAP**

This project covers labour-based activities and training for roads in rural areas ('rural' and 'trunk' in the Tanzania context) and is aimed primarily at force account operations.

## **ATU**

The ATU is a low-status small unit within one branch of the Rural Roads Division. Its influence does not extend to other ministries.

Its excellent manuals have been distributed only within the MOW (plus 2 Districts) for government use. Other organisations eg NCC, UDSM have also received copies, via ILO.

## **ATTI**

Limited mostly to training only force account inspectors and foremen, and reliant upon MOW funding for its programmes.

### **A5.4 Workshop Report Summary**

(Details are given in Annex 5)

Thursday 20 May 1999. White Sands Hotel, Dar-Es-Salaam.

#### **1. Opening Ceremony: Introduced by Eng. L. Kyombo (ATU)**

Performed by, Deputy Director ILO Area Office - Mr P Doughty,  
Permanent Secretary. MOW - Mr. S. Odunga  
Director Rural Roads. MOW - Eng. I. W. Kijazi

#### **2. Introduction: Workshop Moderator (David Mason - ILO)**

- (i) Self-introductions
- (ii) What to we mean by LBT?
- (iii) Objectives of the Workshop
  - to review the findings/recommendations of the draft report
  - to agree on final version
  - to formulate an action plan



### 3. **Study Overview:**      **Team Leader (Peter Bentall)**

- (i) Presentation of the study team, the methodology and the executive summary overview
- (ii) Summary of Findings under the headings
  - Policy
  - Application of LBT
  - Contractor Training
  - Contracting Environment
  - ATATAP
  - ATU
  - ATTI

#### **Points of Clarification:**

- (i) CRB has a 'specialist' category for contractors - none of the labour-based contractors has applied
- (ii) NCC is the secretariat for the Construction Industry Policy
- (iii) Resistance to LBT ideas comes at many levels
- (iv) Regional Engineers hold the key to implementation
- (v) Is the prevalent 'lack of resources' used as a scapegoat for doing nothing?

### 4. **Policy & Institutional Issues:** **Eng. IN Kimambo**

A summary of the paper (contained in Vol II of the draft report) was distributed to all participants and presented by the author, under the headings

- Institutional developments of LB roadworks
- Decentralisation
- Impact of Government policies
- Donor support to LB roadworks
- Attitudes towards LBT

#### **Points of Clarification:**

- (i) Why is there GOT commitment but a lack of implementation?
  - engineers are cautious without a policy directive support
  - consultants are traditionally biased toward machines
- (ii) Decentralisation presents greater challenges to LBT unless strong directives exist
- (iii) Specific percentage targets for LBT help to concentrate the minds of engineers/contractors
- (iv) Besides the formal scene there is the small-scale maintenance work in the Regions - not trained but doing good work. They should not be forgotten.
- (v) Advertisement for local consultants for the Mwanza project did produce responses but no further action resulted - a failure of the project

- (vi) There are differences between contractor training in Kilimanjaro/Shinyanga (Phase 1) and Mwanza/Arusha (Phase 2)

**5. Key Policy Questions: Moderator**

- Do we know what LBT is?
- Is LBT a good thing?
- Should GOT support LBT?
- Does GOT need a LBT policy?

All questions received an overwhelming affirmative. It was agreed that many positive statements exist but these do not constitute policy. Several policy initiatives were identified which have some implications for LBT.

- Agricultural Policy (adopted)
- Transport Policy (draft-original 1988)
- National Employment Policy (draft)
- Construction Industry Policy (draft)
- Urban Development Policy (draft)

Although there was a suggestion that a Technology Policy should also be considered it was agreed that the timescale for progressing these documents to a Cabinet Paper precludes another initiative. LBT considerations need to be fully included in the current drafts under discussion. It was also agreed that Strategy is most important in order to get policy implemented (example - REO are generally unaware of the Minister's 20% share for LBT 'policy' statement).

NCC explained that a recent workshop had discussed the Construction Industry draft and comments were being incorporated into a revised draft.

Participants identified policy and strategy issues which should be included for the roads sector in the ongoing discussions coordinated by NCC. ATU should have a liaison role.

On the assumption that policy and strategy were then in place, participants identified the constraints which hinder the implementation of LBT in the sector.

The workshop facilitators were tasked with summarising these issues overnight.

**6. Contracting Issues: Eng. F. Skirima**

A summary of the paper (Vol II of the draft report) was distributed and presented by the author, under the headings,

- Assessment of NCC projects
- Environment for contracting
- Mechanisms for contracting
- Environment for consultants
- Procurement procedures
- Project sustainability
- Findings and recommendations

**Points of Clarification:**

- i) Preparation of contract documents for Mwanza was not by NCC and the supervision of Trial contracts is part of the NCC training.

- ii) Special Conditions of Contract were written for the original Kilimanjaro contracts and contractors did have the opportunity to acquire equipment through project finance. The Kilimanjaro contractors did complete all 3 phases of training. It was only when USAID withdrew that problems started.
- (iii) The question of 'tax-free' imported project equipment later getting into the general market has not been seriously addressed.

#### **Friday 21 May**

#### **7. Review of Day 1 and Summary Handouts: Moderator**

Summaries prepared overnight were distributed for later discussion and endorsement.

#### **8. Training and Economic Issues: D K N M Lema**

A summary of the paper (Vol II of the draft report) was distributed and presented by the author under the headings,

- ATATAP
- NCC
- Other programmes
- LBT training
- LBT costs and economics

#### **Points of Clarification and Discussion:**

- (i) Views differ with regard to training individuals or a company.
- (ii) Costs of training are difficult to compare - eg Kisii and ATTI are not alike. Kilimanjaro costs should be treated with caution.
- (iii) NCC had to bidding for (and negotiating) in some Contractor's training components (eg Kagera project). The competitiveness in financial offer to training is not always linked to gainful employment.
- (iv) An overview of the construction industry training needs is required. Experience from elsewhere is valuable, so too is that from projects eg Iringa. The single Client situation persists and there is a need to exploit other markets.
- (v) On economic aspects information from other countries is needed. Training should include socio-economic benefit aspects. South Africa has targeted procurement and Egypt also includes social components in contracts.
- (vi) District Engineers have been trained in World Bank documentation which is hardly appropriate to their scale of works.
- (vii) NCC sees a high interest on the part of contractors to be trained but they need more opportunities. At Morogoro/ATTI for example, the training is not limited to labour based methods only.
- (viii) In Kenya 2% of the fuel levy goes to a training fund.
- (ix) GOT needs to see LBT as employment creation potential and take affirmative executive action eg. as Philippines.
- (x) Would technical personnel be ready if this happened?

#### **9. Endorsement of Summary Documents: Moderator**

After discussion and necessary amendment these documents were endorsed

- Summary of Findings

- Observations on Policy/Strategy/Implementation
- Some Conclusions
- Constraints for Implementation

Some discussions had to be curtailed due to time constraints.

#### 10. Appropriate Technology Unit (ATU): Moderator

After unanimous (bar one or two not sure) agreement on the need for the ATU in some form and that at, in its present position, it is far less effective than it should be, various ideas for its relocation were discussed, which included,

- as part of the RMI unit (which has some cross-ministry influence)
- within NCC which has a statutory requirement to promote Appropriate Technology and the use of local materials
- within MoRALG which has the VTTP unit and an advisory role for Districts
- at an elevated level in MOW subject to a Steering Committee on which all interested groups would be represented

It was stated that NCC and ATU activities do not overlap but are both going in the same direction. NCC is a statutory body whereas ATU is project based and this needs to change if ATU activities are to develop LBT significantly.

The Director of Rural Roads favoured a unit reporting to the PS (to cut across departments), guided by a Steering Committee (to allow influence in other Ministries). An advantage of this is that it could be effected on the authority of the PS. Double the number of participants preferred this option to that of joining NCC.

#### 11. Appropriate Technology Training Institute (ATTI): Moderator

- Should ATTI be given a wider mandate?

This was agreed (since force account work is being phased out)

Training should be provided for,

- all sections of government
- private sector consultants/contractors
- anyone as part of career development

Research and development activities should be possible.

The status of ATTI could be,

- autonomous
- initially semi-autonomous leading to full autonomy
- affiliated to VETA
- part of NCC
- affiliated to an East African Community body

The questions of accreditation and assurance that LBT would be fully promoted if left to commercial forces were discussed and it was agreed that MOW would require a retained interest through a governing board. It was fully agreed that insufficient information exists to reach a firm conclusion as to the most effective role for ATTI in the overall training framework of the construction industry. A further specific study is recommended.

**12. Action Plan:**

Time did not allow any formulation of an action plan.

**13. Closing Session:**

- ❖ Eng. J W Kijazi, Director Rural Roads - MOW
- ❖ Eng. E Korosso, R E Shinyanga - MOW
- ❖ Eng. Prof T Rwebangira, University of DSM

The panel was introduced by Eng. L Kyombo and the workshop deliberations were reviewed. Thanks were expressed to the organisers, the facilitators, the presenters and the participants.

**A5.5 OBSERVATIONS BY WORKSHOP PARTICIPANTS****1 Policy**

- 1.1 Since a major resource in the construction sector in Tanzania is the availability of labour, and in view of the social and economic benefits of the optimal use of local resources, labour-based technology is to be actively promoted and supported.

This aims to achieve:

- involvement of communities in their own decision-making
- poverty alleviation through employment creation
- investment in basic infrastructure
- environmentally friendly construction practice
- equal work opportunities for men and women

- 1.2 Labour-based technology has potentially wide application in the construction sector and this will be developed particularly in the areas of:

- roads construction, rehabilitation and maintenance
- other rural infrastructure within water supply, building, irrigation, agriculture, forestry, and mining sectors
- urban settlements infrastructure

Many construction sector tasks can be carried out by LBM without sacrificing either quality or construction time, and full awareness of this will be promoted.

**2. Strategy**

- 2.1 Where appropriate, affirmative action will be taken in favour of the use of labour-based technology in construction projects, in order to provide an equitable balance between the use of different technologies and to optimise the socio-economic benefits through, for example:

- a specified percentage of workshare
- contract classification and contractor registration arrangements

- 2.2 Construction industry strategies will be implemented to achieve the goal of labour-based technology being seen as a viable construction option, by inter alia,

- ensuring technology 'neutral' designs
- writing equally appropriate contract documentation to allow contractors freedom of choice
- packaging contracts to be suitable for smaller-scale contractors

### 3. Implementation

- 3.1 To ensure the implementation of the policy through the established strategies, the roles and responsibilities of the stakeholders need to be clearly defined in the areas of:
- commitment of client organisations and their staff
  - procurement procedures
  - policy guidelines and technical guidelines
  - interests of specified target groups
  - labour working and payment conditions
  - institutional monitoring of labour-based technology activities
  - national coordination of labour-based technology promotion
- 3.2 Practical means need to be worked out to create an enabling environment for small-scale contractors by addressing the issue of access to,
- credit
  - appropriate tools and equipment
  - management and technical skills
  - workshare
- 3.3 Training interventions need to be effected to support the strategy implementation at all appropriate levels, including:
- client organisations
  - contractors
  - consultants
- 3.4 In addition, information and awareness regarding the benefits of labour-based technology need to be widely publicised.

## **SOME OF THE CONCLUSIONS BY WORKSHOP PARTICIPANTS**

The participants identified key policy aspects needed to promote the application of labour-based technology.

The participants are aware of other adopted draft and national policy documents, which include the promotion of labour-based technology.

The participants support the efforts by the National Construction Council in coordinating the production of a Construction Industry Policy.

The participants recommend that the policy aspects identified by the workshop be incorporated by the National Construction Council when revising the Construction Industry Policy draft. The ATU should seek to coordinate this input.

The participants believe that the National Construction Council's revised draft of the Construction Industry Policy will then provide a sufficient basis for a Cabinet Paper that will include policy statements on the promotion and application of labour-based technology.

In spite of fine policy statements by government officials in support of LBT implementation has not followed suit. Participants believe that clear guidelines from the Ministry to the implementers at the REO and DEO are required. Hence the policy document will need to be supplemented by a strategy document which will guide actual implementation of LBT.

## **CONSTRAINTS FOR IMPLEMENTATION OF LBT IN TANZANIA**

The constraints, the participants mentioned, are all related to the actors in the field of road construction. Therefore we divided them in the most mentioned actors, which are the clients, consultants, contractors, and training institutions.

It was also possible to subdivide these groups in items as objectives, information and resources.

The group recognised different (levels of) clients:

1. Government
2. The Ministry of Works
3. The Ministry of Regional Administration & Local Government
4. Local Authorities and communities

### **1. Government**

#### **Objectives:**

Donors seem to influence the objectives of the Government

#### **Information:**

Many of the politicians are not aware of the relationship between LBT and socio-economic issues such as community empowerment and employment creation. They consider LBT more expensive and less durable.

### **2. The MOW**

The key actors for the implementation of LBT within the MOW are headquarters, the regions and the ATU.

#### **Headquarters:**

#### **Objectives:**

LBT has a lower status. Donors are influencing the objectives of the HQ. The objectives of the different donors are not the same and might even be conflicting.

**Information:**

A part of HQ is also not aware of the impact of LBT on the socio-economic situation in Tanzania. LBT is also considered to be slower and less durable.

**Resources:**

HQ does not exercise its authority to either direct or control the regional engineers on the choice of technology.

The flow of funds is erratic.

**Regions:**

Most of the constraints are already mentioned, but some regions lack adequate information about LBT (information) and they lack suitable standards, tender documents, guidelines and other documentation (resources), (despite the efforts of the ATU). Some regions also lack well-skilled LBT contractors and consultants. The erratic flow of funds is a big problem for them.

**ATU****Resources**

The ATU miss the authority to impose LBT on the other departments within the MOW and have no power within the other ministries. It also has not enough money for training and raising awareness campaigns.

**3. MORALG**

Most of the constraints mentioned for the MOW can also be addressed to MORALG, except for those which were addressed to ATU.

**Communities****Information**

LBT is often considered to be slower and less durable and therefore in the end more expensive.

**4. OTHER ACTORS****(i) Consultants****- Objectives**

Most of the clients still think in equipment based technology. The one who is paying is the boss.

**- Information**

Most of the consultants do not have knowledge about LBT. Many consultants advise their clients to use EBT because LBT is said to be slow and not durable.

**- Resources**

There are few standards, tender documents, guidelines available. The number and quality of the training institutions are insufficient.

**(ii) Contractors****- Objectives**

Medium scale and big contractors are not always willing to use LBT.

**- Information**

Many contractors are not (well) trained in LBT, site management and business administration. They have often no experience with EBT.



- **Resources**

In some areas it is hard to find labourers for the job. (It is hard work and not well paid). LBT needs more supervisors, which might be scarce. Appropriate equipment is not available, or it is difficult to get a loan. Interest rates are high and banks require a guarantee. The tender process is not transparent.

iii) **Training institutions**

- **Objectives**

There are a variety of different training institutions with a variety of different goals.

- **Information**

Not all the training institutions are considered to be appropriate.

- **Resources**

It is difficult to find well skilled consultants in the particular field.

It is questioned if the training institutions would be economically sustainable.

**WORKSHOP CLOSING REMARKS BY THE DIRECTOR FOR RURAL ROADS - MOW**

**Engineer: J W Kijazi**

Workshop Facilitators,

Distinguished Participants,

Ladies and Gentlemen,

On behalf of the Permanent Secretary for the Ministry of Works, it is my pleasure to officiate at the closing of this two day workshop on the "Development of Labour Based Technology" in the Road Sector in Tanzania.

Ladies and Gentlemen, before closing the Workshop, I wish to make some few general remarks on the study and the Workshop itself.

First of all, I wish to thank and congratulate the consultants teams for their very candid assessment of the successes and failures, of the development of LBT in the Road Sector, in Tanzania. Their assessment, has been a true mirror of our below expectation past performance in the institutionalization of LBT. Of course, this has been a result of many shortcomings as identified by the Consultants Team and endorsed by the Workshop participants.

As we all have witnessed, during the workshop very constructive deliberations on the way forward towards improved development of LBT took place. Deliberations on LBT fundamental issues of Policy, Institutional arrangements and linkages, contracting, Training, application and delivery resulted into recommendations for future actions in these various issues. I believe these recommendations will make a meaningful input into the final report to be produced by the consultant. We expect to receive the final report of the study soon so that desirable action can be taken by all the stakeholders.

Dear Participants,

One of the criticisms raised during the Workshop is that we are good in initiating and commissioning programmes and studies which eventually, do not bear the expected results due to lack of commitment and follow-up actions by various stakeholders. Institutionalisation of LBT in Tanzania is no exemption to this dogma. It is my hope that this time the impasse will be resolved through all stakeholders taking serious actions on the recommendations of the study, more so because we, the main stakeholders have been involved in making these recommendations.

I thank you all for your very active and effective participation and contributions.

Lastly, on behalf of all the participants, I would like to thank the workshop organisers, facilitators and the funding agencies for making the Workshop take place successfully.

With these few remarks, ladies and gentlemen, it is now my pleasure to declare this Workshop officially closed, and I wish you all safe journeys back home.

*Thank you for your attention*

## **Annex 6**

### **ATATAP Budget 1999/2000**

**ANNEX 6: Appropriate Technology Advisory and Training Project  
Activity Plan and Budget Proposal for FY 1999/2000**

S/N	Acct No.	Activity Description	Annual Estimates (All figures x Million)			
			GOT (Tshs)	C-Funds (Tshs)	D-Fund (NOK)	Others Tshs
8.1		<b>Appropriate Technology Unit (ATU)</b>	38	20	0.235	0
		Administration. Office facilities. Research and Follow ups - monitoring	13.00			
		To conduct workshop with LB practitioners. those in the private sector to discuss Labour Based Technology in the Road Sector	20.00			
		Local Training of ATATAP staff	5.00			
		International Conferences for ATATAP Staff			0.035	
		Fellowships training courses at Kisii (two staff)			0.100	
		Follow up implementation of LB works in the road sector basing on Evaluation Report (ATATAP and NCC Contractors training Programme)		5.00		
		Study and implementation towards strengthening LB application training (aiming at having a reliable semi-autonomous training centre for all in need)		5.00		
		Evaluation of courses and performance of trainers and trainees (ATTI training impact)		3.00		
		Study and Evaluation of availability of appropriate tools and equipment for LBM in the road sector (existing situation and future plans)		7.00		
		ILO advisory services			1.00	
8.2		<b>Appropriate Technology Training institute (ATTI)</b>	192.0			
		Administration. Office facilities. Equip. and maintenance of base camp costs	50.00			
		<b>Training Courses</b>				
		MoW Technicians Course No.8	42.00			
		MoW Technicians Course No.9	42.00			
		MoW Engineers Special Courses	42.00			
		Tailor made courses for VTTP staff				
		Procurement of Equipment	16.00			
		<b>TOTAL</b>	<b>230.000</b>	<b>20.000</b>	<b>0.235</b>	<b>-</b>

*Costs covers Equipment hire, operations and maintenance, practical training, training materials, accommodation and upkeep of trainees*

## ***Annex 7***

### **DETAILS OF MOW TRAINED PERSONNEL**

## ANNEX 7: DETAILS OF MOW TRAINED PERSONNEL

1996/97 National Programme for Trunk & Rural Roads

Table IV: Distribution Of Regional Staff with Training  
or Experience in Labour-based Methods.

Region	No of Regional Staff		
	Trained in Labour Based Methods	Experienced in Labour based methods only	Total
Dar Es Salaam	1	0	1
Mwanza	6	0	6
Kilimanjaro	3	0	3
Mtwara	15	0	15
Mara	-	-	-
Tanga	36	0	36
Kagera	-	-	-
Shinyanga	15	-	15
Dodoma	4	0	4
Mbeya	18	20	38
Kigoma	-	-	-
Iringa	1	0	1
Coast	8	0	8
Morogoro	20	13	33
Arusha	6	0	6
Singida	3	0	3
Tabora	7	15	22
Ruvuma	4	1	5
Rukwa	12	14	26
Lindi	-	-	-
<b>TOTALS</b>	<b>159</b>	<b>63</b>	<b>222</b>

## **Annex 8**

### **SERVICES AVAILABLE FROM NGO (AROF)**

## **ANNEX 8: SERVICES OF AROF**

### **SERVICES THAT AROF CAN OFFER TO KAROM PROJECT**

#### **1.0 INTRODUCTION:**

AROF an NGO came from an International NGO (Save the Children - UIQ being involved on Road Maintenance projects in Karagwe District. Part of the SCE work *was* to develop the maintenance by Labour-based approach which is appropriate for Rural roads like the ones in Kagera region. on that basis AROF emphasis the continuity of skills and sustainability of the working processes.

Labour based works in Kagera Region was firstly done during SCF work in Karagwe district and on that basis AROF is the only organization within the regional which experienced on labour based operations as many others within the region has practised much on use of machine based. KAROM project will be supervised by a big foreign consulting firm to be appointed soon by the Netherlands Embassy. AROF is seeking for an opportunity to use its experience and expertise on this new project by working on partnership basis (Joint-venture) with the appointed consult firm. On Institutional building capacity this approach is acceptable; the, foreign firm working parallel with the local based organizations in sharing ideas from both parties while undertaking the work for certain projects and it is a common practise here in Tanzania.

AROF "a local based engineering NGO" has a good working relationship with the Local Government authorities from the regional level up the village level, and AROF is well known to all road stake holders. On that basis AROF is in good position to provide its local experience and expertise to the appointed foreign consultant for the good and smooth running of the KAROM project by working together on a joint venture. This can start at an early stage in organizing for the work shop before Commencing of the project.

#### **2.0 GEOGRAPHICAL LOCALE**

AROF is interested and capable to operate on the two districts, Karagwe and Ngara districts. The whole maintenance operations for this two districts can be assigned to AROF in terms of organizing, finding appropriate people to undertake the work instructing on the appropriate method and supervision of the actual work. AROF can act as a "management contractor". A management contractor - is a system where by the whole maintenance work for is contracted to say AROF and then AROF subcontract again the whole works to the individual small (micro) contractors and community labour.

This approach is proposed due to the fact that the project aims in developing capacity of the micro contractors at a local level and it will create the opportunity of their participation as they will deal with the agency there at the district level rather than



everything being done at a regional level while there will be many micro contractors/community labour leaving very far from regional Headquarters.

The proposed area of operation has been selected due to the fact that from the past 3 years with SCF work, we are familiar with the area, problems, we know people we used to work with them (Labours and already trained Headmans, and some village leaders at a local level). With regards to the general operations we are aware with the rains season and sport point with problems after raining which will make simple in prioritizing for maintenance activities. We also know well all the borrow pits for getting good quality gravel and for the tests which we have already done, we will not even need to do many tests.

As noted on the result of the work-shop conducted during project design, the project overall goal for sustainability is to develop maintenance capability at a local level which is sustainable in the long term, by establishing new road users committees and support existing road users, and promote the inclusion of community representative. All these are bests to be done by a local based NGO. AROF being involved on the above mentioned operations as private sector will full fill the development of institutional for the general public.

### **3.0 METHODOLOGIES:**

#### **3.1 MOBILIZATION OF CONTACTORS/COMMUNITIES:**

In undertaking maintenance of roads using Labour based approach, the people to be used will be the one living along those roads and this will enhance a greater participation of the beneficiaries at a local level which promotes and strengthening democracy and accountability as people participate in issues related to their governance and development. Also it helps in reducing bureaucracy and increasing efficiency since the level of decision making will be minimized (Ref: 2.0), making easy for people working / small contractor being under the organization based at the district level rather than making their arrangement at a regional level in Bukoba. Finally this approach ensures sustainability of the project and programme since the communities consider the project as a community projects, as apposed to those that are externally imposed.

Social aspects will also be considered through participation by carrying out activities that enhance the level of women participation, representation and development of women in road sector. From Karagwe experience women can work well provided at a start of the project you sensitize on their participation as Kagera people think road works are for men (paper on social impact of Labour based works in Karagwe District: Save the Children October 1997).

### **3.2 APPROACH TO MOBILIZATION**

Before start of the project the workshop will be conducted at the regional level for all road stake holders. At the district level seminar will be conducted, for sensitization on labour based works and women participation for all people from individual roads, then Technical Supervisors will be conducting meeting on roads with the people who will be working. On the first meetings people will get a basic knowledge of maintenance, keeping of tools and then tools will be distributed to the selected people ready to start the work.

**GANGS:-** will be developed for undertaking rehabilitation works. back log maintenance and emergency work.

The proposed set of hand tools required for a gang of up to 80 Labours is to provided.

**LENGTHMEN:** For routine maintenance of roads it is proposed to use lengthman contract system covering 1.5 km and a headman with a bicycle covering 15 km. A set of hand tools for the lengthman is to provided to them so that they may keep themselves.

For lengthmen and gangs it is proposed that at the start of the project they will be employed and paid for the task they accomplish and then after 6 month of the project then the gangs and lengthmans themselves will become as contractors.

#### **COMMUNITY CONTRACTOR/MICRO-CONTRACTOR:**

Will be created and trained on the general L-b techniques in undertaking the work.

For lengthmen and gangs it is proposed that at the start of the project they will be employed and paid for the task they accomplish and then after 6 month of the project then the gangs and the lengthmens themselves will became as contractors.

Simple contracts will then be used in undertaking the work.

**NOTE:** The exactly detail of the work plan and schedule will be prepared after the release of funds and the appointment of the consultant.

#### 4. SUMMARY OF THE SERVICES THAT AROF CAN OFFER:

##### 4.1 MOBILISATION OF LABOURS / CONTRACTORS

\* Training of Headmans/Road foremen and the labours themselves on:

- Basic skills/calculation
- Drainage works.
- Gravelling General maintenance
- Labour based rehabilitation works
- Task rates
- Road safety on roads

**NOTE:**

**For the case of Karagwe District this training will be very minimal as it was already done and people are readily available waiting for the work.**

On undertaking training AROF will need to be given a 5 km stretch of road for full labour-based rehabilitation site and 30 km of general maintenance to be used as a demonstration site for training, purposes (Modal Site).

\* Supervising constructions and maintenance. work:

- Road inspectors will be distributed to supervise the work. They will be submitting reports for each individual roads for the works undertaken and report to the standard report forms.

\* LOGISTICS:

AROF is in position for organizing all the logistics required for the maintenance programme in the proposed 2 districts:

(I) Organizing for workshop:

The workshop intends to be for all road stake holders. As started above it would be better if AROF can start fully at this stage by organizing the workshop in collaboration with the Regional Engineer in organising for the venue, people to be invited and all other logistics as may be needed for the workshop.

(ii) Hand tools:

Procurement, keeping and distributing to the site. As the tools wares, arrangement for replacement can also be made.

(iii) Light Equipment to support Labour based works:

As noted on the project design study, the problem of light equipment to support Labour based works in Kagera region is still there. Such equipments are like pedestrian rollers, towed graders, tractors, non tipping trailer and towed.

If the project can provide, AROF is interested in managing the plants and hires to the Micro-contractors / Communities working on roads. Also AROF can make an arrangement of getting additional light equipment from Mwanza - NCC and use or give to the micro-contractors.

## **5. DOCUMENTS AVAILABLE:**

- ❖ Standard developed forms for reporting (routine daily activities, 2 weekly return, monthly payrolls; daily record sheet for rehabilitation works, site instructions etc.).
- ❖ Contracts: for rehabilitation works (general condition of contacts, standard bills of quantities and the agreements).
- ❖ Contracts for labour based works (lengthmen) both in English and Kiswahili version.
- ❖ Standard Contracts for small minor works like supplying of gravel, install of culverts, road signs etc.

### **5.1 OTHERS**

AROF in working together with the appointed foreign consultant can help in:-

- Organizing for the office in Bukoba and fields offices in corroboration with the Regional Engineer.
- Communications issues - e.g organising for telephone, E-mail etc.
- Looking for finding local staffs e.g Engineers, Technicians and other supporting staffs like accountants, secretaries, cooks and guards.
- Providing secretarial services for the programme (AROF owns 2 desktop computers, 2 printers and 1 laptop).
- Advising the foreign consultant on general issues/situation of Kagera region.

**5.2    RESOURCES OWNED BY AROF:**

*	Land rover	2
*	Yamaha motorcycle	2
*	Computer	3
*	Photocopy machine	1
*	Laboratory equipments for testing quality of gravel/compaction	
*	Culvert mould (4 set) for 600mm diameter culvert rings	
*	A set of hand tools for routine maintenance which can cover 100 kms	
*	Office furniture	

## **Annex 9**

# **EXTRACT FROM DRAFT CONSTRUCTION INDUSTRY POLICY**

## ANNEX 9: EXTRACT FROM DRAFT CONSTRUCTION INDUSTRY POLICY

### 4.8 Supporting Poverty Alleviation

- 4.8.1 The Construction Industry is one of the sectors which can contribute to poverty alleviation through sustainable employment creation and human resource development. Immediate possibilities to create employment opportunities are available through labour based construction related activities and community based delivery arrangements.

Successful implementation of either labour based or community based delivery arrangements must begin with the design brief and the design itself. Consultants and public clients are technically ill-equipped to commission and manage these types of delivery arrangements. The majority of contractors also lack necessary technical and managerial skills for labour based works particularly with regard to works of civil engineering nature.

Without proper design and management, and beyond a certain threshold, labour based construction can be less cost effective than machine based. In terms of cost trade-off between labour and machines based projects, one should balance the need for job creation against the need to deliver construction goods and services in a cost effective manner. Furthermore, community participation can equally be less cost effective. A strict cost comparison of the different construction delivery models will fail to take account of the benefits of poverty alleviation and community empowerment.

Employment creation and community participation in construction related activities shall be promoted in a manner that will provide quality assets and address the need for poverty alleviation through the following strategies:-

- a) Promoting the optimum use of labour based methods
- b) Facilitating the transfer of skills to rural communities to enable them effectively participate in the production of materials, adequate shelter delivery and in the construction and maintenance of physical infrastructure facilities:
- c) Promoting transfer of technical and managerial skills to contractors for labour based works:
- d) Facilitating capacity building of communities to be able to ensure effective participation:
- e) Promoting transfer of technical and managerial skills to consultants and public clients to be able to design and manage labour based and community-based works:
- f) Creating awareness and commitment on the importance and viability of both labour based and community based delivery arrangements.

## **Annex 10**

### **CONTRACTORS' EVALUATION - MWANZA**



## **ANNEX 10: CONTRACTORS EVALUATION - MWANZA**

### **EVALUATION OF CONTRACTORS**

#### **A. SELECTION OF CONTRACTORS FOR TRAINING**

1. Following a seminar held on 10/05/95 in Mwanza, 44 Contractors returned completed questionnaire forms indicating their willingness to participate in the Contractor Training Programme.
2. Details of the questionnaire on the marking scheme established by the project have been attached in Appendix CS.
3. The 24 short listed contractors were requested to submit the originals of supporting documents (i.e company registration, plant & equipment registration) for verification.
4. Based on the above, the project proposed the underlisted firms to be selected for three training courses.

#### ***FIRST TRAINING COURSE***

- I. V.A. Enterprises Ltd.
- II. Kashere Enterprises Ltd.
- iii. Msalala Construction Company Ltd.
- iv. New Century Construction Co. Ltd.
- V. Madata Investment Ltd.
- VI. Intrac Construction Co. Ltd.

#### ***SECOND TRAINING COURSE***

- vii. Ng'wanza Shinyanga Construction Co. Ltd.
- viii. Cyril Investment Co. Ltd.
- ix. Tropical Investment Co. Ltd.
- x. Kisesa Building Contractors Ltd.
- xi. Gagu Investment Co. Ltd.
- xii. Kilimanjaro Cross Road~Co. Ltd.

#### ***THIRD TRAINING COURSE***

- xiii. T.M. Enterprises.(T) Ltd.
- xiv. Mulinda Building Construction Co-op.
- xv. Teki Contractors Ltd.
- xvi. Sanane & Company
- xvii. Lake African Quarry Contractors Co. Ltd.
- xviii. Yatabu Builders

## **B. PRE-QUALIFICATION OF LABOUR BASED CONTRACTORS**

### **Introduction**

A weighted marking scheme has been established for the pre-qualification of labour based contractors. This scheme takes into consideration factors such as:

- i. The professional qualification of the owner of the firm or any the management staff.
- ii. The caliber of supervisors that the firm intends sponsoring for training.
- iii. The minimum working capital the firm can raise.
- iv. The basic equipment holding of the firm.
- v. Whether firm has an immovable property which could be used as collateral to a bank for obtaining guarantees.
- vi. Whether firm is locally based and experienced with a sizeable labour force.

Although the scheme makes it difficult for beginners to qualify, on the other hand, it does not in anyway favour the well established firms since firms are penalized for possessing heavy capital intensive equipment or having other diversified business interests. The rationale for this approach is to ensure that the Managing Director spends time on the job and considers this programme to the extent possible as a major source of livelihood.

## EVALUATION SHEET FOR MWANZA CONTRACTORS

		Company No.					
	Score	1	2	3	4	5	6
<b>LOCATION OF OFFICE</b>	(5)						
In the Region	3						
Outside but executed work in the Region	2						
<b>QUALIFICATION OF STAFF</b>	(15)						
Form IV/ Trade Test III	5x3						
Standard 8	2x3						
M/D Management staff degree	(5)						
Diploma / Technician	3						
Standard 7	2						
<b>WORK EXPERIENCE</b>	(10)						
Building / Civil works Contract Value							
Up to 1 Million Tshs	2						
1 - 3 Million Tshs	4						
3 - 5 Million Tshs	6						
5 - 10 Million Tshs	8						
> 10 Million Tshs	10						
<b>Other Business Interest apart from above</b>	-2						
<b>EXPERIENCE WITH SIZEABLE LABOUR FORCE</b>	(5)						
Up to 10 labourers	2						
10 - 20 labourers	3						
> 20 labourers	5						
<b>Late submission</b>	-5						
<b>VEHICLE AND PLANT HOLDING</b>	(20)						
Pick up	3						
Tractor/Trailer/Bowser - pump	5						
Tipper	5						
Roller/Concrete mixer/Concrete vibrator	5						
Additional Tipper/Tractor	2						
Deduct for Grader	-5						
<b>WORKING CAPITAL</b>	(15)						
Up to - 300.000 Tshs							
300.000 - 500.000 Tshs	5						
500.000 - 1.000.000 Tshs	8						
1.000.000 - 3.000.000 Tshs	10						
> 3.000.000 Tshs	12						
	15						
<b>LANDED PROPERTY</b>	(10)						
Up to 6 Million Tshs	3						
6 - 8 Million Tshs	5						
8 - 10 Million Tshs	7						
> 10 Million Tshs 10	10						
<b>COMMENTS</b>	(15)						
If there is indication from MD/Director to attend the course personally	5						
Comments from RE	5						
If a firm sponsors a female supervisor	5						
<b>TOTAL SCORE</b>	100						
<b>POSITION</b>							

## **Annex 11**

### **CONTRACTORS INVOLVEMENT – MRSP**

# **ANNEX 11**

The Government of the United Republic of Tanzania  
Ministry of Works

The Government of Switzerland  
Swiss Agency for Development and Cooperation

## **MOROGORO ROADS SUPPORT PROJECT (MRSP) Contractor Involvement Component (CI)**

### **CONTRACTOR INVOLVEMENT PART OF THE MOROGORO ROAD SUPPORT PROJECT, PHASE III, JULY 96-JUNE 99**

#### **EXECUTIVE SUMMARY**

##### **I. BACKGROUND**

The Integrated Roads Project (IRP) was launched in 1990 as a mid-term programme aimed at stabilization and restoration of the road network. MRSP financed by the Government of Tanzania (GoT) and the Government of Switzerland (SDC) is designed as a regional programme fitting into the overall framework given by IRP. The percentage of roads in good condition in the Morogoro Region has to increase.

In order to reach the nation wide targets the evaluation of MRSP Phase II identified a need for a formal training of local contractors.

The economy of Tanzania undergoes a privatization process; with the increased outsourcing of works it is important for both the Government, represented by the Regional Engineer and the contractors that deficiencies in the performance of local contractors are alleviated. Improved performance will result in profitable business for the contractors and better value of works for the client.

Together with the contracting out of works the client-contractor relations are to be developed towards equal partnership to achieve the set goals of IRP

##### **II. THE REGIONAL CONTRACTORS ASSOCIATION**

The development of contractors can be accelerated if the contractors are organized in a suitable manner as to provide practical advice, expertise and information to contractors to act as a strong body towards clients when negotiating e.g. general contract items or tender board rates.

The Regional Contractors Association (RCA) as a branch of TACECA was actually formed in June 97.

Until today, 28 contractors in Morogoro region have joined the Association. This figure shows that there is will power to move forward.

The active part of ITECO as the Supporting Agency (SA) is assisting and advising the RCA at the beginning. It will gradually be reduced until the goal of a fully operational RCA by itself is achieved, and the role of the SA is the one of a monitorer only.

### **III. THE TRAINING OF LOCAL CONTRACTORS**

#### ***III. 1 Structuring of the Training***

The training schedule includes training according to the type of works, each with three training phases, namely:

- ❖ Training sessions in a 'classroom environment including lectures, group discussions, **film** and video demonstrations **and** practical **assignments**
- ❖ **(Attachment 1)**
- ❖ Practical training on a Demonstration Site organized and managed by the Training Consultant (for Gravel Road Works and Bituminous Road Works Contractors only). See also Attachment 1
- ❖ Trial Contracts awarded and managed by the REO, but works executed **with** guidance and assistance to the Contractors provided by the Training Consultant at the planning, tendering<sup>1</sup> mobilization, construction and completion phases (on the job training). (See also Attachment 3)

Courses are held separately for managers/engineers and supervisors. The courses started in April 97. The National Construction Council (NCC) is employed by the Supporting Agency (SA) to provide trainers.

The contractors were grouped into 17 Gravel Road Works Contractors (GRC) and 10 Bridge and River Control Works Contractors (BRC).

3 CRC will also be trained in Bituminous Road Works. (Bit PC), in order to provide them with the necessary know how for the execution of maintenance and minor rehabilitation works on paved roads.

#### ***III.2 Access to Equipment***

The MRSP 111 training programme includes labour based and equipment based methods of road works.

One of the key elements in road and bridge construction is the availability of equipment. Owning equipment is seen by most of the contractors as the most important 'element for the development of their enterprises.

As for the access to equipment, the idea of establishing a financing scheme on commercial basis for its purchase created big expectations among them.

However, a study done by a consultant showed the following:

1. A medium scale contractor needs to do business worth between TShs. 200 and 500 m a year to remain viable.
2. For the medium scale road contractors with a need for purchasing equipment the purchasing cost would be several hundred million TShs. business turn over does not allow them to service loans of such a magnitude.
3. For the small road contractor the basic equipment would cost between Tsh. 50-65m. Given that the loan would have to be repaid within 5 years at commercial rates of interest the borrower will have to pay about TShs. 12m a year, which is not possible with regard to the actual annual turn over of about TShs. 5m.
4. Only a credit scheme for small-scale bridge contractors geared at facilitating the purchase of basic equipment could be viable. But again it is not viable to start a scheme only for small bridge contractors, as the number of maximum 5 is too low to run it economically.
5. The Equipment Hiring Unit (EHU) was set up to provide a method of making basic equipment accessible to contractors. It is this unit that can be strengthened to continue to play this role. This means:

With regard to:

- the poor financial potential of the contractors in the training;
- the small volume of works that can be contracted out by the RE to the local contractors;
- the actual availability of equipment on hire basis to contractors;
- the short remaining period of MRSP III, within which the purchased equipment by the contractors would have to be financed;

It was decided that the establishment of any credit scheme for the purchase equipment by local contractors in the training is not viable.

### ***III.3 Relaxed Conditions for Bidding***

In order to promote small contractors some conditions for bidding were relaxed as follows:

- ❖ Tender documents are free.
  - ❖ No bid bond is required.
- In lieu of a security bond for advance payments evidence of assets such as title deeds and registration cards are accepted by the client.

### 111.4 Financing

- ❖ Financing of the formal Training (Classroom and Demonstration Site); The Training is almost fully financed by the Government of Switzerland (SDC), with a tiny contribution from the Government of Tanzania (GoT).
- ❖ Financing of the Trial and Demonstration Site Contracts: Co- financing by GoT, 10% and SDC, 90% as a rule. But, due to EL-NINO that played havoc with the whole road network additional funds for emergency repairs were released by SDC; they are partly used for fully SDC financed Trial Contracts.

The contracts prepared by the REO's office are part of the REO's road works programme

### 111.5 Methodology for the implementation for trial contracts

#### A. Award of Contracts

		Batch 1		Batch 2		Batch 3	
		No. of invited contractors	No. of Awarded Contracts	No. of invited contractors	No. of Awarded Contracts	No. of invited contractors	No. of Awarded Contracts
GRC	Small	4	4	3	3	4	4
	Medium			3	3	3	3
BRC	Small	2	1	3	2	2	2
	Medium	2	1	3	2	2	2

To allow for competition among the invited contractors, the following two approaches were chosen:

- CRC: The number of invited contractors is identical with the number of awarded contracts, but the contract sums differ. For every batch all contractors quoted for the total number of contracts. Award was done according to the overall ranking within this batch, with the biggest contract awarded to the best bidder.
- BPC: The number of invited contractors is bigger than the number of contracts to be awarded. The contractors ranked on top were awarded a contract. The remaining contractors were invited to tender again with the next following batch.
- The Contractors were invited individually to the negotiation meetings. As these meetings are seen as part of the training, the trainers were also present. Not all the contractors were able to defend their rates, which shows that there is still a need for additional training inputs.

#### B. Execution of Contracts

Each contractor is awarded a first Trial Contract. During the execution of the works, the trainers from NCC visit regularly their sites and advice the contractors on technical and managerial matters. Besides there are formal site meetings with



the client every weeks. In addition to the above, the office of the trainers runs a help desk for the contractors. The performance of the latter is assessed during the whole contract period. A final evaluation is also done as a base for the selection of the contractors for the second trial contract period. Contractors who mark less than 50 don't qualify for the further training. Another evaluation form is filled in by the contractors after finishing of the works. It is used for identifying additional training inputs, getting information about the communication between contractor, client and trainers, as well as experience made on equipment hiring

### ***III.6 Experiences made so far***

- A. Regional Contractors Association (RCA) in Morogoro Region as a Member of TACECA
- ❖ After the formation meeting on 28.6.97 in Morogoro, the RCA was at first not very active; it took e.g. more than half a year to open a bank account and almost the whole

## **Annex 12**

### **EXAMPLE OF POLICY DIRECTIONS - PHILLIPINES**

**MALACANANG**

Manila

**BY THE PRESIDENT OF THE PHILIPPINES**

EXECUTIVE ORDER NO.94

**ESTABLISHING THE POLICY DIRECTION AND INSTITUTIONAL  
FRAMEWORK TO IMPLEMENT LABOR-BASED EQUIPMENT  
SUPPORTED INFRASTRUCTURE PROGRAM**

WHEREAS, the primary strategy of the poverty alleviation agenda of the administration is to eliminate obstacles that will prevent the poor from becoming productive and competitive members of the society:

WHEREAS, in line with this strategy, the government shall promote technologies and approaches as instruments for the economic empowerment and job creation for the poor;

WHEREAS, to mitigate the labor displacing effects of the economic crisis, there is need to further strengthen these technologies and approaches, such as those which support labor-based equipment supported methods in infrastructure programs and projects;

WHEREAS, labor-based equipment supported methods sustain and institutionalize employment intensive approaches by encouraging optimum use of labor while ensuring cost effectiveness and quality results in the implementation of infrastructure projects;

WHEREAS, labor-based equipment supported methods also reduce reliance to importation of construction equipment and machineries;

WHEREAS, Executive Order 336, series of 1988, established labor-based units in the infrastructure agencies of the government;

WHEREAS, departments and agencies have been encouraged to maximize the use of labor intensive construction technology;

WHEREAS, there is a need under the premises to strengthen implementation of labor-based equipment supported method through the institutionalization of more focused policy direction and operational framework will ensure the success of this strategy in alleviating

unemployment.

**NOW, THEREFORE, I, JOSEPH EJERCITO ESTRDA, President of the Philippines,** by virtue of the powers vested in me by law, do hereby order:

**SECTION 1. Adoption on of the Policy Direction for Labor-Based Equipment Supported (LS-ES) Infrastructure Program.** It shall be the policy of the government to utilise LB-ES method in infrastructure programs and projects, including foreignhinded projects as the technology of first choice, whenever it is possible and feasible, to alleviate underemployment and unemployment, promote self-reliance and conserve foreign exchange through reduced importation of construction equipment and fuel.

To attain the desired objectives and ensure efficiency in the implementation of LB-ES Infrastructure Program, the following policy guidelines shall be adopted:

- 1.1 The LB-ES Infrastructure Program shall employ a technology in which labor, supported by light equipment, is used as a cost effective method of providing or maintaining infrastructure to a specific standard.
- 1.2 The program shall place a premium in the recruitment and placement of displaced workers in LB-ES projects and include training programs for sustained upgrading of the skills and competencies of these workers.
- 1.3 For projects where LB-ES is found appropriate, there must be a dramatic shift in favor of the labor based component.

**SEC. 2. Creation of LB-ES Infrastructure Program Committee.** There is hereby created an LB-ES Infrastructure Program Committee (hereinafter referred to as the "Committee) to oversee and ensure the efficient utilization of LB-ES method in infrastructure programs and projects of government.

- 2.1. Composition. The Committee shall be composed of the Secretary of Public Works and Highways as Chair, the Secretary of Labor and Employment as Co-Chair, and the following as members:
  - i. Lead Convenor, National Anti-Poverty Commission
  - ii. Undersecretary, Department of Interior and Local Government

- iii. Undersecretary, Department of Transportation and Communication
- iv. Undersecretary, Department of Energy
- v. Undersecretary, Department of Education, Culture and Sports
- vi. Undersecretary, Department of Agriculture
- vii. Undersecretary, Department of Agrarian Reform
- viii. Undersecretary, Department of Environment and natural Resources
- ix. Undersecretary, Department of Finance
- x. Undersecretary, Department of Budget and Management
- xi. Deputy Director-General, National Economic Development Authority
- xii. Chairperson, IIUDCC
- xiii. President, League of Provinces
- xiv. President, League of Municipalities
- xv. President, League of Cities
- xvi. President, Liga ng mga Barangay
- xvii. Five (5) representatives from the private sector representing contractors, employers, engineering consultants, academe and labor groups to be appointed by the President from among the nominees of the Committee.

The Committee may call on other agencies as may be needed.

2.2 Functions. The Committee shall undertake the following functions and responsibilities:

- a. Formulate a National Program on LB-ES to provide the framework that will guidelines implementation of LB-ES methods and technology at the national and local levels, including the specific guidelines to implement the various components of the program thereof;
- b. Coordinate and monitor all programs/activities related to the implementation of LB-ES;
- c. Resolve policy and operational issues and problems which may arise relative to the implementation of the program, in close coordination with concerned agencies/entities;
- d. Determine training and technical assistance requirement for both the public and private sector involvement in this program;
- e. Submit quarterly reports to the President on the status of the implementation of the National Program, including

issues and attendant recommendations thereon; and

- f. Perform other functions that may be directed by the President.

2.3 Secretariat. Technical and administrative secretariat support services to the Committee shall be provided jointly by DPWH and DOLE.

SEC. 3. Funding. The funds necessary for the initial implementation of the program, including fund sources thereof, shall be determined by the Committee. Thereafter, funding requirements necessary for the continued implementation of the program shall be included in the annual National Expenditures Program.

SEC. 4. Repealing Clause. This Order amends all issuances, rules and regulations or any part thereof which are inconsistent with the provisions of this Order.

SEC. 5. Effectivity. This Executive Order shall take effect immediately.

Done in the City of Manila, this 12th. day of April, in the year of Our Lord nineteen hundred and ninety-nine.