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INTEGRATED RURAL ACCESSIBILITY PLANNING AND RURAL ACCESS INTERVENTIONS

by

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1. A BOTTOM UP APPROACH TO RURAL ACCESSIBILITY: WHY IS IT NEEDED

There is an emerging awareness in Africa and Asia of the scale of the transport burden undertaken by rural communities to meet their basic needs and of the degree to which it inhibits their social and economic development. There is a parallel recognition that conventional approaches to rural transport, with their focus on roads and motor vehicles, are largely failing to address the transport needs of rural people.

Studies on the transport needs of rural people of Africa and Asia provide evidence for broadening the nature and perception of the transport problems in rural areas. These studies give an insight to ways in which transport can be seen as a "facilitator" and as part of a coherent and integrated set of measures to promote economic and social development. A more appropriate definition of rural transport is expressed in terms of the provision of "ACCESS". Poor access leads to isolation which is a major factor contributing to poverty. Increasing the mobility of the rural population and improving their access to employment opportunities and other socio-economic services and facilities is an effective means to reduce poverty.

Access encompasses two aspects of rural travel and transport:

- the ease or difficulty at which people move themselves and their goods to socio-economic facilities and
- location of social and economic services.

The latter is important. It brings in the concept that provision of transport may not be the only solution to a transport problem. Another solution could be the better location of services that reduces the time needed to reach those services. This implies that investment in transport interventions must be weighted against that of non-transport solutions to the rural transport problems.

Access is therefore, a much more comprehensive approach to the problems of transport in rural areas. It places transport as a "facilitator" of development and it recognizes non-transport solutions as an alternative to transport problems. It is necessary to look closer at the access needs and priorities of the

rural population and to develop a co-ordinated, integrated set of interventions to meet these access needs.

2. ROLE OF THE ILO

The ILO, in pursuit of its strategies of poverty reduction and employment generation, has been providing technical assistance in support of Rural Accessibility. This assistance includes the provision of policy advice, training, needs assessment and project development, research and studies, monitoring and evaluation, technical input to universities and training institutions, NGOs and government organizations, advocacy and promotional activities, and production and dissemination of information materials. The ILO has been working in collaboration with NORAD, SIDA, SDC, UNDP, the International Forum for Rural Transport Development (IFRTD), the World Bank, the Government of the Netherlands and ITDG.

3. WHAT IS INTEGRATED RURAL ACCESSIBILITY PLANNING (IRAP)?

The IRAP methodology defines the access needs of rural households in relation to the basic, social and economic services that a household requires. It is a co-ordinated and integrated planning process. It has been undergoing continuous development, placing IRAP in a wider development context.

IRAP allows the integration of:

- rural households' mobility needs,
- the siting of essential social economic services,
- the provision of appropriate transport infrastructure

4. WHAT ARE THE KEY FEATURES IN ACCESSIBILITY PLANNING?

IRAP is a new approach to planning in rural access that has been developed from studies and pilot projects in several Asian and African countries. It is a multi-sectoral and integrated approach that:

- considers all aspects of household access needs for subsistence, economic and social purposes
- involves communities in different stages of

- planning procedures
- is based on a thorough but easy to execute data collection system
- uses households as the focus of the planning process
- includes gender issues in its analysis
- is simple to use and undemanding in terms of the needed resources and
- uses the bottom up approach to planning and links to the overall planning framework,
- gives high priority to the protection of the environment

The IRAP process leads to the development of a comprehensive set of information on the location, condition and use of rural infrastructure and services, prioritises investment and identifies access interventions.

IRAP further emphasizes building of local capacity and use of local resources (materials and human) in the implementation and maintenance of locally initiated projects. It includes the adoption of appropriate technologies and labour intensive methodology. The end result of IRAP is a set of defined and prioritised interventions to improve people's access.

5. WHAT IS IRAP METHODOLOGY?

The IRAP uses inputs from communities in order to:

- identify the access problems in the rural areas,
- prioritise problems and identify appropriate interventions,
- formulate programmes to address prioritised access problems

The above process is linked to the local level planning framework. It includes an initial training programme for local authorities that explains the concept of IRAP and instructs the staff in procedures for data collection. This is followed by data collection, an analysis of the data and the development of a draft action plan. The plan is then discussed in a second training program or seminar where the data is validated with different stakeholders in the communities and where the process of prioritising access interventions and allocation of investments is explained. The whole process takes a total of six months for a province and three months for a district. It is participative and owned by the stake holders.

6. WHAT ARE ACCESS INTERVENTIONS?

The IRAP process defines a prioritized set of interventions that will lead to improved people's access and reduce their isolation from socio-economic opportunities.

The access needs are met by

- improving the location of services or facilities
- and the provision of transport infrastructure and transport services.

Key access interventions may be categorized into the following groups:

6.1. Rural infrastructure

- improvement of track, foot paths and foot bridges
- development of track, foot paths to fields, firewood, water sources, etc.
- improvement of selected roads to maintainable and safe standard, carried out through community participation

6.2. Rural Transport Mobility

- improvement of efficiency of existing low cost Intermediate Means of Transport (IMT),
- development and introduction of alternative low-cost IMT,
- development/introduction of water borne means of transport.

6.3. Enabling Environment for Rural Mobility

- facilitating credits to purchase Intermediate Means of Transport (IMT), e.g, animal drawn carts, bicycles, donkeys, etc.
- facilitating transport services by improving their operation and management system and increasing their availability
- providing training for the production and maintenance of IMTs

6.4. Accessible Location/Sites of Facilities/Services

- installation of water supplies and improvement of sanitation measures
- better distribution of rural health centers, schools, etc.
- improvement of the system for the supply of agriculture inputs,
- development of market facilities
- Improved distribution of grinding mills and their maintenance.

6.5 Environmentally Friendly Measures

Introduction of improved ovens, development of woodlot, etc.

7. WHAT HAVE BEEN THE MAJOR

ACHIEVEMENTS OF RURAL ACCESSIBILITY PLANNING AND ACCESS INTERVENTIONS?

Pilot projects and research/studies on IRAP carried out in Asia and Africa have led to:

- a broad understanding of the complexity and seriousness of access and mobility problems in rural areas;
- extensive information on patterns of rural travel and transport and on the transport burden of rural households in general, and of women and children in particular.

- data survey procedures and questionnaires for application at household, village, ward, district, province and national levels.
- a detailed data base which can be used for rural development planning,
- guidelines on IRAP methodology with global application
- guidelines on gender issues
- training manuals on infrastructure improvements, e.g, foot-paths & tracks

The above mentioned results are available upon request. For further information contacts may be made to the attached list of individuals and organizations.

Information on Rural Transport and Development in Kenya a discussion paper

by

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1. Introduction

The term "rural transport" has been introduced to foster an approach that considers a wide range of transport interventions (including paths and tracks, intermediate means of transport and transport services) to complement the conventional interventions in roads and motorised vehicles. It aims to increase economic growth by addressing the actual access problems of rural people, especially of women, who are carrying the main transport problem burden.

To have a well functioning rural transport and development system requires information at four different levels. These levels are:

1. International: guidelines and case studies
2. National: policies and guidelines
3. National: awareness ranging and planning
4. Local: local transport situation, planning and implementation

This paper gives guidance on available information on rural transport in Kenya. It is not however, exhaustive.

A list of available documents on rural transport and accessibility are given in the annexes, as follows:

Annex 1: Documents available at the ILO, Policies Development Department

Annex 2: Documents available at ILO/ASIST, Nairobi

Annex 3: Documents available at ITDG in Kenya

Annex 4: Rural Transport Projects of ITDG, in Kenya

Annex 5: Integrated Rural Accessibility Planning: recommended literature

Annex 6: Summary of Kenyan Transport policies

2. International Level

Since the concept of rural transport was developed, a large number of surveys, reports and books have been written on the subject. What is lacking, however, is a thorough study on the costs and benefits of a rural transport system, which can convince policy makers.

Information has been obtained from different parts of the world, such as:

Makete project in Tanzania.

In the Makete project, the so called Integrated Rural Transport approach was first tested. This project started in 1995. Outputs have been various transport interventions (roads, paths, intermediate means of transport); awareness raising; and the development of a new planning methodology that can be applied in rural areas. The planning methodology is presently being implemented on a larger scale.

The project produced a considerable number of guidelines, which may be useful in the Kenyan context.

Pilot Integrated Rural Transport Project in Malawi

This project is similar to the Makete project, although more emphasis has been given to the development of study materials. Guidelines from the Malawi project are still being developed.

Pilot project in the Philippines. The project in the Philippines moved from a transport planning approach to an accessibility approach. Transport is seen as only one of the solutions of a lack of access to public services and markets. The other solution is moving public services closer to the people. This change in approach was enabled by the presence of a strong local planning system.

The projects developed a new planning methodology called: Integrated Rural Accessibility Planning (IRAP). The main difference between Integrated Rural Transport and Integrated Rural Accessibility Planning is that IRAP uses both transport and non-transport in its planning system. The new methodology resulted in a regional ILO/ASIST project. This project is working on a book of lessons learnt in rural transport and accessibility, and will produce a kit on IRAP in October, 1996.

Guidelines, case studies, and policy and planning documents on these projects are available in various institutions. In Kenya, information is available at ILO/ASIST or ITDG. Internationally, information is available at the ILO, World Bank, Institute of Higher Engineering in the Netherlands, IFRTD, and IT Transport.

3. National Level: policies and guidelines

In Kenya, several surveys have been conducted in different parts of the country, indicating a huge demand for appropriate rural transport. Most of these surveys were, however, not concerned with rural transport per se, and have therefore not resulted in an independent (rural) transport policy. With an increasing interest in rural transport, and growing awareness that "roads are not enough", this is likely to change in the near future.

Policies on rural transport in Kenya can be found in various policy documents dealing with rural roads, water and sanitation, health, and others. However, an integrated Rural Policy is absent. As a result, different Ministries address rural transport and development in different ways, without setting transport priorities and with limited cooperation.

This paper will highlight some main statements extracted from Government Documents.

Chapter 5 of Republic of Kenya, Development Plan 1994 - 1996 covers the topic: Spatial Dimensions of Development. The plan notes that the Government aims to spend a great deal of effort on assuring domestic resource "mobilisation". When addressing the transportation system the following is stated: "Transport considerably influences efficiency of services and education and cultural sector. Adequate supply of efficient, safe and affordable transport services is therefore critical to the increased productivity in all sectors of the economy and for sustainable development. Realising the importance of this sector, the Government has since independence given considerable attention to the development, expansion, and modernisation of road, rail, air, pipeline and marine transport facilities. Consequently, most of the strategic facilities are already in place. Further expansion of these infrastructure facilities is, however, constrained by scarcity of financial resources. Priority will therefore be given during this Plan period to the provision of funds for maintenance, rehabilitation and modernisation of existing facilities and to cost-effective utilisation of the facilities".

The decision to concentrate activities on maintenance, rehabilitation and facilities is commendable, and has been reflected in programmes such as "Roads 2000", which aim at further developing the road network. On the other hand, present government policies pay little attention to Non-Motorised Transport (which are the main means of transport in Kenya) and transport at village level.

The Republic of Kenya Sessional Paper No.1 of 1994 on Recovery and Sustainable Development to

the year 2010 addresses the problem of road maintenance. The paper also discusses funding mechanisms for the maintenance of roads. There is however no clear strategy for articulated.

The Republic of Kenya, Economic Reform for 1996-1998. This policy framework paper outlines the development strategy and key economic reform that the Government of Kenya plans to implement over the next three years (to December, 1998). In this paper, a framework of (i) objectives and policies, (ii) strategies and measures and (iii) timing for infrastructure, transport and communications is outlined. Annex 5 provides a summary of the policy framework.

Mr. D.S.O. Nalo in 1993 and 1994 wrote an Analyses of Government policies. The article discusses the different policy options available to maintain roads, current Government policies, problems of rural transport, and information on rural transport.

International policy guidelines

The majority of the information available on rural transport and development in sub-saharan Africa originates from Tanzania and Malawi. The pioneering work on the Makete Project in Tanzania generated a great deal of information on the achievements of the project, and on policy and implementation guidelines. These guidelines could be an useful reference when developing guidelines for Kenya.

Conclusion

Some policies on Rural Transport and Development have already been developed in Kenya. Limited attention has been given to Non-Motorised Transport and transport within villages. Existing policies are scattered. Since rural transport is crucial for Kenya's development, clear policies and guidelines that facilitate the planning and implementation of demand-driven rural transport interventions should be actively promoted.

4. National Level: Awareness Raising and Planning

Information on rural transport and development in Kenya is available at ITDG, ILO/ASIST, universities, and the World Bank Sub-Saharan Africa Transport Program (SSATP). See annexes for available information.

Intermediate Technology Development Group (ITDG)

ITDG is an international development agency with

offices in Kenya, Sri Lanka, Zimbabwe, Bangladesh, UK, Peru and Sudan. Its mission is to enable poor people in the South to develop and use technologies which gives them greater control over their own lives and which contribute to the long term sustainable development of their communities. Available publications on the subject of rural transport and development that exist in the ITDG are listed in Annex 3. Annex 4 show a list of ongoing and proposed rural/non motorised transport activities.

Advisory Support Information Services and Training for Labour-based Technology (ASIST)

ASIST is an ILO project started in 1990. Its mission is to provide Advisory Services, Information Services and Training to labour based infrastructure works, especially in the road sector.

Within its information services, the following is available:

1. Comprehensive technical enquiry services providing information on project design, project experience, productivity, techniques & equipment.
2. An active data base (ASIST DOC) of 6000 documents and reports on labour based-projects.
3. Publication of ASIST technical bulletin
4. A living data base (CONTACTS) of labour-based practitioners, organisations, specialists and key contacts in the region.
5. Extensive networking of labour-based projects.

Annex 2 provides a list of relevant publications

Sub-Saharan Africa Transport Program (SSATP - World Bank Program)

SSATP initiated several studies in Sub-Saharan Africa. The following publications are of relevance in this subject.

J. M. Lantran 1990. Developing Domestic Contractors for Road Maintenance in Africa

S. Carapetis and J. Riverson 1991. Intermediate Means of Transport in Sub-Saharan Africa

S. Carapetis and H. Levy 1991. The Road maintenance Initiative Volume 1: Reports on the Policy Seminars

T. Wolden 1991. The Road maintenance Initiative Volume 2: Reading and Case Studies

J. M. Lantran 1993. Managing Small Contracts

5. Local level: Planning and implementation

To execute a rural transport programme, project or activity, information is needed on the local transport situation, the demand for transport services, and on existing organisations to implement the activities. This requires targeted studies in Kenya, and strong contacts between Governments, NGOs and CBOs. ITDG, the ILO and the National Forum Group have already made some progress through pilot projects, but existing information remains very limited.

Material from other parts of the world can provide guidelines and ideas, to prevent duplication of efforts. The information, however, needs to be adapted to the Kenyan (and indeed local) environment.

ITDG, ASIST, KENDAT, and universities are sources of information within Kenya. Annex 5 recommends literature on Integrated Rural Accessibility Planning.

6. Conclusion

There is a considerable amount of material available on Rural Transport and Development on a global level.

On rural transport in Kenya, however, information is limited to a few policy statements, surveys, and reports on pilot projects. Information that is particularly lacking in Kenya includes:

- An elaborate Rural Transport Policy Document
- Guidelines on Rural Transport in Kenya (adapting international guidelines to national conditions)
- Case studies
- Information on the status of rural transport in Kenya

In addition to this lack of information, there is inadequate dissemination of information. Users of information on rural transport include policy makers at national and district level, donor organisations, NGOs and Community Based Organisations. Reaching out to the target group may be the real challenge ahead.

ANNEX 1

List of documents on rural transport/rural accessibility available at ILO POLDEV

Box 1

BIBLIOGRAPHY ON RURAL TRANSPORT

(* indicates that the document has been summarized)

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Box 2

Liz Eister (1994) "Makete Integrated Rural Transport Project - Bibliography", ILO.

Set of Construction Technical Programmes (CTPs) on Makete (see list of CTPs)

Box 3

CTPs on rural transport/rural accessibility (other than those on Makete)

Box 4-5-6-7

Reference List of the WID-Documents in the Rural Transport Library

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- b) "Women, water and firewood fetching: reducing the burden and raising the income", by Rose Okoyo Opiyo, Applied Nutrition Unit, University of Nairobi, Kenya, April 1995
- c) "Women's use of time - A review of existing literature", by R. Okoyo Opiyo and Jo Doran, March 1995
- d) "Women's use of time - Case study: Future Forest Project in Homa Bay and Migori Districts, Kenya" by Future Forest Project, June 1994
- e) "Women's use of time - Case study: Kwaho water supply study in Nyando Division, Kisumu Kenya", by R. Okoyo, Jo Doran and Kwaho Lake Region Office, March 1995

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Box 8

Reports produced under WB SSATP (list included)

Box 9

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Box 10

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PHILIPPINES

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Makers", Script plus set of overheads.

LAO P.D.R.

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MCTPC/UNDP/ILO - IRAP Project "Instructions
for preparing district accessibility profiles"

MCTPC/UNDP/ILO - IRAP Project "The
Accessibility Survey Instrument"

MCTPC/UNDP/ILO - IRAP Project "Modules for
T-I Training"

MCTPC/UNDP/ILO - IRAP Project "Manual for
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INDONESIA

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ANNEX 2

RURAL TRANSPORT DOCUMENTS AVAILABLE AT THE ASSIST INFORMATION SERVICES

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ANNEX 3

Ac	Num	Class	Lib	Type	Title
60621	F.0.3.0	KCC		itrep	Makete integrated rural transport project; Annex 1: Case studies
60151	F.0.3.0	KCC		report	Transportation strategies for human settlements in developing countries
60175	F.7.0.0	KCC		report	Guidelines for the planning of rural settlements and infrastructure: Road networks
60187	F.0.0.0	KCC		report	Makete integrated rural transport project: Vol 1 main report
60163	F.0.0.0	KCC		itrep	Transport research: An investigation into local level transport characteristics in Isman Division, Iringa, Tanzania 19 July - 1 August 1988
61083	F.0.3.0		mk	book	Rural transport services: a guide to their planning and implementation
61086	F.0.3.0		mk	book	Rural transport services: a guide to their planning and implementation
60159	F.0.3.0	KCC		report	District planning officers' workshop on integrated rural transport planning held in Bulongwa, Makete district, Tanzania 14-17 July 1989
60161	F.0.2.0	KCC		itrep	Rural transport programme: Low-cost wheel development in Zimbabwe: Finalization of funding for the training and dissemination programme, and preparation of the first training course and demand and workshop surveys
60152	F.0.3.0	KCC		biblio	Women and transport in developing countries: Bibliography summary
60170	F.0.3.0	KCC		report	Paths in rural transport: A study of Makete, Tanzania
61301	F.0.30		mk	report	Rural Roads in Sub-Saharan Africa: Lessons from Bank Experience
61226	F.0.3.0		mk	report	Memorandum of Understanding Between Pilot Integrated Rural Transport Project (PIRTP) and Small Holder Agriculture Credit Administration (SACA) (Ministry of Agriculture) on Credit Activities
61066	F.0.2.0		mk	report	A low-cost Wheel Manufacturing Technology for Small Workshops: ITDG Rural transport programme
60179	F.7.0.0	KCC		manual	Makete integrated rural transport project: Manual on improvements/maintenance of paths
60180	F.0.3.0	KCC		itrep	Rural travel and transport project: Case studies on intermediate means of transport: Working paper 3 intermediate means of transport, women and rural transport in Eastern Uganda
Ac	Num	Class	Lib	Type	Title

60164	F.0.3.0	KCC	report	New perspective on rural transport in developing countries
61300	F.0.3.0	KCC	report	Findings from Base-line Rural Transport Survey and Recommendations for Project Work Plan: Pilot Integrated Rural Transport Project, Malawi 3rd-27th Feb 1992
60203	F.0.3.0	KCC	itrep	Report on study of rural transport requirements
60155	F.0.3.0	KCC	report	Rural travel and transport project: Local-level rural transport in Sub-Saharan Africa: Synthesis of findings and conclusions from village-level travel and transport surveys and related case studies
60181	F.0.30	KCC	report	Makete integrated rural transport project: Study on the constraints to women's use of transport in Makete District
60160	F.0.3.0	KCC	report	Development of the capacity at provincial level for effective planning of project designed to improve rural accessibility planning report of first input by International consultant to the RTU
61269	F.1.2.0		mk report	Formulation of Monitoring System and Establishment of Base line for Cycle and Trailer Hire-Acquire Centres in Lindi and Mtwara Towns in Southern Tanzania (Main Report
60158	F.3.0.0	KCC	itrep	Use of donkeys as a means of transport for rural households in Limuru, Kenya
60156	F.0.3.0	KCC	report	Rural travel and transport project: Local-level rural transport in Sub-Saharan Africa
61088	F.7.0.0		mk book	Roads are not enough: new perspective on rural transport planning in developing countries
61108	F.0.3.0		mk report	Guidelines on Integrated Rural Transport and Accessibility Planning in Tanzania
60168	F.0.3.0	KCC		Conference International forum for rural transport and development: First regional meeting of experts in Anglophone Africa: Vol.1 proceedings of the meeting
61109	F.4.1.0		mk report	Reaching the poor: A preliminary assessment of the focus and impact of ITDG'S work in Kenya

ANNEX 4

ONGOING AND PROPOSED RURAL/NON MOTORISED TRANSPORT ACTIVITIES

ORGANIZATIONS	PROJECT NAME, LOCATION, AND DESCRIPTION
IT Kenya	<p>1. <i>Kathekani Rural Transport Project</i></p> <p>Addresses problems of inadequate transport and poor access to essential goods and services within Kathekani sublocation. Collaborators are: Local Administration, Village Development Committees, and NGO's. Focus is on developing a variety of low cost transport equipments, provide information, and demonstrated other possible and available transport options to the community.</p> <p>2. <i>Kajiado Donkey Project</i></p> <p>A study was undertaken in 1994 and recommendations made. Proposal for rural transport work was agreed on. The District Agricultural Extension staff received training on rural transport issues. Project started in August 1995. Focus on training donkeys to increase their efficient use by Maasai women in transporting larger volumes of water and other loads as firewood. Collaborators are: Agricultural Extension Officer, Women Groups, Local Administration, and IT-Kenya.</p> <p>3. <i>Pilot Donkey Loan Credit Scheme</i></p> <p>Project is located around Lake Victoria. It administers a loan scheme to women to acquire donkeys. It uses the already existing method of Merry Go Round as a mode of loan disbursement. Collaborators are: IT-Kenya, Future Forest an NGO, and local women group-Andu Women Group.</p> <p>4. <i>Riding Bicycles</i></p> <p>Tied to IT's Rural Stoves West Kenya (RSWK). Train women on how to ride bicycles so as to widen the scope of transport means available to women especially in transporting their products to the markets. Collaborators are: IT-Kenya, Women Groups, and the RSWK.</p> <p>5. <i>Participatory Study in Ndhiwa</i></p> <p>Examined issues related to accessibility and methods of transport in Ndhiwa division, around Lake Victoria. Study recommends options of using NMTS especially from the village to the roads for motorised transport. In addition, it recommends the improvements of footpaths to allow movement of bicycle trailer</p>

ORGANIZATIONS	PROJECT NAME, LOCATION, AND DESCRIPTION
Kenya Network for Draught Animal Technology (KENDAT)	<p>6. <i>Animal Traction Network for Eastern and Southern Africa.</i></p> <p>Project is located at the Dept. of Agricultural Engineering, University of Nairobi. Its major function is to collate and disseminate information on the harnessing, carry and carting of donkeys and other draught animals.</p>
Nairobi University	<p>7. <i>Studies in Non Motorised Transport in Kenya</i></p> <p>Concetrates on research activities in the field of non motorised transport in rural and in urban areas. Studies to recommend the appropriateness and planning needs for the NMTS. Research coverage is national. Collaborating institutions are: University of Nairobi, Local Government, and the World Bank.</p>
The National Forum Group & IT Kenya	<p>8. <i>National Workshop on Rural Transport and Development.</i></p> <p>Proposed to get all the actors on rural and non motorised transport together. Share existing information and experiences in the country with a view to identifying the information gaps. To strengthen the linkages between different actors and to jump start local networking on rural transport matters. Establish the extent of information on the subject known by policy makers and come up with areas that deserve renewed initiatives. The project coverage is the entire country. Proposed collaborators are: NFG, GOK, ILO, IFRTD, and IT Kenya.</p> <p>9. <i>Increasing and Improving Available Options of Non Motorised Transport in Western Kenya.</i></p> <p>To promote the use of NMTs and to manufacture NMT related transport implements (wheel manufacturing, mobile shops, bicycle trailers, pushcarts, wheelbarrows, and donkey carts). Market these rural transport products in Western Kenya. Project targets both transport providers and users, and the jua kali artisans as manufacturers. It will use Kisumu as the focal point but reach out to the entire Western Kenya. Major collaborators are: ILO's FIT, POL/DEV, and ASSIST, IT Kenya, National Forum Group, and the GOK.</p>

ANNEX 5

Integrated Rural Accessibility Planning (IRAP)

Recommended Literature

I. Integrated Rural Accessibility Planning (IRAP)

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IV. ILO promotional materials

MIRTP/ILO (1993) *Footpath Manual Makete*

(1994) Rural Travel and Transport: Makete, Tanzania - a case study', Video, ILO.

(1996) Integrated Rural Accessibility Planning, Information Kit, ILO.

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ANNEX 6

OBJECTIVES AND POLICIES	STRATEGIES AND MEASURES	TIMING
Infrastructure, transport and communications		
Roads:		
Arrest deterioration of the road network	1. Adopt strategic plan for the road sector that includes defining activities to be financed by the road maintenance levy to address the maintenance, rehabilitation and upgrading of roads, including procedures for transparent management of the road fund and mechanism to ensure that all the levy funds are used effectively for road maintenance.	June 1996
	2. Provide budgetary allocations for at least 50 percent of funds required for routine and periodic road maintenance.	1996/97
	3. Progressively raise budgetary allocation to finance full routine and periodic road maintenance by 2000.	1996-2000
Railways:		
Restructure Kenya Railways to improve its efficiency	1. Present policy paper on restructuring KR for Government approval.	Feb. 1996
	2. Agree to performance contract between GOK and KR.	May 1996
	3. Separate service accounts and establish passenger service as an autonomous business.	March 1996
	4. Bring Gulf Marine services to the point of sale.	June 1996
	5. KR to contract out full maintenance of locomotives to private contractors.	August 1996
	6. KR to reduce staff level to 14,500.	Dec. 1996
Ports:		
Improve the efficiency of Kenya Ports Authority	1. KPA to complete renegotiation of the two 10 year equipment maintenance contracts, limiting duration and establishing performance guarantees.	March 1996
	2. Sign contract for external management and operation of the container terminal.	March 1996
	3. Complete performance contract between GOK and KPA.	April 1996
Telecommunications:		
The extension and efficient delivery of telecommunications services to remove constraint to more rapid economic growth and the long term development of Kenya.	1. Issue of telecommunications sector policy statement and privatisation programme.	early in 1996
	2. Divest non-essential services (workshops, buildings).	Sept. 1996
	3. Present legislation enabling the separation of KPTC into three separate entities to Parliament.	March 1996
OBJECTIVES AND POLICIES	STRATEGIES AND MEASURES	TIMING

	4. Establish three separate entities for posts, telecommunications and a regulatory authority.	Dec. 1996
	5. Sale to outside investors at least 30 percent of the new telecommunications after separation.	March 1996
	6. Liberalise telecommunications services beginning with pay phones and VSAT terminals for private operators.	1995-1996
Water:		
Improve management water resources.	1. Prepare an operational plan and progressively implement declared government policy of charging urban consumers a water tariff to cover capital amortization and O & M costs while setting rural tariffs to cover only O & M.	1996-1998
	2. Present to Parliament amendments to Water Act to address concerns regarding national water resources management.	Dec. 1996
Energy:		
Implementation of a sound policy framework and an appropriate investment program to address the increasingly serious shortfalls in power supply.	1. Invite bids for investment by independent private producers in power development.	March 1996
	2. Present appropriate legislation for separation of regulatory and commercial functions to parliament.	June 1996
	3. Complete action plan for reorganization of the power sector, including separation of accounts of power sector companies.	June 1996
	4. Commence implementation of agreed performance contracts for all power sector parastatals.	Sept. 1996
	5. Adjust electricity tariffs to 75 percent of LMRC.	June 1996
	6. Agree with IDA on timing of adjustments of electricity tariffs to cover LMRC.	Oct. 1996
	7. Remove the temporary import tariff on petroleum products.	Oct. 1996
Human Resource Development		
Population:		
Further reduction in population growth rates via continued emphasis on family planning service delivery to achieve higher contraceptive use.	1. Adopt plan for restructuring NCPD into a policy-making, coordinating and advisory entity.	June 1996
Health:		
Devote relatively more of the Ministry of Health budget to preventive and primary services; increase efficiency and financial autonomy of Kenyatta National Hospital (KNH), and encourage facility-level management and decentralization.	1. Limit the share of the MOH budget devoted to KNH to 12% (Subject to adequate progress being made in reform and rehabilitation of other facilities serving the Nairobi area).	1996/97
	2. Give full authority to KNH Board to determine charges at KNH, with the exception of TB, AIDs patients and children under 5.	June 1996
OBJECTIVES AND POLICIES	STRATEGIES AND MEASURES	TIMING
	3. Increase user charge collections to about 16%	1997/98

	of MOH budget in 1996/97 and 18% in 1997/98 (with 25% of this going to primary and preventive health care).	
Implementation of major reform measures in the health sector as indicated in the Health Policy Framework.	4. Decentralise financial and administrative authority to districts, beginning with a phased approach.	1996
	5. Complete detailed audits of the NHIF for fiscal years from 1991/92 through 1994/95.	Dec. 1996
	6. Finalise and begin implementation of action plan to shift part of the financial burden of curative care from the ministry of Health budget to insurance schemes, including the National Hospital Insurance Fund (NHIF) and private providers.	Dec. 1996
	7. Present legislation to Parliament amending the NHIF Act to allow coverage of the self-employed and workers in the Jua Kali sector.	1996/97
	8. Finalise and begin implementation of action plan to consolidate and strengthen key health management information systems to support the policy making role of the Ministry of Health in budgeting, planning and management functions in the districts.	July 1996
AIDS:	Finalise Policy Paper on AIDS.	June 1996
Nutrition:	1. Finalise and begin implementing of an action plan for (i) nutritional interventions with a view to shifting budget financing to more cost effective programmes targeted at infants, pre-school children, and pregnant and disadvantaged women, with selected interventions for older children in poor districts, the landless and ASAL areas; and (ii) community financing of the school feeding programme.	Dec. 1996
Reduction in infant mortality, and improvement in nutritional status of children as well as adult women.		

PROVISION OF RURAL ROADS TRANSPORT INFRASTRUCTURE IN KENYA

by

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1. THE PERSPECTIVE OF THE RURAL AREAS

The rural sector is an extremely important one in Kenya because over 80% of the population lives in these areas. Unfortunately, the rural areas are also invariably less advantaged than the urban areas. In general, rural areas suffer from much lower standard of living and lower per capita incomes, limited access to modern technology and facilities.

Agriculture is the mainstay of the rural economy and a large majority of the rural people live on small scale farms where they grow subsistence crops. Additionally, they may grow one or two more cash crops and keep a few herds of cattle. In the drier range areas, pastoralism is the main occupation. The most important social services that development aspires to provide to the rural populace are education, health services, administrative and community development services. These are important and fundamental services and can be considered basic and instrumental to change and development. However, such services suffer from insufficient numbers, lack of delivery points, inadequate flow of information and unsatisfactory pattern of manpower development. In the field of support infrastructure for rural areas, the most important ones are electricity, the provision of water for human and animal consumption and the construction of transport and telecommunications facilities. While the importance of providing these support services has been widely recognised, the translation of this wish into reality remains largely unaccomplished.

Roads provide the major transport mode in the rural areas and affords a degree of linkage and connectivity not possible with other modes. The prevailing situation in many rural areas is that road coverage is far from the desirable density. Roads are few and far apart and a number of homesteads are many kilometres away from the nearest road. Of more importance, however, is the condition of the existing roads many of which are no more than tracks that are hardly motorable in the dry season but completely impassable in the wet season, except perhaps by four-wheel drive vehicles. Drainage is inadequate or absent altogether and vehicle operating costs are high and un-economic.

In order to bring into proper perspective the importance of transport and rural development in Kenya, the experience of the Ministry of Public Works and Housing is reviewed with special reference to three past and present roads improvement programmes directly oriented to rural development. These include the *Rural Access Roads Programme (RARP)*, the *Minor Roads Programme (MRP)*, and newly inaugurated *Roads 2000 strategy*.

2. CONSIDERATION FOR RURAL ROADS INFRASTRUCTURE

The need for serious focus on rural roads transport infrastructure investment in Kenya grew out of a common concern by the Government and other stakeholders over the general direction of Kenya's development policy in the late 1960s. This concern focused attention on Kenya's rapid post-independence population growth and its consequences on future employment opportunities and the levels of living standards. Since the agricultural sector was the major economic base, it was a general consensus that Kenya's second decade of development should seek greater efficiency in resource utilization through placing greater emphasis on the development of this sector.

Based on these policy decisions, the Government in 1967 formulated a Special Rural Development Programme (SRDP). The SRDP was explicitly designed to test a number of alternative intervention strategies in selected districts representing a cross-section of the country's rural population. One outcome of the programme was a decision to decentralise development planning as much as possible to the district level to permit flexibility in combining programme elements to meet local needs and aspirations. At the same time it was realised that Kenya would benefit from a re-orientation of its transport investment policy towards the improvement of lower standard roads using labour based methods. The urgency for firm action was underscored by a Government decision in 1970 that the then Ministry of Works should assume immediate responsibility for rural roads that were formerly under the County Councils. Due to various reasons most of these roads had received little or no maintenance, and many had

virtually disappeared. The Ministry of Works did not have adequate resources to address the vast backlog of rehabilitating work on these rural roads nor to implement a subsequent maintenance system on the whole network. It became clear that a conventional approach would not be sufficient to meet the country's pressing need for improved communication in the rural areas.

Despite the political pressure to find some way to deal with the provision of rural transport infrastructure and also the growing unemployment problem, there was great reluctance to adopt labour-based methods for rural roads improvement. Indeed this reluctance was reinforced by experience that indicated that labour-based methods would be more expensive than capital-based methods in the prevailing Kenya situation. There were however other experiences that indicated that labour-based roads improvement could be still cheaper.

Faced with continued political, economic and social pressures, a compromise was reached. The Government formulated two programmes. One, the Graveling, Bridging and Culverting Programme (GBCP), which was capital or equipment based and was designed to meet the most pressing needs for the improvement of the classified secondary roads serving the rural areas. Two, the Rural Access Roads Programme (RARP) which was labour-based, was intended to improve unclassified roads that provided access to rural communities in areas previously unserved by roads. In order to effectively implement the two programmes, a Special Projects Branch was established within the Ministry of Public Works. The Rural Access Roads Programme, penetrated the end points of the rural areas and in effect had the most impact of the two programmes. It has had two transitions and these are the subject of this paper.

3. RURAL ACCESS ROADS PROGRAMME

Objectives of the Programme

During the formulation of the Rural Access Programme, the Government had the following broad objectives:

- (a) *Provide all-weather access between high potential farming areas and market centres;*
- (b) *Foster a greater economic, geographical and social integration between the rural farm areas and corresponding urban and rural centres;*
- (c) *Encourage shift in land use from subsistence towards cash generating crop and livestock activities;*
- (d) *Provide meaningful employment as a result of*

improved economic activities and during the undertaking of the works;

- (e) *Improve the quality of rural life and support the Government's growth centres policy; and*
- (f) *Reduce rural-urban migration.*

Scope of the Programme

The scope of the programme was an ambitious one and included the following:

- (a) *The programme was to cover 23 districts. The selection of the districts was based on agricultural potential and population density;*
- (b) *The programme was to be for a period of five years, commencing 1975. The programme took longer because of the disparities in commencement in the districts.*
- (c) *A total investment of Ksh.550 million was anticipated*
- (d) *A total of 14000km of roads were to be improved at the rate of 120 to 125km per year per district; and*
- (e) *A total of 154,000 person years of casual labour and 13,600 persons years of supervisory and skilled labour was to be generated.*

To implement the programme on such scale, the Government sought and received appreciable assistance, both financial and technical from external donors. The programme commenced in 1974 on a pilot basis in four geographically representative districts. Based on the results of the pilot projects the project spread to other districts.

Organisation of the Programme

The programme was considered as a district specific project and most of the implementation and management decisions were made at the district level. The programme was supported by the Programme Coordinator at the Headquarters for the overall planning, programming, co-ordination, implementation and monitoring of the programme, and a Regional co-ordinator covering one or more provinces. At the District level the Programme was managed by a Rural Access Roads Engineer supported by some supervisory staff. Physical works were undertaken by one or two construction units in a district and each unit managed two road sites at a time.

One very important feature that was established was the recruitment of casual workers. Once the normal

publicity had been done, all those who turned up participated in a balloting exercise, whereby the exact number of required people was indicated by a yes, and the rest by a no. Whoever picked a yes was automatically employed.

Training

During these initial stages it was realised that training of personnel to manage the programme was necessary. The Government initiated a labour-based road construction and maintenance training school in Kisii, the Kisii Training School. All cadres of personnel were expected to be trained in various disciplines. The personnel included site construction, gravelling, and maintenance supervisors and overseers, plant operators and drivers, clerical officers, engineers and instructors. The school has grown to an extent that it is now even conducting courses for international participants.

Selection of Target Rural Roads

The following broad guidelines were formulated to select candidate roads:

- (a) *The roads were to be the unclassified tracks that provide access to areas of undeveloped or under-developed agriculture potential or areas where there was a possibility of change from subsistence farming to cash generating agriculture and other activities;*
- (b) *The roads were to serve areas where other development activities were ongoing or planned so as to supplement these other efforts;*
- (c) *The roads were to link to existing classified roads that were under adequate maintenance, in order to create an all-weather future road network;*
- (d) *Roads were to be limited to a maximum of 10km so as to spread the programme over wide areas; and*
- (e) *For technical considerations of using labour-based methods, the roads selected were not expected to pass over stretches of flood plain, hills, rocks and should not also require major drainage structures.*

The process of selecting the initial list of roads were vested with the people in the programme areas through the District Development Committees. It was anticipated that this would trickle down to the local level, involving the local communities as much as possible. Participation of the communities was expected to give the programme the support it required in terms of the availability of labour for both

construction and maintenance. The local population was to see the roads as their roads. The final list of roads to be improved was obtained after an evaluation of the initial list of roads.

Physical Accomplishments

By 1985, a total of 8000km of rural access roads had been improved to earth standard and over 7500km had been gravelled. The roads were constructed mainly following the existing tracks and had a standard width of 4.5 metres of which 4.0 metres was surfaced with 125cm of murrum/gravel.

As roads were completed they were put under maintenance. This was organised by employing a person who took part in the construction of the road to maintain about 1.5km of the road. The person was expected to undertake the various road maintenance activities 3 days a week. This enabled the person to do other work on the farm or elsewhere.

Construction and Other Costs

At the formulation of the programme it was estimated that the average construction cost of one kilometre of rural access road would be Ksh.50,000. At the initial stages the cost per kilometre was in this range. However, by 1985, the cost per kilometre had escalated to Ksh.150,000. This was due to increased costs in the construction inputs including labour wages which increased from Ksh.7 per day at the commencement of the programme to Ksh.51 per day in 1985. One item that came out very clearly from the costs of construction was that over 50 per cent of the expenditures were related to the permanent staff wages and casual labour wages, thereby confirming that the programme was labour based. Other items that followed in costs included equipment, transport and construction materials.

Impact Studies

As the programme was being implemented, Government and donors became interested in carrying out selected studies to ascertain the specific impact of the programme, particularly its impact on the local population. Some of these studies included:

- (a) *Traffic Survey;*
- (b) *Agricultural and Livestock development survey;*
- (c) *Women and Family Topical Study;*
- (d) *(d)Migration and family patterns Topical Study;*
- (e) *(e)Crop pattern study; and*
- (f) *(f)Land tenure topical study.*

Lessons Learnt From The Implementation of the Programme

Government and donors were able to learn a lot from the impact studies and from general observations. These lessons included:

- (a) *Labour-based methods of construction and maintenance are technically feasible and financially cost effective;*
- (b) *Local involvement at all levels will facilitate execution of road projects and strengthen local capacity for development planning in the future not only for road projects but other activities;*
- (c) *Labour-intensive road construction succeeded in employing low-income residents, over half of whom earned wages for the first time;*
- (d) *Provision of roads can bring significant economic benefits including increased production of sales of food crops and other farm produce, and have a positive impact on income distribution and quality of life; This had a further effect of reducing the gap between upper and lower income groups;*
- (e) *A well prepared training programme can have high pay off in developing viable self sustaining institutions;*
- (f) *Women could undertake the same activities as men including completion of set targets;*
- (g) *To maximize on construction productivity adequate tools, fuel and other stores had to be procured and supplied to the field units on time;*
- (h) *To execute more equipment-based tasks such as gravelling, small local contractors could be used more effectively than force account;*
- (i) *Technical and financial management should be decentralized to the lowest level possible;*
- (j) *Preparation of workplans and progress reports facilitated the effective monitoring and evaluation of the programme;*
- (k) *Local people who have worked in the labour-based road construction were easier to adopt for length-person system of maintenance;*
- (l) *Re-mobilization of local people to carry out emergency or other works was found to be very easy as the system was already in place. This indicated that it was possible to sustain the project; and*
- (m) *The constructed rural access roads were the only means of access to the area and there was generally an increase in traffic. During the*

rainy season some of them used alternative roads. In some instances the roads were isolated in that they were not part of a continuous all-weather road system, and their utilization was not fully realized.

4. MINOR ROADS PROGRAMME

Introduction

This programme was the successor to the Rural Access Roads Programme and is geared towards the improvement of the lower classified roads using labour-based methods. Local people where the roads are located are employed for the construction and maintenance of the roads, just as in the case of the Rural Access Roads Programme.

The programme was begun in 1986 due to two reasons. First, the Rural Access Roads Programme improved the unclassified tracks and increased the road network under the Ministry of Public Works and Housing. However there were no corresponding financial resources to maintain the roads. Secondly, the roads improved under the Rural Access Roads Programme mainly connected to the lower category of roads in the classified network. These roads were not in good condition. The rural access roads were in good condition and isolated and their accessibility could not be utilized fully.

Status of Implementation

The Minor Roads Programme is being implemented in all the districts where Rural Access Roads had been initiated and in four additional districts.

All management and other technical aspects for the Minor Roads Programme were similar to those of the Rural Access Roads Programme. However the target for the Minor Roads Programme was set at 4500km and the design standard was raised to 5.4 metres carriage with a gravelled width of 5.0 metres. By June 1995 a total of 3304km of Minor Roads had been improved under the programme.

The funding of the programme during the 1995/96 financial year comprises of Ksh.570 million which was spent for improving 201.5km, gravelling 281km, regravelling 277km and maintaining 11,670km of roads. The programme employs about 12,000 casual labourers per month, in all the implementing districts.

The donors who have participated in the programme include SIDA, CIDA, Netherlands, DANIDA, Swiss Development Cooperation (SDC) and NORAD. the Government of Kenya is also contributing tremendously to the funding of the programme. For example for the total Ksh.570 million for 1995/96,

Government of Kenya contributed Ksh.265 million. During the 1996/97 financial year, Ksh.538 million has been allocated of which Ksh.63 million will be obtained from Road Maintenance Fuel Levy Fund.

The implementation of the programme has been sensitive to women's participation, although the ballot system ensured that every person was given a chance to participate. However, during the selection for maintenance workers there was a possibility of bias. In the early stages, a study was carried out to look at ways to increase women participation and a plan of action prepared. With time, participation increased from 15% in 1989/90 to 22% in 1992/93 financial year. During the 1995/96 f.y. the women participation stood at 28%.

5. ROADS 2000 STRATEGY

Introduction

Roads 2000 is one of the major initiatives of the MoPW&H's corporate Roads Policy under the Road Maintenance Initiative (RMI). It aims at bringing about the much needed, rapid improvement in the standard of road maintenance throughout Kenya. It differs from the project-oriented approach used with limited success in the past. Although the level of serviceability being sought is lower, this standard is to be attained economically and uniformly across the whole classified national network. Moreover, the methods used are to be labour-based (attested under the Rural Access Roads Programme and the Minor Roads Programme). The plant and equipment employed will, as far as is justified, be of no more than 'intermediate-technology'. They will be relatively easy to maintain and repair, locally manufactured items. The approach, which does have other important components some linked to other Government initiatives, was developed from the Minor Roads Programme via a two-District Pilot scheme begun in 1993 and is still running. The strategy is at the implementation stage and management of the implementation is currently a major responsibility of the Unpaved Roads Branch of the Roads Department.

Approach of Strategy

The following are the main components of the strategy:

- (a) *Programme to include unpaved and paved roads.*
- (b) *Practical rehabilitation to bring roads to maintainable standard including spot improvement*
- (c) *Routine maintenance will be established on the*

majority of classified roads using lengthperson system.

- (d) *High trafficked unpaved roads will be graded using towed graders.*
- (e) *Mobile tractor units will be developed for maintenance of roads in areas of sparse population.*
- (f) *Operating methods for local small scale contractors will be developed for rehabilitation and maintenance activities.*
- (g) *The new technical approaches will be supported by Government initiatives on manpower motivation, rationalisation and development, funding and management.*

Progress

The original two pilot-project districts have been subdivided into seven. The pilot-project introduced the new maintenance procedures into defined zones into the two districts, which now offer a substantially better level of road service.

978km are under effective management in maintenance zones in the seven new districts. Routine maintenance on the network is effected using about 645 length persons, with an average section length of 1.66km per person.

A total labour force of 945 was engaged to support various activities in the maintenance zones. These activities included preparation, spot improvement, road structures and camp works.

The Kisii Training Centre is training staff from the pilot districts and also from other districts. The courses covered include roadworks, plant and equipment, stores and accounts keeping.

The strategy is to be extended to other districts with effect from this financial year 1996/97.

Further Development of the Strategy

Successful progressive implementation of the policy will be dependent primarily on funding levels. The various essential components of the Roads 2000 strategy still largely in a state of early development and now being addressed by the MoPW&H and the Roads Department, will also influence implementation.

These, in no particular order, are:

- Manpower rationalisation
- Targeted management training of headquarters

- and district personnel.
- Management reporting system (MRS etc)
- Data management systems (HMMS)
- The private sector contracting industry (road maintenance, labour-only and lease-hire)
- Plant, equipment and vehicle management
- Equipment ownership (state hire-pool or private sector)
- The local specialised manufacturing industry (tractors, towed graders, compactors, hand tools)
- Pavement management systems (standard, intervention levels, design options etc.)
- Bridge maintenance management
- Bituminous paved road maintenance

- The choice of mechanical equipment for Roads 2000
- Tailored maintenance manuals and specifications

6. SUMMARY AND POINTS FOR FUTURE CONSIDERATION

The Government has made great efforts in the provision of rural roads using labour-based programmes in order to raise the living standards of the people in the rural areas. Through the various programmes, it has created a high degree of local participation and involvement in the identification, planning and execution of rural road projects. In fact, the project has gone to the extent of the popular saying that "Don't give them fish but show them how to fish". In some areas the local people are utilising their skills to construct their access roads through their own initiatives. This is a great achievement.

Whilst the roads have created appreciable accessibility, their maximum utilization may not have been realized due to the limited number of vehicles on some of the roads. An improved road is better for all users including pedestrians, cyclists and users of other forms of non-motorised transport. But the design of the road infrastructure needs to be appropriate to the majority of users.

For example, if the access is only for pedestrians, then its design should be for pedestrians only. In addition where there is a heavy usage of a road by both motorized and non-motorized traffic, there would be a need to separate the facilities to minimize accidental conflicts. This to some extent is being addressed by the Government, particularly in urban areas under the ongoing Urban Transport Project.

Needless to say, as population and the economy of the country grow, the demand for road infrastructure will continue and will be a big challenge to all.

HUMAN AND INSTITUTIONAL CAPACITY BUILDING IN RURAL TRANSPORT PLANNING

by

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ABSTRACT

There is evidence pointing to the existence of a significant off-road transport burden undertaken by rural households. This area has not received much attention from rural transport planners (notably the government) in the past. Budgetary constraints and the realisation that the roads based concept of transport planning has not catered for the needs of rural communities has forced planners to shift attention to finding options for addressing rural transport problems. Non-motorized transport, bicycle, animal and human based, are the most feasible options though little is documented about them.

The new concept on rural transport planning proposes the use of the "household" as the unit of analysis in the identification and prioritization of community mobility and access needs. Decentralization of both the decision making process and services is seen as an appropriate step in empowering interested parties to collectively play an active role in rural transport planning and in bringing services closer to those who need them to reduce the need to travel. However, this requires a coordination effort of all the parties involved and a definition of the roles of each party.

This paper proposes an integrated approach in the form of a network to address rural transport needs, identifies important players or stakeholders namely the Kenyan government, the donor community, research institutions (Universities, KARI etc.), RTDU's, FTC's, Jua kali artisans and the community members, and highlights their roles within the network. A network is seen as an effective way of building the necessary human and institutional capacity to hasten the process of rural transport planning.

1. INTRODUCTION

Conventional transport planning has often overlooked the importance of transport needs at the farm and household level in rural areas. Mostly, the focus is on provision of roads for motorized vehicles. Although roads connecting rural centres to larger markets exist, they have little impact on

the daily transport needs of most rural households. Most rural travel therefore, still takes place "off-road" and usually on foot (Dawson et al, 1993).

The new approach in rural transport planning recognises this fact and calls for the redefinition of rural transport to encompass the movement of rural people and their goods to meet their domestic, economic and social needs, by any means, along paths, tracks and roads (Barwell, et al., 1988). It proposes the use of the "household" (and by extension the community) as the unit of analysis in rural transport analysis. Emphasis on rural transport research and planning should focus on transport needs of individual households and the community as a whole. The participation of the people in the rural areas in this process is vital to ensure that their needs are understood and appropriate solutions sought.

The idea of Integrated Rural Transport Planning was developed in Tanzania and is under further development and refinement based on Integrated Rural Accessibility Transport Projects in Philippines, Bangladesh and Malawi.

Although planning for rural mobility and accessibility cuts across many sectors, it seems, in most cases, the organizations involved work in isolation from one another. This approach results in conflict and duplication of effort as each group tries to push their development agenda. Participatory methods involving all stake holders stand a better chance of success. Examples of successful on-farm participatory approaches have been registered in Zambia and Tanzania where farmers were actively involved in selection and evaluation of animal draught power technologies (KENDAT 1996) The Kenya Network for Draught Animal Technology (KENDAT) has been using the same approach working in collaboration with a team of other organizations with diverse interests.

2. BACKGROUND INFORMATION

The predominant means of travel in rural communities is on foot. Head and back loading are the most common means of transporting commodities on foot (Anderson et al, 1992).

Studies carried in Ghana and Makete in Tanzania show that over three-quarters of the time and effort spent on transport are devoted to movements around the household and fields (Anderson et al, 1992). In Kenya bicycles are common in certain communities and the use of bicycle trailers is on the increase in some. Other forms of rural transport are animal based, principally the donkey, the Ox and to a small extent the camel. Ownership of motorized transport is extremely rare in rural communities. The vehicles used are usually old rejects from urban areas which are poorly maintained, dangerous and expensive to run. Where lorries and trucks exist, they are mostly used by traders and crop marketing boards rather than as a means of transport for rural people. Moreover, motorised transport even where well established can be expensive due to high cost of motor vehicles and fuel. Bad road conditions due to poor construction and maintenance (because of budgetary constraints) have caused a further increase in the cost of transport.

Budgetary constraints have shifted the focus on rural infrastructure from expansion to rehabilitation and maintenance of the existing infrastructure. For this exercise to be more effective, the government should encourage the creation of an institutional capacity involving all stake holders to foresee the process of rehabilitation and maintenance. The government's role should be restricted to that of fund raiser and an observer.

Animal based transport is increasingly being recognised as a highly feasible form of transport in rural areas. It has been documented to be a major feature of traditional economics in many parts of Asia, South America and, until recently, Europe and North America. Elsewhere in Africa, traditional use of animals for transport is rare. In Kenya and Tanzania only the Maasai tribes traditionally use donkeys as pack animals. The total number of carts in Africa is estimated to be around 700,000. Out of every ten farmers who use draft animals for agriculture there is only one who owns a cart (Dawson and Barwell, 1993). These figures suggest underutilisation of animal power for transport in Africa.

Besides overemphasis on motorised transport and the failure to pin down the real transport needs of rural people, other factors contribute to the poor state of rural transport. Among the more important factors are rural poverty, poor rural infrastructure (inter community access roads), high cost of good rural transport technologies, and lack of appropriate and good designs as is the case with carts among other equipment. There is also lack of adequate support services.

The alleviation of rural transport needs now, more than ever, calls for concerted effort of the government, researchers, Institutions, NGOs and individuals through collaborative projects and the establishment of true networking activities.

3. THE KENDAT EXPERIENCE

The Kenya Network for Draught Animal Technology (KENDAT) is a nonprofit, non governmental networking organization consisting of a multi-disciplinary team of engineers, veterinarians, social workers, farmers, Jua Kali artisans and other industrialists. Its main objective is to assist the government in providing technical advice and disseminating information about existing and new simple but effective Draught Animal Technologies (DATs). KENDAT also puts much emphasis on networking to facilitate effective communication, exchange of experiences, mutual cooperation among concerned parties and to accommodate farmers views and inputs in technological developments of the future.

Since its formation KENDAT has undertaken extensive field trips to DAT utilizing areas with the aim of identifying the real problems experienced by the farmers. Two workshops were organised last year, one at national level in March and the other at international level in December. The theme of the workshops was meeting the challenges to animal draught power. They had the objective of identifying the challenges in DAT use and how to meet these challenges. Challenges to animal powered transport was among the issues discussed in the two workshops.

It became clear from the deliberations of these workshops that the top-down approach in trying to solve rural community problems had failed. Farmer involvement in identifying and solving their own problems was emphasised as sure way of ensuring fair chance of success. Examples from Zambia (Palabana), Tanzania (Mbeya and Tanga) and to a small extent Kenya (DAREP, Embu) shows that problems can be solved where farmers were involved in on-farm participatory technology assessment and or extension.

From these experiences, KENDAT now has a deliberate policy of borrowing what the farmer does and trying to make it better. The idea is first to identify with farmers and try to look at their problems through their own eyes and see how traditional knowledge can be intermarried with modern science.

KENDAT also realised that it could not work in isolation from others. The dependency on traditional practices and the community based

nature of DAT made it clear that KENDAT would achieve better results working in collaboration with other interested parties be they individuals, organizations, institutions or the government. This not only avoids duplication of efforts but ensures that problems and solutions benefit from a multi-disciplinary approach. Based on the networking philosophy KENDAT is now working closely with many organizations among them manufacturers, research institutes, NGOs, farmers and farmer organizations.

To further strengthen the capacity to deal with farmers problems, KENDAT wishes to carry out an appraisal of the status of draught animal technology in the country. During the appraisal many organizations will have an opportunity to present their work programmes and discuss ways of intensifying their impact through the networking effort. They will be invited to become part of an envisaged national and regional group of individuals and organisations planning and programming for collaborative work. This group will be officially launched at a two-day national workshop.

KENDAT believes this to be a good approach as it ensures the participation of all the concerned parties. The same approach can be applied in solving rural transport issues.

4. NETWORKING IS THE WAY FORWARD

Networking provides a forum for exchange of ideas and offers an integrated approach to problem solving. Capacity building can only be effective through well-coordinated efforts of key players or stakeholders with clearly defined aims and objectives. We propose a network consisting of policy makers (GOK and donors), facilitators (research institutions, NGO's, RTDU's and FTC's), manufacturers (Jua Kali artisans and other large scale manufacturers) and community representatives appointed by the community members working under the umbrella of the National Forum Group on rural transport (NFG).

5. STAKEHOLDERS AND THEIR ROLE IN CAPACITY BUILDING

The role of the stakeholders in the network will be as follows.

The central government

POLICY ISSUES

Central governments have several important roles to play in the support of rural transport planning. Among these are setting broad policy initiatives,

providing resources to support the development of rural transport initiatives and the allocation and uses of these resources. Unfortunately, Kenya's government policy on rural transport as outlined in both the Sessional papers of 1994 and the current development plan gives only a passing mention of rural transport. It mostly deals with rural infrastructure and only a small paragraph is devoted to non-motorized transport.

The current approach to rural transport analysis has identified policy areas that could enhance the mobility (especially off road mobility) of rural communities. It is hoped that the 8th development plan now being drafted will consider the new concepts and put in place broad and well-defined policies extending beyond rural infrastructure. Such policies should be location specific, to respond more closely to specific physical, cultural and socio-economic characteristics and needs of the target areas.

Policy should not be limited to measures to enhance mobility. It should also encompass measures to reduce the need for travel and transport primarily by locating facilities and services closer to the communities that need access to them. This makes rural transport planning a multi-sector phenomenon that requires participation of various sectors. For example the location of a health facility would involve the ministries of health, culture and social services and transport. To increase the likelihood of such coordination, it is appropriate that the central governments make improved rural access a priority national policy.

Decentralization

Decentralization of decision making and services can have beneficial effects if carried out appropriately. The central government should relinquish the role of decision maker to that of adviser and observer and allow communities and local institutions to take the initiative. For example, in Gurage, Ethiopia, the government allowed the Gurage kinship group to organise to undertake new investments in roads. By legitimising this alternative, non-governmental institutional arrangement both the members of the clan and the country as a whole benefitted (Anonymous, 1996).

Public facilities should also be decentralized to the lowest possible level to reduce the need to travel long distances and to ensure services are provided to a defined catchment in the village (Njenga, 1994) Tanzania's villagisation was an attempt in this direction.

Decentralization of facilities and services in itself is not enough. Creation of facilities must accompany

measures to improve mobility. Decentralization should address all related issues such as the promotion of appropriate means of transport, construction and maintenance of tracks/paths through self help. This calls for coordinated effort among key players. For example, the supply of intermediate means of transport technologies calls for the coordination of the organizations dealing with rural technology development (eg. RTDU, KENDAT etc.) and institutions (such as Kenya Agricultural Research Institute (KARI), university departments among others) that deal with development and promotion of IMT's. Programmes that support local manufacture must also be supported.

Research and development

The government has the capacity through the various research institutions to carry out relevant research on rural transport planning. Current research undertaken by the Ministry of Transport is all on roads. Research priorities should now shift to be in line with the current thinking in rural transport analysis. It should be the responsibility of the government to recruit and train the required manpower and provide the necessary funding for research activities in rural transport analysis.

The government should liaise with non-governmental bodies interested in carrying out appraisals on rural transport with communities to:

- Identify the constraints of rural transport at different levels in different communities.
- Organise rural transport workshops and facilitate in them.
- Implement, monitor progress and evaluate projects to assess the impact of recommendations given at the workshops.
- Carry out research on in areas where information is lacking and access research findings of sister institutions through networking.
- Share research and quality control findings with manufacturers (who should have established a forum to determine the constraints faced in manufacture of implements).
- Organise and facilitate training of trainers (TOT), farmers training and any other training exercises deemed necessarily by the network.

RTDU's and FTC's

The Rural Technology Development Units (RTDU) and Farmer Training Centres (FTC) were created to offer technological support services to the smallholder sector. They developed prototypes of appropriate technologies and offered training to farmers. These centres have long become graveyards of improved simple technologies. These

technologies never reached the farmers due to discontinuity in extension, local manufacture and promotional work. Nevertheless, the centres still have the capacity (as they still retain basic facilities) to act as focal points of rural transport technology development and training of trainers, farmers and rural communities. To achieve their potential they need to refocus their mode of operation to incorporate the concept of a participatory, community based approach (away from centre-demonstration or training-and-visits mode of operation).

Manufacturers

Large-scale commercial manufacturers are well equipped to produce and supply certain equipment used in rural transport (eg. tyres, axles, wheelbarrows, bearings etc.). Small, rural based enterprises can manufacture certain types of intermediate means of transport if they have access to the necessary materials and equipment. The central government, NGO's and donor agencies can play a vital role by providing required credit facilities and engineering support. A good example is the small business scheme of BBK where a loan guarantee fund is issued by the donor and controlled by the treasury. A similar arrangement has been going on for the Kenya Veterinary Association privatisation scheme (KVAPS).

There are other interventions that would be necessary to strengthen local manufacture. For instance, the cost of materials can be reduced if duty on their imports is removed, a matter of government intervention and policy. There should also be a deliberate policy to protect local manufacturers from imports by imposing levies on such imports.

Promotion of local manufacture is particularly advantageous. It ensures that production methods and schedules can be adjusted to suit the uneven nature of the demand which often exists for intermediate means of transport (IMT's). It makes it much easier to respond to specific requirements in different locations. It means that maintenance and repair capability is locally available and that there are low costs of distribution.

Local manufacture advances the process of rural industrialization, creating off-farm entrepreneurship and much needed jobs – a goal pursued by most governments in developing countries.

The role of NGO's and donor agencies

Donors usually have clearly defined priority areas based on their development agenda which may cut across several sectoral lines. On the other hand

NGO's as executing agencies develop their development agenda based on perceived or identified need within a particular sectoral line, for example draught animal power, small enterprise, rural and social development, family planning etc. By having donors and NGO representatives as active members of the network, it becomes easier to identify areas of common interest and allocate responsibilities accordingly.

In line with this thinking, Barwell 1993 proposes the following responsibilities for donors and NGOs:

- identification of a focal point, probably in a policy within the agency;
- establishment of an intra-agency working group to develop the strategy;
- definition of rural transport policy in conformity with agency development objectives and specifying types of interventions admissible;
- allocation of intra-agency responsibilities, particularly concerning the inclusion of rural transport components within different sectors and for monitoring and evaluations;
- development of operational guidelines.

The network would make it possible to execute such steps.

The role of Communities

Local participation in rural transport planning is of paramount importance to ensure that interventions will be appropriate and sustainable. However, there is a limit to which the community can be involved without risking deadlock to the process. For instance, the location of a health centre can generate a lot of heat if the decision is left to the whole community. On the other hand, the location of a water point will need the approval of the community, since it is the community, through the structures they must put in place and manage, who will take full responsibility of the project.

It is important to inform the community and encourage them to appoint committees to follow up progress and act on their behalf. These committee members also become the contact point for the network. Their views (which are the community views) must be sought at the outset and thereafter to ensure a meaningful input from them throughout the process.

As part of capacity building the group should undergo participatory training both formal and informal. They will be expected to actively participate in workshops organised by the network. In return, the group could train rural communities at workshops, institutions and on the farm, define

key issues to be addressed in rural transport planning and validate assumptions and conclusions about access problems, provide information on the validity, acceptability and probable sustainability actions.

The group could also act as the link to the community on credit procurement and advice on equipment choice and usage.

6. CONCLUDING REMARKS

Decentralization of the decision making process and services/facilities is going to be an important step towards human and institutional capacity building. The "household" approach in rural transport planning must embrace the concept of participatory methods and recognise the role of local institutions in assessing rural transport needs.

A well organized national (even regional) network of experts, organizations and governments is needed working under the umbrella of the national forum group (NFG) to facilitate information flow, plan and execute rural transport programmes.

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**ROLE OF IFRTD SECRETARIAT AND NATIONAL FORUM GROUPS
IN RURAL TRANSPORT AND DEVELOPMENT:**

A focus on Evolution and Prospects for Kenyan NFG

by

David S. O. Nalo, Kenya National Forum Group

1. INTRODUCTION. INTRODUCTION. INTRODUCTION. INTRODUCTION

Transport is of particular importance in rural development. In rural areas as much as in urban areas, transport provides access to a range of goods and services required for daily needs. Access to ideas and information, to markets and services, to people and places, to new opportunities, is crucial to the development process of any country. Unfortunately, transport policies and programmes have been narrowly defined in terms of roads and motorised means of transport. The conventional approach to rural transport has been to invest in roads and motorized transport systems.

Evidence from studies (Dawson & Barwell, 1993; ILO, 1989; IT Transport, 1995; and Rural Travel & Transport Programme, 1996) show that a large proportion of rural travels takes place outside roads and use non motorised transport. Many villages in the developing world are not part of road networks. Even where there are links, villagers often cannot afford motorized transport. Therefore goods and persons are mainly transported on foot. These transport constraints can hamper agricultural production and restrict rural development. The International Forum for Rural Transport and Development (IFRTD) promotes an alternative approach towards rural transport.

The International Labour Organisation (ILO) and the Intermediate Technology Development Group (ITDG) have been concerned for a long time with understanding the real nature of transport needs of the rural people. In Sub Saharan Africa (SSA), the ILO has been instrumental in providing support for labour based technologies both for improvement and provision of transport infrastructure and employment creation in rural (Lennartsson et al, 1995) and lately in urban areas (Kabiro, 1995 and Miller, 1995). ITDG equally supports intermediate technologies to ease the transport burden in rural areas by using both transport and non transport interventions. Until the last decade, there has been an overconcentration on roads and motorised transport, with less attention to non motorised transport. Physical infrastructure is only a partial contribution to improving accessibility. Real improvement in access and mobility can only be brought about by a systems approach dealing with means of transport and the development of transport services on par with physical infrastructure, regulatory framework, and institutional responsibilities (IT Transport, 1995:1).

This paper attempts to describe the IFRTD and National Forum Groups (NFGs), presents a brief history of the two and how they relate in their respective roles globally and nationally.

A detailed account is given of the evolution of the Kenyan NFG, outlining the problems encountered, initiatives undertaken, and the opportunities available. The opportunities are identified around ongoing transport activities undertaken by various institutions, but which do not pay sufficient attention to rural transport. Ultimately, the paper argues for strengthened networking and information sharing in rural transport issues with a view to influencing transport planning in the country. A Terms of Reference (TOR) for NFG is also presented (annex 1) as a means of legitimising objectives, roles and functions, and activities of the NFG.

2. THE INTERNATIONAL FORUM FOR RURAL TRANSPORT AND NATIONAL FORUM GROUPS. THE INTERNATIONAL FORUM FOR RURAL TRANSPORT AND NATIONAL FORUM GROUPS. THE INTERNATIONAL FORUM FOR RURAL TRANSPORT AND NATIONAL FORUM GROUPS. THE INTERNATIONAL FORUM FOR RURAL TRANSPORT AND NATIONAL FORUM GROUPS.

What is the International Forum for Rural Transport and Development?

The International Forum for Rural Transport and Development (IFRTD) is a *Global Network* of people and organizations interested in promoting a broader approach to meeting the transport needs of rural people. A Network is any group of individuals or organisations that, on a voluntary basis, exchange information or undertake joint activities. Networks organise themselves in such a way that the individual autonomy of their members remain intact and is strengthened by the interactive process of networking (IFRTD, 1996).

The broader approach to rural transport that the IFRTD promotes, focuses on:

- the introduction and dissemination of intermediate means of transport (e.g. bicycles, pack animals, wheelbarrows, low-cost motor vehicles, etc.) to fill the gap between walking and motorized vehicles;
- improvement of local transport infrastructure such as paths, tracks, footbridges, rural roads and riverways using local resources and labour-based technologies;
- expansion of appropriate rural transport services, which can provide options for the rural population who can rarely afford purchasing their own means of transport;
- the increased use of an integrated planning approach to rural transport problems, incorporating the choice between interventions in

the transport system to facilitate mobility and location, or the upgrading of services and facilities.

The Forum aims to exchange information and to carry out joint activities in such a way that the individual efforts of its members to promote this approach is strengthened.

History of IFRTD.2 History of IFRTD.2 History of IFRTD.2 History of IFRTD

The Forum started its activities in 1992 with financial support from NORAD, CIDA, SDC and SIDA. The ILO and ITDG shared the activities of the Secretariat. Initially, the Forum concentrated on establishing the network. Regional consultations in four regions with meetings organized in Southern and Eastern African and Asia led to the identification of interested individuals and organizations. During this time, the Forum sought to encourage national networks (National Forum Groups) in several countries in Asia and Africa.

Today the Forum has approximately 800 members on its mailing list and a full time Secretariat hosted by ITDG in London, UK. The Secretariat is supported by an Advisory Committee comprising the founder members, representatives of donors and representatives of National Forum Groups. Kenya has been a member of the Advisory Committee since 1994.

What is a National Forum Group?.3 What is a National Forum Group ?.3 What is a National Forum Group ? What is a National Forum Group ?

A National Forum Group (NFG) is a network of individuals and organizations in a country working towards the objectives of the Forum. Members are drawn from a wide range of organizations and disciplines. They include representatives of government agencies, multilateral or bilateral projects, universities and local and international NGOs. Core members of National Forum Groups meet regularly and plan to carry out joint activities. These range from research work to supporting practical projects.

The IFRTD Secretariat supports NFGs in several ways:

- provides NFGs with contact details of potential members;
- assists in developing NFG objectives and activities;
- assists in fund raising for NFG activities,

including where necessary some initial funding for the establishment of a NFG;

- provides information on activities of other NFGs and members in other regions; and
- promotes international and regional activities that will strengthen linkages between NFGs and between members of the international network.

Activities of the Forum.4 Activities of the Forum.4 Activities of the Forum.4 Activities of the Forum

The activities of the IFRTD can be divided into three: those taking place at international, regional and national levels.

(a) International Activities(a) International Activities(a) International Activities

These include a newsletter *Forum News* which is published by the Secretariat, three times a year in English, French, and Spanish. Members of IFRTD receive the newsletter free of charge. Each issue of the newsletter is based on a specific theme. Past themes have addressed: credit issues, women's issues, planning for rural accessibility and intermediate modes of transport, the role of government in promoting rural transport, and research and training. At the international level, IFRTD also has horizontal linkages to other networks, institutions and regional and international programmes of bilateral and multilateral donors.

(b) Regional Activities(b) Regional Activities(b) Regional Activities(b) Regional Activities

The IFTRD Secretariat encourages joint activities among its members, NFGs, and other networks, bilateral and multilateral donor organisations. Such joint activities include regional and inter-regional seminars and workshops on selected themes, publications, information and enquiry services. Some organisations or networks that the Secretariat has horizontal linkages with are:

- Animal Traction Network of Eastern and Southern Africa (ATNESA);
- Sub Saharan Africa Transport Programme of the World Bank, particularly its Rural Transport and Travel Program (RTTP);
- ILO programs in East and Southern Africa and Asia (e.g. ASIST); and
- Sustainable Transport Action Network in Asia and the Pacific (SUSTRAN)

The Forum encourages horizontal networking among these organisations as much as it encourages collaboration between different NFGs. This is important for information and experience sharing for

mutual reinforcement and consolidation of efforts in responding to rural transport needs of different countries.

(c) *National Activities(c) National Activities(c)*
National Activities(c) National Activities

National Forum Groups carry out a range of activities from research and development of intermediate means of transport, to developing bibliographies and influencing government and donor policies and strategies. NFGs also jointly with implementors of rural transport activities can initiate practical projects (see below for details).

Secretariat of the International Forum.5 *Secretariat of International Forum.5* *Secretariat of International Forum.5* *Secretariat of International Forum*

Support for the establishment and development of National Forum Groups is one of the priority activities of the Secretariat. It also generates and distributes information on rural transport issues through:

- regional and interregional research programs;
- responding to enquiries; and
- publications.

3. EVOLUTION OF KENYAN - NFG. **EVOLUTION OF KENYAN - NFG.** **EVOLUTION OF KENYAN - NFG.** **EVOLUTION OF KENYAN - NFG**

An Overview.1 An Overview.1 An Overview.1 *An Overview*

Efforts towards the formation of a NFG in Kenya started in February 1994 with a core membership made up of Office of the Vice President and Ministry of Planning and National Development, the ILO, and ITDG Kenya. This was a response to the outcomes of the First Regional Meeting of Experts in Anglophone Africa held in Lilongwe, Malawi, in November 1994. The Lilongwe meeting generated substantial interest among the Kenyan participants who sought to operationalise the resolutions of that meeting (Proceedings of Lilongwe Meeting, 1994).

Approaches to the formation of NFG can take various forms, depending on the need and specific policy environment in each country. The various approaches are those typified by the ones adopted by Bangladesh, Sri Lanka, Philippines, and Malawi. In principle there are five main steps leading to the formation of NFG (IFRTD Guidelines, 1994:4-5). The steps include an initial informal meeting of a core group of persons, preparation of a discussion paper that defines the problem and the need to form

an NFG, an introductory meeting, establishment and official launch of NFG. The approach adopted by Kenya does not deviate much from the one prescribed by the IFRTD secretariat.

Steps Towards Formation of NFG.2 *Steps Towards Formation of NFG.2* *Steps Towards Formation of NFG.2* *Steps Towards Formation of NFG*

(a) *Informal Meeting(a) Informal Meeting(a)*
Informal Meeting(a) Informal Meeting

An informal meeting of a core group of individuals sharing common interests and experience in rural transport issues was held in February, 1994. This initial meeting was attended by representatives from the Office of the Vice-President and Ministry of Planning and National Development (OVP&MPND), ILO, and ITDG, Kenya. The primary objective of the meeting was to chart out the path to follow during the formation of the NFG.

The informal meeting resulted into two things. One, a definition of steps to follow that would lead to the formation of a National Forum Group. Two, a consensus to prepare a discussion paper. The paper was to take into account the resolutions of the Lilongwe meeting and reflections on the Seventh National Development Plan which also discussed the need to promote the use of Non Motorised Transport (NMT).

(b) *Preparation of a Discussion Paper(b)*
Preparation of a Discussion Paper(b)
Preparation of a Discussion Paper(b)
Preparation of a Discussion Paper

By April, 1994 a discussion paper entitled *The Need to Develop Rural Transport in Kenya* was ready. The paper focused on Kenya's transport policy, the problems of rural transport, the information available on rural transport, the effect of the rural transport system on various developmental activities, and a proposal of what path to follow establishing an NFG. It acknowledges achievements in capital formation in road infrastructure and the existence of diversified but less coordinated means of transport. It examined the need for studies which address the local demand for transport. The missing link between conventional means of transport and contemporary issues about rural transport and the increasing need to use of NMTs, especially where they have comparative advantage over motorised transport is also addressed.

The paper made the following recommendations:

- that OVP & MPND takes the lead in coordinating the formation of NFG;

- that steps discussed during the informal meeting be adopted;
- that initial membership of the NFG be made up of OVP&MPND, Ministries of Agriculture, Livestock Development and Marketing (MoALDM), Local Government (MoLG), Transport and Communications (MoTC), Public Works and Housing (MoPWH), the ILO and ITDG, Kenya;
- that the NFG concerns itself with issues of improvement and maintenance of rural transport infrastructure i.e. tertiary and community roads
- that the NFG promotes low cost transport;
- that the NFG supports non-transport interventions, and encourages simple agrobased food processing technologies at farm level that lead to reduction of distance of travel; and finally
- that the critical initial step would be to convene an introductory meeting of the already identified institutions to discuss the issues and recommendations in the discussion paper and to elect a committee to follow up activities leading to the establishment of NFG.

(c) *Introductory Meeting(c)* *Introductory Meeting(c)*
Introductory Meeting

The Introductory meeting took place on 21st June, 1994. Participants concurred with issues and recommendations raised in the discussion paper. There was consensus of the need to network, share information available on rural transport, and plan together for improved rural transport in the country. Additional issues raised at the introductory meeting included the disproportionate role of women in rural transport and cultural bottlenecks that hinder women from using non-motorised means of transport such as bicycles. The meeting fully endorsed efforts towards establishing a National Forum Group. The key output of this meeting was that a Working Group comprising MOPW&H, and MOTC, OVP & MPND, and the ILO was appointed to develop a Terms of Reference (TOR) for consideration by the members of NFG. The purpose of the TOR was to provide a guideline to the operations of NFG.

(d) *Actual Process of Establishing NFG* (d) *Actual Process of Establishing NFG* (d) *Actual Process of Establishing NFG*

The Working Group embarked on the preparation of a *Terms of Reference for the National Forum Group on Rural Transport and Development*. To solicit wider support and closer integration with the IFRTD Secretariat, another Discussion Paper titled *Proposals on Support Needed by the National Forum Groups from IFRTD Secretariat and Elsewhere* was prepared and presented to the IFRTD Advisory

Committee meeting in London in April 1995. The paper identified five key problems in establishing NFGs: the lack of time, the lack of an institutional base, the lack of resources, the lack of credibility, and missing links. It went further to suggest both pre and post launch solutions that could be provided by the Secretariat.

This document was extensively discussed at the 1995 Advisory Committee meeting and based on it some minimal support started to emerge (IFRTD, 1995:12-15). The key output of this process is that the Working Group prepared a draft TOR and discussed it at a series of consultative meetings. The TOR presents background information, objectives and functions, composition and co-ordination arrangements, and methods of raising funds for NFG. Other initiatives and/or outputs during this process are summarised in Box 1.

The formation of the NFG is a major step towards comprehensive transport development in the country. It is also big leap towards creating a framework within rural transport issues can be articulated and promoted. For the NFG to play this role effectively, it needs to raise its profile, and expand its network of contacts. This is the challenge of the First National Workshop on Rural Transport and Development, whose key outputs are: an outline of a workplan incorporating a set of NFG activities to be undertake in the foreseeable future; a directory of actors in this field; and vibrant networking arrangements with capacity to inform and influence transport policy planning process in the country.

(e) *Official Launch of NFG(e)* *Official Launch of NFG* (e) *Official Launch of NFG*

IFRTD views the official launch of NFG as extremely important. It is important because it could raise the profile of an NFG and can help in broadening the NFG membership. This is the stage where the Kenyan NFG finds itself in. This step will therefore mark a new era of NFG which has a wider membership and officials having a clear framework under which to operate. The core group of Kenyan NFG through a series of initiatives (Box 1) and a review of wider consultations with the government, members and support from the Secretariat is ready to go through this crucial step. Resolutions of the workshop will be presented to wider audience including senior government officials, NGOs, and other stakeholders in rural transport matters.

BOX 1: OTHER INITIATIVES BY NATIONAL FORUM GROUP

The Kisumu Project (1995): A joint effort by NFG Working Group and ITDG led to a project proposal namely: *Increasing and Improving Available Options of Non Motorised Transport in Western Kenya*. By mid 1995, NFG in liaison with ITDG and the Kisumu Innovation Centre, Kenya (KIC-K), secured funding from ILO POL/DEV and ILO FIT, for the implementation of the project. Lessons learnt from the project were to be applied in expanding similar NFG initiatives that support rural transport and non motorised means of transport technologies.

Follow up of Kisumu Project (July, 1996): As part of project monitoring NFG officials visited the Kisumu project between 15th and 17th July, 1996 to evaluate the progress made so far. The team held discussions with ITDG Programme Manager and Transport Project Officer and with officials of KIC-K, all based in Kisumu. It held discussions with "Jua Kali" artisans involved in the project and attended a show to market the NMT products in Bondo, Siaya District. It was noted that the project was successfully implemented. The team noted however, that for sustainability, there was a need to develop a retail outlet and a credit scheme for the already trained artisans. As an alternative to credit scheme a project to interest private investors in the production of these products would institutionalise the production of NMTs in the region.

First National Workshop: In October 1995, NFG and ITDG, with support from the IFRTD Secretariat embarked on the initiative to hold *First National Workshop on Rural Transport Development in Kenya*. The major considerations preceding this initiative were:

1. Policy environment on transport in Kenya has increasingly become favourable to issues of non motorised transport. The 7th National Development Plan, identified a missing link in road network development, and recognised the need to provide adequate facilities to pedestrians and cyclists, and to promote wider use of non motorised means of transport (GOK, 1994:76-78).
2. The Minister for Finance in his June, 1995 budget, reduced the duty rates and value added tax on bicycles as part of implementation of transport policies prescribed in the 7th National Development Plan.
3. The Ministry of Local Government through Kenya Urban Transport Infrastructure Project (KUTIP), with World Bank funding through SSATP, is implementing projects aimed at promoting the provision of facilities such as pedestrian and cycle paths in a number of selected urban centres in the country and advocates for increased use of non motorised transport.
4. Sessional Paper No.1 of 1994:82-83, also addresses long term sustainable infrastructure requirements for the country.

These are major positive indications of a favourable policy environment. The changes are coming at a time when the Government is in the process of identifying stakeholder participation through which various policy statements can be translated into meaningful programmes and activities. It is hoped that 8th National Development Plan will also emphasise rural transport issues and how it can facilitate rural community development.

The workshop proposal was presented and discussed at the Advisory Committee meeting in London, UK, April, 1996, and was fully endorsed by the policy committee.

One Day Seminar (July, 1996): NFG held a one day seminar to deepen the understanding and inspection of potential members on the functions of NFG as per TOR and to solicit consensus on the proposed First National Workshop. The TOR has been revised along the suggestions made by participants in the one day seminar who also fully supported proposals for the National Workshop.

Source: NFG Files, 1995/1996.

4. PROSPECTS FOR THE KENYAN NFG. PROSPECTS FOR THE KENYAN NFG. PROSPECTS FOR THE KENYAN NFG. PROSPECTS FOR THE KENYAN NFG

This section of the paper highlights potential prospects of the Kenyan NFG. Issues raised here are by no means exhaustive. They are indicative of the horizon of activities that awaits or can best be tackled through the NFG. Based on the NFG Terms of Reference and assuming it executes its facilitation role effectively, the NFG can greatly contribute to policy reforms in the transport sector by incorporating a systems approach to planning that addresses the real problem of rural transport and its impact on rural development. Given the correct policy environment, the NFG can provide for transport policy convergence rather than divergence. Some of the areas where such convergence are envisaged and addressed as follows.

Sub Saharan Africa Transport Programme (SSATP).1 Sub Saharan Africa Transport Programme (SSATP).1 Sub Saharan Africa Transport Programme (SSATP).1 Sub Saharan Africa Transport Programme (SSATP)

Studies have shown that over 70 percent of the Sub-Saharan Africa population in rural areas are characterised by low agricultural productivity and isolation. Access to most basic services such as health clinics, schools, markets, agricultural extension services etc in rural areas is difficult. Consequently, rural areas are characterised by high incidence of poverty. Economic growth based on increased agricultural and industrial productivity, and improved access and mobility to basic services are key to poverty reduction. Government, donors, NGOs, and individual experts must collaborate closely in the endeavour to step up support to rural infrastructure development.

The Rural Travel and Transport Programme (RTTP), a sub-component of the SSATP provides a collaborative framework to assist countries in improving rural transport service provision. RTTP is concerned with research, conceptual work, and supports pilot efforts to country policy and strategy development. This has arisen because, many donor projects have been difficult to sustain. Such difficulties are partly explained by high degree of technical assistance, inability of pilot projects to address underlying policy issues such as fragmentation of actors and institutions involved in rural transport e.g. unclear responsibilities between Central and Local Governments, between sectoral Ministries, among aid agencies, and among the NGOs. Unfortunately, the RTTP does not target Kenya as one of the beneficiaries. The question is,

how can the NFG through networking translate these opportunities into tangible activities for the benefit of rural communities and to the country at large?. Perhaps the World Bank through SSATP should support IFRTD and NFG initiatives.

Road Maintenance Initiative (RMI).2 Road Maintenance Initiative (RMI).2 Road Maintenance Initiative (RMI).2 Road Maintenance Initiative (RMI)

Rural transport can not be addressed in isolation from the rest of inter-urban road network. Experiences gained under RMI need to be integrated into the future rural infrastructure agenda. Institutions and practices introduced for the main and secondary road networks must be taken into account when strategies and action plans for rural roads are drawn. Kenya, like many other SSA countries, has embarked on the institutional reform of its major road network. The reforms include the introduction of fuel levy and ongoing initiatives towards formulating an appropriate institutional framework for road improvement and management.

What is now required in the country is to widen the reform process to address the transport problem of rural areas. Available data suggests that there is 1½ to 2 times of as many community roads as there are tertiary roads. In certain SSA countries the ratio may be as high as 5. Tertiary roads provide access within a district of a local government area whereas community roads and paths connect village, settlement or group of villages to the tertiary or main arterial road network (Calvo and Silverman, 1995:4-5). Much of the traffic on tertiary roads and community roads and paths is non-motorised. For example, in Kenya pedestrians make up 92 percent of the traffic volume on community roads (Gravin, 1991) and in Uganda bicycles constitute 81 percent of vehicle flows on some main roads (Grisley, 1994).

International and National Responsibilities.3 International and National Responsibilities.3 International and National Responsibilities.3 International and National Responsibilities

Rural transport has featured in international development assistance only over the past 10 years. To date there is a small but steadily growing body of professional expertise in this field. Under such circumstances, an ideal management framework in most cases will have to incorporate a blend of international and local expertise. The justification of international specialists has more to do with bringing to bear, their experience of what can or cannot work in different settings. For example, possible adaptations that have been made to different Intermediate Means of Transport (IMT) to suit specific transport tasks, and the need to integrate the

promotion of IMTs within initiatives that ensure that the right type of physical infrastructure can be provided, maintained and sustained. (IMTs include a range of transport equipments encompassing both non motorised and motorised transport. NMTs exclusively focus on non motorised transport).

National expertise especially in the form of a National Forum Group, is also important in three ways. First, in ensuring that external interventions are really adaptable to local conditions. Two, in providing a well informed perspective on what is likely to be sustainable given the local circumstances. And three, to provide a basis for continuity where necessary, especially when donor funded pilot projects/programs come to an end.

NGO Initiatives.4 NGO Initiatives.4 NGO Initiatives.4

There is a large body of local and international NGOs that are involved in rural transport and non transport interventions. These NGOs include among others the ITDG, KENGO, ApproTech, ATNESA, KENDAT, Action Aid, KIC-K, Triple W. Engineering Ltd, IT-Transport, and Road Safety Network all of which are directly or indirectly implementing numerous rural transport programmes /projects in the country. The NFG as a facilitating body, has a crucial role in creating the platform on which all these actors can productively share information and experience so as to minimise duplication and waste of resources and consequently maximise support to rural transport issues.

As actors in rural transport development continue with individual initiatives, the NFG has the scope of providing a network of organisations interested in rural transport issues with mandate to stimulate activities among the constituent members. It can also provide the ground on which fragmented activities and unclear responsibilities can be harmonised and streamlined for the benefit of the country and the respective individual initiatives.

Donors and Bilateral Organisations.5

Donors and Bilateral Organisations.5
Donors and Bilateral Organisations.5
Donors and Bilateral Organisations

There are many experiences and examples to indicate that a number of aid and bilateral agencies tend to fund specialised sectoral development initiatives in roads, agriculture, education, water, and health among others, paying little or no attention to issues of accessibility. (The exceptions to this are the institutional members of the IFRTD: ILO, ASIST, ODA, SIDA, SDC, NORAD.) Consequently, the full impact of such projects is not realised because they are not accessible to the very people they were

intended.

An illustration may help to drive home this point. A donor responded to our request for funding of this workshop, that their concern is integrated rural development, with a strict focus on health and water.

The question is what is the likelihood of success of such projects if accessibility problems are not integrated into the project nor supported by the funding agencies ?

Through networking and information sharing, the NFG has the opportunity to influence donor policies to fully appreciate the important role of rural transport and accessibility in designing projects. It is not enough to undertake a project when the community to whom the project is intended cannot have access the services of such a project.

5. CONCLUSIONS. CONCLUSIONS. CONCLUSIONS. CONCLUSIONS

The aim of this paper was to define the role of International Forum for Rural Transport and Development in responding to rural transport problems. Secondly, the paper aimed to highlight the relationship between the International Forum and the NFGs by outlining various activities undertaken by both. Third it described the linkage between IFRTD and NFGs to governments, other networks, donors, bilateral and multilateral agencies. The fourth objective was to discuss in detail the evolution of the Kenyan NFG, its activities, and opportunities available in fostering rural transport development initiatives in the country.

Based on the evidence presented in the paper we can conclude with the following statements. A good deal of effort has been expended in the process of establishing of the NFG. There is need to develop policy guidelines for rural transport planning for the country. It is in the rural areas that the bulk of Kenya's labour force live, that small scale agricultural activities take place, and where potential for employment creation is highest. Ongoing initiatives in the transport sector such as those undertaken by SSATP, RMI, International and National experts, the Government, NGOs, and bilateral and multilateral agencies, should fully support the alternative approach to transport planning. That whereas institutional matters such as the responsibilities over rural infrastructure and other road network, will need to be carefully addressed, a strong NFG with clearly defined responsibilities (see TOR), guided and supported the Government and other stakeholders should play a stronger role of facilitating and promoting the development and implementation of rural transport systems that fully respond to the needs of the rural communities.

BOX 3: SOME FINDINGS ABOUT THE EFFECT OF NON TRANSPORT INTERVENTIONS ON WOMEN

Only rarely have agricultural, health, educational and other development initiatives included transport components. Yet it is clear that unless access is improved, the impact which projects in any of these fields can have is often strictly limited (Forum News, 1993:1). A desk research that drew on studies and project documents regarding the impact on women of water supply, forestry, stove and grinding mills in Sub-Saharan Africa provide mixed results. For example, in many of the projects, the potential benefits of interventions were often not realized. The primary focus of most water projects aimed at providing better quality water and where improved water source was not significantly closer for a large number of households, it had very little impact on reducing the transport burden of women. On grinding mills, if women grinding at a distant mill were able to use a mill closer to their homes, the transport element of their task decreased. The crucial thing about non transport interventions is that they should clearly define the intended effect of the intervention on time and effort spent by women on the task, including transport component and two, projects need to develop closer monitoring of the actual effort spent on the task and a better understanding of how the freed up time and energy is used. This may require that clear monitoring and evaluation procedures for auditing of time and energy be developed (Calvo C.M. in *Forum News*: 1996:3).

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ANNEX 1

TERMS OF REFERENCE FOR NATIONAL FORUM GROUP1: TERMS OF REFERENCE FOR NATIONAL FORUM GROUP: TERMS OF REFERENCE FOR NATIONAL FORUM GROUP: TERMS OF REFERENCE FOR NATIONAL FORUM GROUP

1. BACKGROUND

Initiatives towards establishing a National Forum Group (NFG) in Kenya started in February, 1994. The Group was formally instituted in June 1994 and was initially made up of representatives from the Ministries of Agriculture Livestock Development and Marketing, Local Government, Public Works and Housing, Transport and Communications, Office of the Vice President and Ministry of Planning and National Development (Chairing). Other members included representatives from ILO/ASIST and ITDG, Kenya. *See also the revised membership list.*

The process started off with an informal meeting in February, 1994. The informal meeting was attended by representatives from Office of the Vice President and Ministry of Planning and National Development, the ITDG and ILO. The group reflected on ideas contained in the 7th National Development Plan and those of IFRTD initiatives. In April, 1994 a discussion paper entitled *The Need to Develop Rural Transport in Kenya* was prepared. It was discussed by the initial committee in June 1994.

The process adopted was similar to that outlined in the Guidelines prepared by the Secretariat. The Guidelines identify five key steps in the effort to establish an NFG. The five steps are:

- Step 1. Meeting of an informal group.
- Step 2. Preparation of a discussion paper.
- Step 3. An introductory meeting.
- Step 4. Establishment of an NFG.
- Step 5. Official launch of NFG.

The interim officials have virtually accomplished steps 1 to 4 as of July, 1996. A Working Group was formed in June 1994, and after extensive consultations, the Group has subsequently prepared a draft TOR. The TOR was circulated to initial members for comments. The TOR further benefitted from inputs of wider group attending a one day Seminar held on 19th July, 1996 at Fairview Hotel, Nairobi. All the comments and reactions have been incorporated in this TOR.

2. OBJECTIVES

The overall objective of the National Forum Group like that of the International Forum for Rural Transport and Development is to facilitate and promote *"the implementation of rural transport systems that respond adequately to the needs of rural people"*. To achieve this the NFG argues that roads and motorised transport as conventionally understood are not enough. Consequently, roads development must be complemented by Rural Transport Infrastructures (RTI), and motorised transport must officially be complemented by increased use of Intermediate Means of Transport. This overall objective of the NFG will be achieved through *advocacy, networking, data collection and dissemination, and identification of research and training needs.*

3. FUNCTIONS OF THE NFG

The prime function of the Forum, is to provide the link between policy makers and planners, aid agencies, Non Governmental Organisations (NGOs) and research institutions in so far as rural transport and development is concerned. The Forum should also bridge the gap between transport policies and practices particularly with regard to rural transport. It should endeavour to keep pace with new developments in different countries. Furthermore, the Forum will also design and prepare the guiding principles for Rural Transport Policies. In this respect it will outline specific activities to be undertaken by different groups of the rural populace and other stake holders in rural infrastructure investments and maintenance.

To ensure that the Forum performs its objective of a facilitator and promoter of rural transport systems, it will be necessary that the Forum undertake certain activities:

- develop the professional capacity in rural transport research activities;
- identify the training needs for rural transport policy makers and practitioners;
- participate in transport policy formulation; and
- work together with implementing agencies in project design, monitoring and periodic evaluation.

The Forum will be expected to catalyze but not

implement. Implementation will be the responsibility of the Government, aid agencies, and NGOs.

(a) Advocacy

In view of the perceptions of most policy makers towards transport and the incompleteness of information on rural transport, the Forum will be expected to play an important advocacy role. Advocacy entails providing broad based support towards encouraging the concept of rural transport and development, and the use of non-motorised transport in both rural and urban areas, especially in municipal, town and urban councils. Advocacy implies engagement in the following activities:

- participation in policy seminars and workshops both within Government, academic fora, and in local communities;
- hosting policy seminars on rural transport and development;
- clarifying existing ambiguity on who is responsible for what infrastructure especially with regard to rural transport infrastructure;
- preparing policy and planning papers and disseminating them to planners and policy makers; and
- organising study tours for policy makers and planners to rural transport projects both within the country and in the region.

(b) Networking

Considering the breadth of rural transport systems and the large number of actors involved, the NFG shall take the leading role in linking up all actors. In this respect, the NFG shall:

- organise district and national level meetings;
- organise study tours to rural transport projects within and outside the country;
- update members on NFG activities and facilitate sharing of information between members themselves; and
- prepare a calendar of activities undertaken by key actors such as those of the ILO/ASIST, ITDG, IFRTD, KENDAT, and IHE specific the activities and dates.
- develop a data base of relevant community based organisations and facilitate networking at this level.

To perform these functions effectively, the NFG will maintain a data bank of institutions, organisations and agencies involved in rural transport activities, both in and outside the country. In addition, NFG shall maintain a mailing list of all other actors in this field to fulfil its role of networking people and institutions that share in this common problem.

(c) Data Collection and Dissemination

In addition to advocacy and networking, the National Forum Group shall also play key role in data collection, processing and facilitating information dissemination. Each of these roles is elaborated below.

(d) Information Gathering

The NFG will provide communication channels both for Information gathering and Dissemination. In this regard the Forum will either directly or indirectly (i.e. by contracting out) collect information relating to:

- scale of rural transport problems in the country;
- forms and nature of rural transport in different rural set ups;
- impact of current transport policies in facilitating accessibility to transport infrastructure and facilities, health, education, agriculture, environment, etc.;
- emerging transport policy areas and their potential impacts; and
- lessons and experiences relating to approaches and technologies useful for enhancing rural community development, especially that of women who carry much of the rural transport burden.

(e) Information Dissemination

It is important that data collected is stored and processed and that the results obtained are disseminated. The NFG will ensure that the information gathered is processed and disseminated through:

- preparation of policy papers;
- distribution of publications, guidelines, and other information materials for advocacy;
- sharing lessons learned from pilot projects with policy makers and implementors; and
- supplying such information in District Documentation Centres so that the rural

community can gain access to such documents.

To strengthen existing transport policies, the NFG will identify resource persons with diverse expertise to undertake special research to fill the information gaps in existing policies.

(f) Identification of Research and Training Needs

There already exists a large body of literature on transport policies in the country. The National Forum Group, will review existing official transport policy documents; examine to what extent practices conform to the policies, and conversely how transport policies formulated conform to the actual practice; and from this comparison, identify strengths and gaps. Based on this, the Forum will attempt to identify information deficient areas and human resource deficiencies. Consequently, it will make recommendations for research areas and specific training needs requirements for implementors and policy makers.

4. COMPOSITION AND COORDINATION OF THE NFG

(a) Composition of the NFG

Membership to the National Forum Group on Rural Transport and Development is open to individual or groups of people, or institutions that subscribe to the NFG's objectives. Presently however, membership of the Group is comprised of the following institutions:

Office of the President (OP) responsible for administration at all levels; oversees District Focus for Rural Development (DFRD); implements famine relief and rehabilitation, and Social Dimensions of Dev. (SDD).

OVP & MPND: responsible for overall national policies including transport policies; coordinator of NFG activities; in charge of both National and District Planning process.

MoALDM: responsible for agricultural policies and programmes in the country; deals with the largest rural and community population; largest user of rural transport infrastructure and means of transport.

MoLG: responsible for infrastructure in all Local Authorities (in urban and immediate hinterland) of urban centres i.e. the municipalities; to incorporate NMTs in 26 towns in the country.

MoTC: concerned with all transport policies of the country.

MoPWH: is responsible for road transport infrastructure especially the classified road network.

UoN: has the capacity for undertaking social and economic research whose findings can form useful input into the policy formulation process.

ILO: a founder of IFRTD and by extension NFG; pioneer of employment creation through use of appropriate technologies; and supports many pilot projects on IMTs in developing countries.

ITDG: supports NFG activities; implements a range of appropriate technology interventions in rural and urban communities, and in transport and non transport; supported the Kisumu IT pilot project Kajiado Donkey Project, and Kathekani IMT project.

MoH: user of NMTs in provision of community health services.

NGOs: (such as KIC-K, APPROTECH, KENDAT, Triple Eng. Ltd., Mazingira Institute) develop and manufacture a range of NMT equipments; respond appropriately to local demands; use cheap appropriate technology for rural communities.

The listed institutions are by no means exhaustive.. The composition and membership of NFG will be reviewed from time to time with a view to broadening its coverage.

(b) Coordination of the NFG

Coordination includes some institutional matters such as the constitution to be adopted. This is entirely left to the individual members of the NFG. At this point in time, when the NFG is relatively small and informal, the need for a formal constitution is likely to be limited. The NFG will in the meantime operate as an *ad hoc* body. The Office of the Vice President & Ministry of Planning and National Development will chair and coordinate the activities of NFG. It will work with elected officials to assist in coordination. But as membership expands, the need for a formal constitution and office will correspondingly increase, and subsequently become unavoidable. The National Forum Group will benefit from a Steering Committee which will provide policy guidance from time to time.

(c) Meetings

The NFG officials will hold quarterly meetings to review progress made in implementing the workplan. More frequent meetings may be held as need arises. The larger body of NFG will meet once a year either in a general meeting, seminar and/or conference, whichever is applicable. Proceedings of all NFG

meetings will shared by all members of the Forum.

5. FUND RAISING

The NFG in liaison with the IFRTD Secretariat, will conduct fund-raising from members of the NFG, Kenyan Corporate Organisations, and Donor Organisations within the country. Fund raising will

also be conducted at the international level with the ultimate goal of mobilising sufficient resources to enable NFG fulfil its functional role and achieve the long term objective of fully responding to the transport needs of rural communities. Forum members will deliberate on the appropriate level of registration fee to be paid by members. The registration money will act as a demonstration to others of the value attached to rural transport and development of this country.

Funding will be sought from local and international aid agencies and NGOs. Resources will also be mobilised from the local communities and the Government. Such fund raising is expected to cater for the Forum activities in the short run, that is, (2-5) years. The Forum will review its activities and funding status from time to time in order to monitor and evaluate NFG activities. In the long run however, that is, five (5) to ten (10) years the Forum will be expected to be self-sustaining. This will evolve from the proposed periodic reviews of the Forum activities.

Promoting Appropriate Means of Transport

by

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ABSTRACT

This paper focuses on a central aspect in transport planning - the question of the means or mode by which the transport activity takes place. A diagnosis of the rural transport issues in developing countries like Kenya have revealed the interlocking problems at play, and how these contribute to the now acknowledged limited impact of investments in the transport sector. The central argument in the paper may seem to be a truism - that Means of Transport should be a legitimate concern of the transport planning discipline, as is provision of the transport infrastructure. While this may be true in economies where the discipline of transport planning was first established, its application in developing countries has led to distorted results. The focus of transport planning has been around road construction, with the implicit assumption that there would be sufficient motor vehicles on the roads to justify the investments. In a general sense, construction of reliable all weather roads have contributed to an increase in motorised traffic in both urban and rural areas of Kenya. What is questionable is the extent to which investment decisions, particularly on roads, are influenced by the transport demand and patterns of people in the rural areas where such roads traverse. In particular, no attention is paid to the means of transport by which rural people can take direct advantage of the transport infrastructure available to them.

This paper therefore explores the concept of Appropriate Means of Transport. By this is meant "those means of transport that match the operational scale and needs, transport patterns and investment capacities of majority of people in rural areas". The paper draws substantially on the experiences of IT Kenya's Rural Transport Programme's in the area of introduction and assessing the impacts of different means of transportation. It is guided by a general belief that transport planning should empower people, enlarge their choices and opportunities in economic and social activities, rather than marginalise them.

1. INTRODUCTION

An essential element of balanced rural development is an adequate and responsive transportation system. Transportation facilitates access to a wide range of social and economic opportunities that people require in order to meet their goals for growth and

development. Conversely, rural poverty is often exacerbated by the inaccessibility to those social and economic services necessary for the well being of the population. Chambers (1983) presents five interlocking elements of the "deprivation trap". One of these elements is isolation. It is convincingly argued that isolation sustains poverty, because services do not reach those that are isolated, keeping them uninformed, and out of contact with opportunities for income generation.

Studies have shown that rural families and particularly women spend a considerable amount of time and energy in transport activities related to subsistence needs of water and energy. In addition, significant effort goes to journeys related to economic activities, such as trips for marketing and farm-input sourcing. These trips are often made on foot. Simple means of transport like bicycles are relatively uncommon in most parts of rural Kenya, even in areas that would be suitable for their use.

On the other hand, motorised transport has demonstrated limited relevance to the transport activities and patterns of rural people. Evidence suggests that presently, transport demand in rural areas is for low speed, low volume and short distance purposes. Journeys sufficiently long to justify use of motor vehicles are infrequent and the cost outlay only justified in occasional situations.

2. RURAL TRANSPORT PLANNING IN KENYA: BRIEF BACKGROUND

In Kenya, like in many African countries, transport planning has relied on tools and models developed in the industrial economies. A central element in the approach to transport development has been to focus on the development of transport infrastructure, particularly roads, with an implicit assumption that a potential for rapid motorisation from individuals and the private sector exists. Roads are still considered the country's primary transport system (Republic of Kenya, 1995) and therefore a key investment area by the government.

Historically in Kenya, the needs for roads arose as a feeder to the railway. A fairly dense network of roads emerged around areas with flat and agriculturally rich terrains (Njenga 1993). In the first decade of independence, high priority was attached to the improvement of the main highway arteries in the trunk road system and selective bitumenization of the

heavily trafficked segments of the primary road network. The mid-70's marked the beginning of a shift in investment from arterial roads to secondary and feeder roads. In part, this was a reflection of the view that the basic transport network was already in place. It was also a response to the increased priority being attached to small-scale agricultural production, and the opening up of rural trading activities. Within this overall thrust, the government implemented two main programmes, the Rural Access Roads Programme and the Minor Roads Programme.

In economic terms, the pattern of road infrastructure development has been guided by a general rationale that it would stimulate growth in productive activities in industry and agriculture. This rationale has historical antecedents. Development of a transport system was not *primarily* a tool for the development of an indigenous economy. The transport network was seen as a means to facilitate and speed up the journey of primary products to export markets, and to entrench extractionist economics. Additional functions of an improved road network were the movement of food to growing urban centres, and the establishment of a nationwide system of judicial and administrative services.

Upto the mid-80's, transport in Kenya was not regarded as being a major constraint to economic and social development - at least from a macro-economic point of view. Until then, Kenya enjoyed a higher standard of transport infrastructure and lower transport costs than most countries in the region as a result of the amount of investments in this sector. Currently, the reverse is the case. The infrastructure created has been unable to sustain itself. National and feeder roads have been neglected as budgets were cut. General transport conditions are deteriorating in terms of quality and service standards, while community level infrastructure, such as tracks and paths, sometimes heavily used and often impracticable or dangerous, have been ignored.

3. RE-EXAMINATION OF THE TRANSPORT PROBLEM

Recent studies (Kaira, 1983, Barwell and Dawson 1993, IT Transport 1995) from a variety of disciplines have highlighted the previously unacknowledged multi-dimensional nature of the rural transportation problem. Often, rural poverty is exacerbated by the inaccessibility to those social and economic services necessary to the well being of the population. This problem cannot entirely be addressed from the point of view of roads provision.

Rural Transport Planning calls for a new look at rural transport from an integrated standpoint. Perhaps the starting point is to look at what transport demand is, *from the point of view of the rural people themselves.*

Subsequently, alternatives to reduce the time and effort spent in transport can be systematically set out, evaluated and prioritised.

4. APPROPRIATE MEANS OF TRANSPORT: THEIR RELEVANCE IN THE PROBLEM OF RURAL TRANSPORT

A central facet of the rural transport problem is that in most areas, people have little access or ownership of any means of transport, much less, motorised ones.

Box 1 gives a crude illustration of the problem in Kenya. Kaira (1983) was the first to point out the limitations of motor vehicles in addressing the transport demand of the rural population in Kenya. He argued that motorised transport services in rural areas were limited. They were mostly inflexible in addressing the transport demands of the rural population which were characterised by short trips and movements of small loads over short distances.

The idea of appropriate means of transport is derived from the simple fact that motorised vehicles are not a solution to the movement needs of rural people. An essential element in improving the transport capabilities of rural people is to promote the adoption and use of a graduated choice of vehicles where performance matches the need, and where cost is in proportion to investment capabilities. The choice would range from low-cost motorised vehicles, motorcycles and their adaptations for load-carrying, including trailers and side-cars, bicycles and adaptations of the cycle technology for load carrying, including trailers and side cars, animal drawn carts, pack animals (eg donkeys), and so on.

In Kenya, the two dominant modes of local-level transportation are bicycles and animal based transport. In western Kenya, bicycles are increasingly being converted into "taxis" for passenger transport. In central parts of Kenya -Limuru, Mwea and Nyandarua, donkey and ox-carts are an integral part of the local agricultural economies, whereas in Kitui, donkeys are the key means of supplying water.

The principal advantage of appropriate means of transport to a household is that they are likely to match the needs of the users and are more affordable and available. Their other characteristics are:

- they are more efficient than headloading and walking which is the mode they tend to substitute
- their manufacture, sales and maintenance can be decentralised
- They provide the link between villages, markets.

5. POTENTIAL BENEFITS

From the experience IT Kenya's Transport

Programme's field projects, the benefits to a household of having a means of transport are;

- reduction in time and effort that goes into subsistence activities –e.g., water and fuelwood collection, transportation of building materials, etc.

- Speeding up evacuation of farm produce before rains, and increased control of marketing itinerary
- improved methods of transporting sick people from homesteads to health institutions
- employment creation through provision of local transport services

The value of appropriate means of transport is perhaps best illustrated by the positive impact that they have had in a number of places where they have evolved spontaneously. One phenomenon that perhaps is worth noting is the use of bicycles as a means of passenger transport in Western Kenya. Table 2 shows numbers of trips made by bicycle taxis operating on a route between Chiga and Kisumu town centre, a distance of about 17 kilometres.

BOX 1: LOW MOTOR VEHICLE POPULATION IN KENYA

In Kenya, use of motor vehicles in rural areas is very limited. This can be illustrated in a number of ways, for instance, in 1994/95, relief food distribution efforts to some of the drought-stricken areas was hampered by the inability of the motorised transport to go beyond the district headquarters;

In Kajiado District, a study carried out in 12 locations showed that in 7 of them, no household owned a car, whereas the biggest number of cars in other locations did not go beyond five. In general, this dearth of motor vehicles, combined with the poor condition of the transport infrastructure makes the hiring of vehicles very expensive and far beyond the incomes of most people in rural areas.

Another study in Kenya showed that 70 percent of all journeys in the rural areas were made on foot, 7 percent by public transport and 2 percent by private motor vehicles. Majority of such rural transport activities are characterised by household trips to the markets, grinding machines, water points and fetching firewood.

Table 2: Trips by bicycle taxi operations in Kisumu-Kibos-Chiga road (About 17Km)

Route	Town to Chiga		Chiga to Town		Kibos to Town		Town to Kibos		Kibos to Chiga		Chiga to Kibos		Totals
	Lo	Unl	Lo	Unl	Lo	Unl	Lo	Unl	Lo	Unl	Lo	Unl	
Loading													
Monday	125	20	160	210	85	7	65	20	16	4	20	30	762
Tuesday	132	17	140	115	92	18	54	18	16	9	25	55	691
Wednesday	140	15	120	21	100	30	43	17	17	15	30	80	628
Thursday	210	20	155	10	75	35	95	7	16	9	20	18	670
Friday	161	23	168	9	84	48	97	5	25	4	22	16	662
Saturday	200	15	105	6	76	13	70	13	25	3	20	56	602
Sunday	92	4	260	3	100	2	70	6	12	3	22	30	604
Totals	1060	114	1108	374	612	153	494	86	127	47	159	285	4619

lo: Bicycle with passenger and/or load.

unl: bicycle without passenger and/or load

6. DISSEMINATION OF APPROPRIATE MEANS OF TRANSPORT

There are many parts of Kenya where the only known means of transport is by walking or headloading. For example, there appears to be substantial potential for greater dissemination of animal carts. However, there still exists strong constraints to the development and dissemination of appropriate vehicles. The adoption of appropriate policies and measures by governments, NGOs and development assistance agencies would contribute to addressing these constraints, and to stimulating wider recognition of appropriate means of transport.

The success of dissemination of appropriate modes of transport in any area is likely to be more sustainable where potential users have a say in the introduction process. Other considerations are;

- the introduction of efficient, but simple manufacturing technologies to reduce cost or improve quality like a jig and wheelbending machine;
- increased capacity to carry out ongoing adaptation in existing designs in order to reduce cost, increase efficiency or facilitate use of locally available material and components;
- The demonstration and introduction of particular types of transport in areas where they are unknown but where they could prove to be useful;

7. COSTS/AFFORDABILITY

While the cost of appropriate means of transport is considerably less than that of conventional motor vehicles, it nonetheless represents a very substantial investment for many –or even most rural households. Affordability is therefore, a crucial issue in the dissemination of appropriate means of transport. The acquisition of these devices particularly those that add significantly to the carrying capacity and/or speed involves a monetary investment. The purchasing power of rural households in many rural areas is very low. Even though the costs of appropriate means of transport such as bicycles and animal carts are low in comparison with conventional motor vehicles, they are expensive in relation to the incomes of many rural households.

The provision of credit facilities could be one way of stimulating the purchase by rural households of an appropriate means of transport. A recent study in Western Kenya found that in most areas, many farmers would be able to repay credit for the purchase of an animal-drawn cart within one farming

season.

8. SUSTAINABILITY OF INTERVENTION

Most initiatives to introduce intermediate modes of transport by Non-Governmental Organisations have usually a certain amount of subsidy involved. This could be non-monetary, like access to information. The difficulty in quantifying the subsidy brought in by the interested agencies makes it difficult to measure the sustainability of an intervention. One way of making sure the introduction of transport equipment becomes sustainable is by introducing capacity to manufacture and maintain it locally. In addition, in areas where transport is a particularly difficult constraint to development, local institutional capacity to co-ordinate initiatives for resolving the problem should be encouraged.

9. THE LIMITATIONS OF "LOCAL" MEANS OF TRANSPORT

Most appropriate means of transport tend to be for localised use. While they have a significant role to play in addressing the transport problems faced by rural communities, the limitations on the impact which they can have must also be recognized (Barwell and Dawson 1993). Recent studies in a number of countries have shown that even where these means of transport exist in significant numbers, they are used primarily for agricultural and marketing purposes –transporting harvested crops to the markets. The use of these means of transport for relieving women of their traditional burden—collecting firewood and/or transporting water is quite limited.

Various reasons have been given for the limited use of means of transport for domestic transport tasks. First, there may be physical constraints on their suitability for some domestic transport tasks. For example, if water is collected from a stream at the bottom of a hill, or from a spring, the water source may not be physically accessible to any means of transport. Similarly, sources of firewood will sometimes only be accessible on foot. Second, in many situations, most households gain access to means of transport by way of hire rather than ownership. In most cases, households will be prepared to spend money on transport only if the activities generate a financial return, such as the marketing of crops.

In many rural areas, a further limitation to the impact of means of transport relates to the gender division of labour. In most communities, women have the responsibility for the transport of goods for domestic use such as firewood and water. However, they have limited or no access to appropriate means of

transport. This is due to their poor access to land and/or credit; their limited influence in household investment decisions; and gender related constraints to the use of means of transport by women.

In some communities, the introduction of means of transport has led to men and boys taking over responsibilities for some of women's transport tasks. Often, this happens only where the activity is commercialized, resulting in women and girls losing an important source of income. In most situations, this has occurred because some domestic transport tasks such as collecting firewood or fetching water have become a particularly serious problem. Thus, it is clear that the introduction of means of transport will not necessarily improve women's welfare even if it reduces their transport burden.

Credit facilities directed at rural women and some ongoing educational input to local community aimed at breaking down cultural barriers to the use of bicycles or other means of transport by women is viewed as a promising way of addressing this issue.

10. CONCLUSION

There is substantial evidence to indicate the need to define the rural transport problem and potential solutions more broadly. In particular, there is scope for promotion of a wider range of means of transport to suit the local circumstances of different areas. Use of appropriate means of transport can help in reduction of time and effort devoted by rural households to meeting their movement needs.

There however remains a general lack of awareness about the full diversity of means of transport, and their use in different parts of the developing world. This lack of awareness exists at two levels; among policy makers and among potential users of means of transport.

Often in policy, any means of transport other than motorised is regarded as backward, and at best, as a stop-gap to be soon superseded by motor vehicles.

This lack of acceptance of their legitimacy and significance has tended to result in their being overlooked in policy making.

The lack of awareness among rural communities is a serious constraint to their wider dissemination. Where farmers have never seen oxen drawing a cart or a bicycle pulling a trailer, they are unlikely to appreciate the benefits and, as a result, are unlikely to articulate demand for the devices.

Governmental bodies, development programmes and NGOs can perform an educational role in creating awareness of, and in demonstrating the value of appropriate means of transport in the rural areas.

More importantly, national policies should embrace a wider definition of rural transport. A rural transport policy should first consider the people and goods to be moved and the prevalent conditions.

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ON METHODOLOGICAL ISSUES IN RURAL TRANSPORTATION AND DEVELOPMENT

by

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ABSTRACT

Although demand models are still widely used in the context of national and regional passenger transport planning, given the rapid social, economic, political, technological and environmental changes taking place in society, including changes in the transportation system itself, the usefulness of traditional approaches such as forecasting and related modelling is, arguably, limited. The dynamic nature of present changes can only be covered by techniques that are not yet available. This raises a dilemma for researchers and planners who desperately need an integrated methodology.

1. INTRODUCTION

While the value of transportation modelling using land use and/or behavioural models cannot, and must not be dismissed wholesale, their utility at a period when the society is undergoing rapid social, economic, political, environmental and technological changes, which are not altogether predictable, is rather doubtful. Many indicators show that instability has taken the place of continuous development. Declining agricultural production, rising unemployment, spiralling energy costs, growing poverty and environmental degradation underline rural transformation in Kenya in particular and in sub-Saharan Africa in general.

All these changes have a direct effect on transport and mobility. One effect is increasing reliance on and demand for non-motorised transport (NMT). It is not always possible to trace the consequences of macro-level changes at the micro-level because the former often consists of a host of small-scale changes. As a consequence, future developments can only be predicted with less and less certainty. Since this is the "first national workshop on rural transport and development", it is befitting to reflect on what has been happening in rural Kenya over the last number of years.

2. RURAL TRANSFORMATION IN KENYA

The preface to the second overall evaluation report of the Special Rural Development Programme (SRDP)

noted that despite considerable progress in the urban industrial sectors, Kenya is still an overwhelmingly rural country. The jobs and the incomes of the vast majority of Kenya's population are rural. Even though urban populations are growing at a rapid rate, the low proportion of the total population that is urban and the current high rate of growth of the total population ensure that the absolute numbers of rural people will be expanding inexorably for the foreseeable future (IDS, 1975).

Today, with the benefit of hindsight, we can justifiably say that the above observation was fairly accurate. It is currently estimated that more than 80% of the Kenya's total population lives in rural areas (Republic of Kenya, 1996).

**TABLE 1: RURAL POPULATION TRENDS
IN KENYA, 1948-89**

Census Year	Kenya's Total	% Rural
1948	5.4	94.9
1962	8.6	92.2
1969	10.9	90.1
1979	16.2	84.9
1989	23.2	82.0

Note: Population in millions.

Source: Economic Survey 1996.

Population pressure in the highlands has led to encroachment by the landless into the Arid and Semi-Arid Lands (ASALs). As a consequence, pastoralists have been pushed into the more barren areas and their production systems put under severe stress (Hjort af Ornäs, 1992). In the high-potential highland areas, rapid population growth together with technical backwardness in food production and lack of off-farm employment opportunities produce conditions where the ecological basis of food production is undermined.

There is visual evidence that land degradation is taking place in most regions in Kenya and that its impact is most severe in the ASALs where the environment is more fragile.

Although the share of the agricultural sector in Kenya's gross domestic product (GDP) has recently declined from around 34% 20 years ago to about 25% at present, it is still the largest sector of the economy. It provides around 75% of total employment. Since Kenya's independence in 1963, the structure of agricultural production has changed significantly. Smallholder production experienced phenomenal growth. The smallholders' share of coffee and tea production increased from practically nothing in 1955 to 40% and 70% respectively in the early 1980s. Between 1965 and 1979, the area of small-scale farms under improved varieties of maize increased about fourfold. The impetus for smallholder activities helped rural incomes grow by 5.2% annually from 1974 to 1982, much of it in non-farm activities (Swamy, 1994).

The downward trend in economic growth from 4.3% in 1991 to only 0.1% in 1993, however, was a serious blow to Kenya's efforts at alleviating poverty. The country's real per capita income registered negative rates of growth continuously between 1991 and 1993, ranging from -1.2% in 1990-91 to -3.1% in 1992-93 (Republic of Kenya, 1994). In absolute terms, Kenya's real per capita income declined from K£ 189 in 1981 to K£ 177 in 1993. From a position of economic strength marked by a real annual GDP growth rate of 6.5% in the period 1963-72, Kenya's GDP growth rate fell to a mere 0.3% by 1993-93.

What is the relevance of all this? Poverty in general and rural deprivation in particular is increasing to an extent that transport planners need to be aware of their direct and indirect effects on demand for transport services. It is, not only the transportation sector that is adversely affected. Other sectors, employment, health and education, to mention a few, also suffer as a consequence of poor economic performance.

Statistics on rural employment conditions are harder to come by than those on the urban/modern sector employment. By 1993, the estimated number of new entrants into the labour market was close to 0.5 million people per year while the economy was only able to generate about 95,000 jobs annually. As the Kenyan labour force is predominantly rural, the unemployment problem in rural Kenya is also likely to be substantial (Republic of Kenya, 1996).

Hopefully, the above scanty statistics will be helpful as background to today's discussion. Now, as we have congregated to discuss rural transportation, let me now turn to this important subject. More than sixteen years have passed since Mr. Charles Kaira made the following observation:

Transportation planning and research in the developing countries has been done mainly in the area of highway transportation with emphasis in providing better highway facilities through better construction and maintenance methods as well opening up of rural areas to encourage development of economic activities in the less developed regions through the construction of feeder roads. Although in some countries intermediate transportation modes like cycling, cycle rickshaws, donkey carts, etc. are used, little effort has been put into research aimed at improving the existing intermediate technology transport modes through programmes that encourage the use of these modes and at the same time improving the technological application of these modes to suit the conditions of developing countries (Kaira, 1980).

The question one might ask is, if the vision for improved mobility in the rural areas has been with us for so long, why is it that we have not acted to address this seemingly key issue in rural development? Kaira argued that more attention should be paid to solving transportation problems in the "deep" rural areas in order to realise full benefit from the investment in feeder roads. He said "...improvement of communication accessibility should also be made at the lower level in order to augment those at the national level." (Kaira 1980). Could it be that transport planning methods available to researchers and planners have largely been inappropriate for the purpose of addressing rural transport issues?

3. APPROACHES TO TRANSPORT MODELLING

In research and/or planning, it is essential to know the structure of the transport market. A simple model which can be employed in studying the components and functioning of rural transportation is that of supply-and-demand shown in Figure 1.

Demand is formed by the mobility requirements of travellers, and supply by the total possibilities with which to meet these requirements. The achievement of equilibrium between the two is affected by restrictions

imposed by society, for example available financial resources and the political interest of the ruling elite. The degree to which the transportation demand is met is determined partly by societal values and partly by economic valuation (le Clercq, 1985).

There are essentially two "model families" (personal communications with Professor Paul Baron, University of Dortmund). They are:

- algorithms relating transport to land use characteristics i.e. aggregated models or land use models; and
- algorithms relating transport to behavioural characteristics i.e. disaggregated models or behavioural models.

These so-called demand models are organised into a sequence of:

1. trip generation which forecast the number of daily trip production and trip attraction for each zone of the study area, according to trip purpose;
2. (spatial) trip distribution which forecasts travel flow between each pair of zones;
3. modal split/choice which forecast the apportionment of trips among transportation modes for each pair of zone; and
4. route choice/assignment which forecasts the routes traversed between each pair of zones according to transportation mode.

These demand models have been developed in an effort to predict future transport demand as a basis for long term planning. The aggregated/land-use models are imbued with the search for generalisations that characterise neoclassical approaches. They are "aggregated" because land use data are not differentiated. Thus residents and employees of a given zone were regarded only in terms of total number and not "disaggregated" in terms of demographic and/or socio-economic attributes, (e.g. sex, social status, income). In the course of time, this was partly remedied, but the term aggregated remained valid since other zone-specific data (e.g. area size, number of registered vehicles, number of work places) were not subdivided into, for instance, residential/commercial land, motorcycles/passenger cars/trucks, blue/white collar work opportunities.

Aggregated/Land Use Models

Trip Generation. A trip-generation model links land

use to travel demand. The purpose of the model is to determine the number of trip ends per day originating and/or ending in a given zone (region, country, urban district, block). Multiple linear regression is normally used with registered traffic volumes being the dependent and land use data the independent variables. Besides multiple linear regression models for trip generation, other algorithms were developed for both urban and regional passenger traffic (non-additive/considering intra-zonal trips/taking into account accessibility of opportunities and the like). In other words, models are developed solely for prediction and evaluation purposes.

EXAMPLE 1: APPLYING THE LINEAR REGRESSION TECHNIQUE

In a typical linear regression algorithm, "weight" would be assigned to each of the independent variables studied (e.g. $a * C_1$, $b * C_2, \dots$), the value of each weight expressing the importance of the variable with respect to trip generation.

If C_1 were the number of residents in the village, and $a = 0.9$, this would mean that trips made by residents have a large influence on the trips originating or ending in that village. Another explanation is that the residents of the village are highly mobile (90% of them were identified as being trip makers).

Similarly, if C_2 were the number of bicycles, and $b = 0.35$, only 35% of the bicycles were used. In effect this interpretation of the weights gives them the meaning of intrinsic "behaviour indicators". This is important in that, behaviour changes over time, the weights should also be changed as a consequence. But since there is no behavioural theory, this is not possible unless there are time-series analyses of the interrelationship between, say, general socio-economic development and mobility which permit at least educated guesses.

Spatial Trip Distribution. Trip distribution is a process whereby trip production or origins are assigned specific destinations. The results of the trip-distribution model are stated in terms of the origin-destination flows. The most widely applied trip-distribution model is the gravity model (Papageorgiou, 1991). The gravity model

may be defined as follows:

$$T_{ij} = \frac{P_i A_j F_{ij}}{\sum_n A_j F_{ij}}$$

$$\sum_i T_{ij} = 1$$

where F_{ij} is a friction factor or spatial impedance (distance, travel time, cost) which expresses the relationship between trip frequency and growing deterrence, i.e. the reaction of trip makers to increasing efforts to travel between zone i and zone j --a formal expression of behaviour.

The "gravity function" is still widely used although it is essentially mechanistic and reflects behaviour only intrinsically through the value of F_{ij} . Also, F_{ij} is normally a mix of deterrence values of public and private transport modes (aggregation) unless separate algorithms are used--a question of available funds.

Two other models have been used to forecast trip distribution: competing-opportunities model and the intervening-opportunities model. In the competing opportunities model, potential trip ends are identified within selected isochrones. Each zone within each isochrone "competes" for a given origin with all other belonging to the same isochrone or lying closer to it. Calibration of the model is by trial and error (i.e. redefinition of isochrones). In the intervening-opportunity model, trip end zones are arranged by growing distance from i . The assumption embodied in this model is that the probability that a trip originating in zone i will terminate in zone j is proportional to the number of trip destinations or trip attractions "intervening" between the two zones. Calibration again is by trial and error (e.g. modification of distance ranking). In both models, the algorithms yield a probability that a trip originating in zone i will end in the zone j considered. It is also assumed that trip makers will travel on the shortest route between i and j , and zones will be the more attractive the closer they are to the respective trip origin.

Modal Split/Choice. A modal-choice model forecasts the apportionment of trips among alternative transport modes, such as walking, cycling, *matatu*, bus or train. The total number of trips between zone i and zone j may be viewed as a market or demand for transportation. If it is possible to make the trip from i to j by more than one mode of transportation, the various

alternative modes compete for a share of the market. Determining modal choice is therefore, fundamentally a matter of determining human preference and choice when it is faced with competing alternatives.

An individual's preference for a given transportation mode for a given trip is thought to be influenced by two type of factors: those that characterise the utility of the mode itself, such as transit time, cost, comfort, convenience and status value; and those that characterise the individual making the choice such as age, income, social status. Modal-choice models seek to determine a subset of these mode attributes and personal attributes on which reliable forecasts of the traveller's choice of mode can be based.

EXAMPLE 2: COMPARISON OF SYSTEM CHARACTERISTICS OF PRIVATE AND PUBLIC TRANSPORT MODES USING DOOR-TO-DOOR TRAVEL TIMES AND COSTS/EXPENDITURES

Door-to-door travel times include:

- for travel by car, time used to walk to vehicle, travel time between starting point and parking place close to destination; and
- for travel by public transport, time used to walk to boarding stop, average waiting time for service, travel time by *matatu* or bus (including transfer delay if applicable), time used to walk from unboarding stop to destination.

Cost/expenditures include:

- for travel by car, expense for fuel and lubricants, parking fee, if applicable.
- for travel by public transport, fares.

Trip Assignment. A trip-assignment model specifically serves to forecast the specific route or routes taken by travellers between each pair of origin and destination zone. [de la Barna (1989) notes that trip assignment is the process by which trip matrices by mode and user type T_{ijnk} are transformed into the number of trips that use each link of the transport network, T^{nl}]. In this sense, trips T_{ij} are "assigned" to one or more links of the transportation network that connects zone i and zone j . Assignments, typically, are made on the basis of minimum travel time or travel cost. The assumption here (as in opportunity models for spatial distribution and in modal choice) that trip makers prefer the "best" (i.e. the shortest) link (route) between i and j .

Trips using each alternative transportation mode are assigned separately, using the appropriate transportation network.

Traffic assignment amounts to determining the route or path through a transportation network graph for each trip in the trip table such that the total transportation cost for all trips is minimised. If average travel time principle (i.e. the time actually experienced by individual users) is assumed to prevail, the method is a user-optimised assignment. If, on the other hand, marginal travel time (i.e. the increase in the aggregate travel time when one new user enters the traffic stream) prevails, the method is system-optimised assignment (de la Barra, 1989).

In the past, it was common practice to primarily adapt the road network to (unlimited) expected car travel demand to the detriment of the public transport and non-motorised modes. While this may have been supported by the results of model application, these were again, nothing more than inputs into the subsequent planning and decision-making processes. On the other hand, modelling had, in the course of time, turned into an esoteric playground of specialists who had no or little knowledge of planning issues. The same seems to apply to the research community presently involved in the design of transport management systems.

Critique of Land Use Models

The neoclassical approach exemplified in land use models suggests that the explanation of spatial patterns can be found from within the patterns themselves. Such an approach has been criticised for lacking real explanatory power (Healey and Ilbery, 1990). To overcome this problem, the effects of policy and socio-economic factors that define the institutional environment of transport users must be carefully analysed. This is particularly important because it is almost impossible to derive explanations from just within the descriptions themselves. The processes creating spatial variations in land uses –transportation being a major one– are both internal and external to the actual patterns.

The assumptions of “economic man” –that all individuals are perfectly rational and will always choose the options that maximise their utilities, and that all individuals possess the same and complete knowledge, seem to be inconsistent with individual motives and behaviour in the real world. Individuals tend to have part and not complete information. They

also tend to take many decisions based on economic and non-economic motives. Despite this weakness, the land use models take full advantage of consumer analysis and thus enjoy a sound theoretical basis. Their powerful abstraction is centred around the analysis of individuals, classified as either consumers or suppliers, and offers useful theoretical insight for understanding behaviour. But it tends to have very little empirical content. There are three possible reasons for this. (i) the restrictions imposed by use of linear or loglinear techniques (ii) the treatment of space as a continuous variable that makes it impossible to represent the variety and richness of the urban and regional geography and (iii) the practical difficulty of modelling individual behaviour of households or firms or landowners due to their large numbers. Other specific criticisms of the neoclassical approach and the land use models relate to their tendency to ignore the importance of history, their apparent independence of cultural and behavioural reality and their mathematical tradition of continuous formulation, particularly in the way in which they treat space (de la Barra, 1989).

Disaggregated/Behavioural Models

Failure of the neoclassical approach, together with changes in the real world that seemed to defy the perfect competition thesis, led to the adoption of behavioural approaches in the 1970s (Healey and Ilbery, 1990). Backed by inductive reasoning, behaviouralists considered the individual to be the main motive force in economic affairs. Behaviour was inductively investigated in an attempt to generalise. But unlike its neoclassical counterpart which was based on an idealized view of behaviour, behavioural approaches were centred on a wider range of variables including motives, values, preferences, perceptions and opinions.

The basic philosophy of behavioural models is that all individuals in a specific society fulfil specific roles. These manifest themselves in specific activities. Because there is division of labour, the majority of activities require trips. Trip pattern, in turn, depends on the spatial distribution of trip ends, the quality of the transport system, and the socio-economic status of the trip makers. As regards the roles, these can generally be attributed to three elementary functions: work and education, procuring goods and services, and recreation. However, depending on their socio-economic and/or demographic status, individuals are subject to social obligations, be it within the household or at work/school, and they have to respect certain time and financial budget limitations. They may also suffer

from a lack of information as regards the existence of adequate opportunities or the available transport supply.

While these are "factual constraints", there may also be personal idiosyncrasies, for instance prejudices which result in an a priori rejection of transport alternatives or an unwillingness to digest information of any nature. In other words, it is a combination of a large number of factors which determine transport behaviour in a given social, economic and technical environment.

Trip Generation. From an academic point of view, the analysis of trip-making pattern must therefore take account of:

- the inherent factors affecting day-to-day mobility, i.e. all factual and personal constraints; and
- the decision-making behaviour of individuals under prevailing circumstances (the general assumption being that these try to maximise profits and minimise efforts).

Spatial Trip Distribution In theory, it would be possible to combine the analysis of trip generation with that of trip distribution. This, however, would increase the number of homogeneous groups, and render the modelling approach inoperational both in terms of statistical basic volumes and data processing. Instead, use can be made of the gravity model or Monte Carlo Simulation. In Monte Carlo Simulation, trip chains and lengths are determined from empirical data and arbitrarily assigned to individual trip makers according to relative frequency. Sample results are tested against observed trip distribution and projected for total number of residents and commuters.

EXAMPLE 3: DATA PROCESSING IN A DISAGGREGATED MODEL

Identify possible "homogeneous demographic/ socio-economic groups of residents (e.g. male/ female, motorists/cyclists, pupils of primary/ secondary schools);

F analyse each group's trip making pattern, say number of trips at a given time of day;

F test for statistically significant relationships (requires elaborate statistical evaluation in order to arrive at "aggregates");

F if tests are positive, it is possible to determine the probability that members of various homogeneous groups make a trip at a given time of day;

F to formally reproduce trip patterns, multiply probabilities with the number of group members; and

F verify results by evaluating information obtained from household questionnaire.

Modal Split: Approaches include "classical" modal split models, Monte Carlo simulation or multinomial choice models. The Monte Carlo simulation is similar to simulation of trip distribution. It involves evaluation of empirical data as to which modes along trip chains (automobile, motorcycle, bicycle, foot, public transport) including mode changes, for example pedestrian return as car passenger, and arbitrary

assignment to individual trip makers with calibration as before.

In the case of multinomial models, these were first developed in the US as "profit maximisation" or "effort minimisation" models.

Out of a number of given (independent) alternatives, individuals choose the option that causes the comparatively lowest effort in terms of costs, time, or a combination thereof. The approach uses empirical data to relate modal choice behaviour of selected socio-economic groups to system characteristics. Mostly used in the Multinomial Logit Model, Multinomial Probit Model and Dogit Model.

Critique of Behavioural Models

In as much as behaviouralism provides an alternative perspective useful in transportation studies, it has not lived up to expectation with regard to explanation. Whereas it has highlighted the need to incorporate the motives of travellers into explanations of the changing mode/route patterns, it has failed to solve the problem of poor explanation associated with neoclassical approaches and related land use models. In focusing on how decisions are made as opposed to why they are made, behaviouralism has substituted descriptions for explanation thus becoming more or less a variant of neoclassical approaches.

Also, there could be a danger of placing too much emphasis on the attitudes of travellers and too little on behaviour. Attitudes and behaviour are often erroneously assumed to be synonymous (Bunting and

Guelke, 1979). Moreover, behavioural approaches are considerably varied in content and there is no generally accepted methodology. This has hindered the search for generalisations and the identification of strong empirical regularities in behaviour. Consequently, the development of theory has been slow (Healy and Ilbery 1990). Another criticism is that behaviouralism places a lot of emphasis on choice, taking much of the material world as given and examines how an individual operates within it.

While there are ways to analyse the factors affecting mobility (for example by means of interactive interviews), transforming the results into formal mathematical models which might be incorporated into a consistent set of algorithms presents difficulties because of the tendency of modelling approaches to ignore the importance of history; the apparent independence of cultural and behavioural reality; and the mathematical tradition of continuous formulation, of space in particular (de la Barra, 1989).

As a consequence, behavioural demand models restrict themselves to linking observed trip patterns to the demographic and/or socio-economic status of groups of individuals. A first attempt was made by differentiating the residents of housing areas into various categories, such as male and female; self-employed, employed and unemployed; school children, and so on. The analysis of mobility patterns of selected demographic/socio-economic categories yields valuable information regards actual participation in social and economic activities in different locations. With respect to forecasting, behavioural models pose considerable problems. These are due to:

- the lack of a theory of transport behaviour;
- possible changes must be "guesstimates" for various groups instead of the population as a whole;
- it is uncertain whether members of a homogenous group identified in the analysis will adapt the behaviour patterns of categories into which they will eventually transgress, or whether they will form a new category. For example, how will a student behave once she/he has graduated and become a professional?
- there is a need to forecast the future number of individuals belonging to each group; and
- aggregated behavioural categories must eventually be reassigned to spatially disaggregated zones. This applies when a single zone does not contain sufficient number of residents to allow disaggregation into homogeneous groups.

4. CONCLUSION

The models described above are merely instruments to obtain quantitative information which can then be used as input in transport planning. By themselves, the models are unbiased. This is provided that they do not neglect the crucial elements of reality. Unfortunately, that is the case when it comes to economic and social analysis and forecasting. This does not mean that models must be a total replica of the real. That is, in fact, impossible. But they must be so designed as to be both sufficiently realistic and operational. The transport planner is obliged, therefore, to determine the kind of data that he or she is going to collect and from what sources. Although theoretically "better", behavioural models have severe limitations when it comes to long-term forecasting. Yet, behaviour analysis is an excellent tool to discuss underlying reasons for a number of phenomena, particularly with respect to trip generation.

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RURAL INFRASTRUCTURE:

WHAT ROLE FOR WOMEN? SOME EXAMPLES FROM KENYA AND TANZANIA

by Cecilia Kinuthia Njenga

Abstract

This paper looks at the role of women in rural infrastructure drawing examples from Kenya and Tanzania. Rural infrastructure provides employment and income for communities but women's participation differs from region to region. With the use of case studies, this paper examines the extent of women's participation in the Minor Roads Program (MRP) in Makeni, Kenya and the Rural Roads Maintenance Project (RRM) in Tanga and Mbeya, Tanzania. A key question that this paper attempts to address is what effect does working for rural infrastructure programmes have on the lives and families of the participating women.

1. INTRODUCTION

Very little is known about the benefits women derive from participation in road infrastructure programmes and this is limited to their participation in the workforce as casual labourers. Recent studies indicate that rural infrastructure contributes to women's lives and those of their families, particularly those from marginal regions or have few land assets and/or are economically worse-off. In Kenya and Tanzania, some projects have reached levels of about 50-80 percent female participation. Roadwork has been very beneficial for women who have no other way to earn cash. Road work acts as a social net by employing women who cannot generate enough cash from their farms to buy clothing, sugar, cooking oil and other essential commodities.

Generally, poor women are represented among maintenance workers who enjoy the benefits of additional income in ways similar to their male colleagues.

income which is spent on food, clothing and various household needs. Other benefits include improved diet and personal autonomy.

The potential impacts of road work on many other aspects of women's lives have not been investigated. For example, if the skills acquired through roadwork are transferred to other areas and help women obtain additional employment, or whether women obtain better knowledge of transport aids and services through their involvement in road work..

Recent studies also indicate that road work availability can change the productivity of women's labour and increase the returns to maintenance investments by:-

- increasing women's opportunities for new jobs and income generating activities;
- reducing the discrimination women confront with respect to participation in different aspects of the economy;
- improving their working conditions, or reducing their work and/or transport burdens;

This applies particularly;

- if the road availability goes hand in hand with transport availability/affordability;
- if women obtain equal access to the means and services of transport; and
- if women's productivity and/or housework burden does not increase as a result of road availability.

When these conditions are met, roads should make it possible for women to:-

Access to road work contributes to household - increase their productivity;

- receive higher farm-gate prices for their produce;
- market a larger portion of the harvest; and
- increase their access to alternative income earning possibilities.

Moreover, road improvement increases women's access to social services. (Kudat 1980, 1981; MOTC 1984) Women obtain greater access to health clinics, adult literacy centres, nursery schools, agricultural demonstration centres.

Road access availability increases the access of mobile clinics to rural communities which reduces the need for lengthy and expensive trips to district hospitals and facilitates the access of women and children to health services.

Improved rural infrastructure also means increased women's productivity through easier access to extension services, fertilizers, credits and new farm technologies. The rate of adoption of new farm technologies is intensified near roads and the women of these households were the most immediate targets for such benefits.

Road availability affects women as transporters, domestic workers, marketers, communal workers, other wage-employees, farmers or entrepreneurs. How individual women benefit from this depends on the changes which occur in their micro-household and those which take place in their regional environment.

2 THE MINOR ROADS PROGRAMME AND THE RURAL ACCESS ROADS PROGRAMME - An Overview

Kenya's Minor Roads Programme's (started in 1988) major objective is to set up a labour-based system for the improvement (rehabilitation) and maintenance of roads built under the Rural Access Roads Programme (1976-1988), so called E and D roads. During both programmes the higher objective is rural development and creation of employment. The percentage of women participating in the programme has been increasing over time.

As more women become aware of the employment opportunities and as men migrate to cities in search

of better jobs, more women have entered the programme. More recently, the dramatic increase in wages from Kshs. 50 to Kshs 136, resulted in an increased competition for available jobs.

The Rural Roads Maintenance Project(RRM) of Tanzania was established in 1979 in Mbeya and Tanga regions.

The primary objective of RRM as reviewed in 1984 is to provide sustainable institutional support to the road sector in Tanzania.

The overall goal of the project is to improve and increase access to regional facilities and agricultural areas.

The project promotes labour-based roadworks. Promoting increased female participation is one of the ten outputs the project is expected to achieve.

3. DESCRIPTION OF STUDY AREA

a) Makueni District

Makueni District which was recently carved out of Machakos District is one of the ten districts of Eastern Province. It borders Kajiado District to the west, Taita Taveta to the south east, Kitui to the east and Machakos District to the north. The district has an area of approximately 7,263 Km² ranging from 100 km wide in the north and less than 20 km wide in the south. It extends some 190 km from north west to the south east. Rainfall in the District is generally scarce and agricultural productivity low.

There are seven (7) divisions in the district, namely Wote, Kilome, Kibwezi, Mbooni, Kaiti, Matiliku and Muala. The Minor Roads Programme(MRP) and Rural Access Roads Programme(RARP) is operational only in Ngwata (Kibwezi), Mbumbuni and Tawa (Mbooni and Kilome).

The Minor Roads Programme was first introduced in Makueni in 1981. When the announcement was made 100 turned up for the recruitment.

Of the hundred only 15 were hired at the construction site (using the secret ballot system). Today there are over 100 people employed on a

regular basis on road work.

b) Mbeya Region

Mbeya region is located in southwestern Tanzania. The region is generally fertile and average maize yields produce 20-25 bags per acre. Agriculture is the mainstay of the region. The region is divided into six administrative districts: Mbozi, Ileje, Mbeya, Rungwe, Chunya and Kyela. The population of Mbeya is approximately 1.5 million and the average household has 5 persons. The annual growth rate is 3.1 percent.

Mbeya is located in the southern highlands and the regions topography is generally hilly and mountainous. However, valleys and lowland areas like the Usangu Plains, are located between uplands. Due to their low altitude and available water released from the surrounding mountains, farmers in the areas are able to grow rice. The region is generally fertile. Coffee is grown by smallholders in the cooler areas of the region and large tea estates are found in the cool rainy uplands of Rungwe

District. In the cooler upland areas, many farmers keep livestock.

c) Tanga Region

Tanga Region is located in the northeastern corner of Tanzania. The region is divided into six administrative districts: Handeni, Korogwe, Lushoto, Muheza, Pangani, and Tanga. Tanga has a population of approximately 1.4 million and an average household contains five people. The annual population growth rate is 2.7 per cent.

Tanga region contains a variety of heterogeneous land forms and climatic zones. The coastal plain extends westward from the Indian Ocean for 30 Km into Muheza District, where it meets some rolling hills. Although this area has some good agricultural land, it is mainly controlled by sisal estates.

Consequently, some villages cannot expand their farmland and farmers must obtain fields outside their villages or search for alternative ways to generate income. Major food crops are maize, cassava, beans,

banana's and some rice. Unlike in Mbeya, rainfall is less dependable, soils are not as fertile, agriculture is less productive, and in many areas people must supplement their farming activities with wage labour, if it is available. RRM is most active in the triangle between Tanga, Pangani, and Muheza.

4. METHODOLOGY OF DATA COLLECTION IN THE STUDY AREAS

Information was collected using participatory methodologies and gender analysis. The data collection was guided by a checklist with a set of questions on key issues (including recruitment procedures, impact of road work on women and men, working conditions, etc). Questionnaires were also used to collect additional individual information. The participatory approach used to collect data stimulated open discussion and allowed the group to reflect on the issues. Mapping, gender analysis, task analysis, activity profiles and transect walks were some of the methods used to collect information in addition to in-depth interviews and focus groups discussions.

A thorough literature review was carried out on relevant reports, studies documents and publications. Employees muster rolls and payroll sheets were reviewed to determine the number of women and men employed.

5 WOMEN'S PARTICIPATION IN ROADWORK

Women contribute to maintaining the roads in through their employment mainly as casual labourers. Very few are employed as administrators, fore persons, head persons or drivers. Female participation as casual labourers in roadwork in Makueni District is generally high and may go as high as 70% in some months. The average participation of women as casual labourers during the 1995/96 fiscal year was 33.81%.

Compared to other Districts in Kenya, this is generally a high participation of women in road work.

Despite the high participation of women in casual

labour, there is only one headwoman and two women who occasionally work as headwomen. The high percentage of female participation of women in roadwork is attributed to the general arid and semi-arid nature of the district and thus the low agricultural productivity forcing women to seek employment on road works. Majority of those working on the road are generally poor with little or no land or assets and are subsistence farmers who consume most of what they grow. Although the wages are generally low in the MRP, most workers are fairly satisfied as the wages meet some of their basic needs.

In Mbeya, fewer women participate because returns from agriculture are greater than in Tanga and the wages paid by RRM do not compare favourably with returns gained from farming or working as a farm labourer during the main agricultural season. The Tanga-Pangani Road has 54 percent female and the Pangani-Muheza road has 49 percent female participation.

6. RECRUITMENT PROCEDURES AND REQUIREMENTS

In Makueni District announcements for job opportunities are made in 4 main ways:-

- through the DCs office
- chiefs camp offices
- most public places such as markets, churches, etc.
- through baraza's

Advertisements are made through local people in the district, through chief's notice boards and through chief's barazas. The sub-chief makes an announcement in his area or in a baraza near the place the road will be constructed.

Advertisements are also made through the MOPWH or the employment office.

He prepares the advert and pins them in local markets and towns or the DCs office in the personnel section.

Announcements for road work however, are mainly

made in one forum - the chief barazas.

Women rarely attend chief barazas and therefore chances for them to know about employment opportunities are very low.

Even after women have received information concerning MRP jobs, some of the requirements within the recruitment procedures have excluded some women.

Potential employees are required to present their Identity cards. The identity cards indicate the age of the potential worker, district and division of origin and clan. Those with no identity cards are not considered. Those coming from far away are also not considered as the labour-based programmes focuses on local labour.

In new areas recruitment is mainly done through secret ballot with equal preference being given to both men and women. Recruitment by secret ballot also avoids favouritism if more people than needed turn up.

In the areas where road work is going on, prior experience in road work is a required for potential workers. This was said to reduce time needed to train new people on the job and to increase efficiency. Those with no prior experience are therefore left out in most cases. It is only when a person with prior experience is not available and more people than needed turn up when again recruitment is done through secret ballot.

The final decision on who should be employed is made by the road construction team which constitutes the DMIE, Overseer and the chief.

Very few women have been recruited in senior positions. This is due to the limited educational background that women had.

Most women were primary school leavers. It was felt that several women had the potential of been trained and equipped with the necessary skills to take up such positions. Most of the women in this sites were casual labourers.

In Makueni District training for casual labourers is done on-the-job at the work site. No special training was required by those wanting to work on the road site.

Other requirements for recruiting casual labourers are:

- a) Physical fitness
- b) Close proximity to work place
- c) Personal interest in work

In Mbeya, female representativeness from the office of community development and the UWT have assisted RRM to recruit women. Recruiter have stressed two alien ideas to increase women's participation in road work.

- a) that roads can be rehabilitated manually and
- b) women can fully participate

Table 1: Makueni District Labour Summary - 1995 to 1996

Month	Men	Women	Total	Total Percentage of Women
June/July	21	10	31	32.25
July /Aug	18	18	55	32.72
Aug/Sept	42	42	148	28.37
Sept/Oct	68	68	207	32.85
Oct/Nov	71	71	219	32.42
Nov/Dec	83	83	233	35.62
Dec/Jan	68	68	170	40.00
Jan/Feb	66	66	205	32.19
Feb/Mar	80	80	227	35.24
Mar/Apr	71	71	239	29.70
Apr/May	65	65	204	31.86
May/Jun	66	66	156	42.30
Total	1386	708	2096	33.81

Source: Monthly District labour summaries, 1995/96. Machakos DMIE office

These concepts are first explained to the village leadership, then the leaders with assistance from Community development and UWT explain it to their constituents.

In Ileje, which is representative of areas where people have few opportunities to make money, word of mouth recruitment proved to be successful. In Mbozi where people have more options, the recruitment of women was enhanced by involving UWT and Community Development.

In Ileje, applications for work exceeds the number of vacancies. This infers that word of mouth recruitment may screen out people who do not know that work is available. In order to eliminate favouritism in recruiting, senior RRM staff should participate directly in the recruitment process. Lottery should also be applied where more people apply for jobs than are available.

In Mbeya, the foreman explained to the men exactly what their wives would be doing on the road. In this way, more women were able to participate in road work.

Recruiting unskilled women does not seem to be a problem in any of the study areas, but finding skilled women to become inspectors and foremen is difficult. Skilled workers are difficult to recruit due to the limited pool of female candidates and the better wages paid by competing sectors.

7. CHARACTERISTICS OF WOMEN WORKING ON THE ROAD

Most of the women doing road work were generally poor, with little or no land (ranging from 2 - 4 acres), few livestock (mainly goats, poultry) and grew food crops for subsistence only.

In Mbeya and Tanga, 75 per cent of the participating women are unmarried.

In Tanga, 41 per cent of the participants were divorced or widowed, but in Mbeya the figure was 20 per cent.

In Tanga, 47 per cent of the participants were over 30 years old while in Mbeya only 20 per cent were in this category.

In Makueni, 60 per cent of those interviewed were either single with children, widowed or separated.

Makueni is said to have a very high male out-migration rate. Most men migrate to Machakos Town, Mombasa or Nairobi in search for better employment opportunities.

It was difficult to get the right ages of the women, although records at the overseer's office indicate that most of the women are aged between 32 to 55 years. The overseer prefer to employ older people, both men and women (normally over 30 years) as opposed to younger people.

Several reasons have been given for hiring older people. That:

- a) older people are more stable (younger people often abandon roadwork for better employment opportunities);
- b) they are easier to supervise;

Majority of the women interviewed had no prior experience in wage employment. Thus roadwork has given women an opportunity to work for an income.

8. TASKS AND RESPONSIBILITY OF FEMALE WORKERS

In Makueni, the high participation of women in MRP work can be attributed to the gender sensitivity of the DMIE and overseer.

The Main reason given for employing women in road

work are:

- a) Women work harder than men because traditionally they have always worked harder and more than men
- b) most women don't take alcohol, therefore they are always punctual and they finish their work on time.
- c) Women are not cunning like men. They are good workers when given equal opportunities to men
- d) Women concentrate better than men.
- e) Women are generally obedient to the instructions given to them

Participation of women in routine maintenance activities is higher as compared to periodic maintenance. The higher participation of women in Routine Maintenance carried is expected as the tasks are repetitive, intermittent and carried out at a fixed location. Generally, there is no reliable evidence of seasonal variability in female availability throughout the year. In Makueni, the beginning of the Fiscal year June - August records a lower recruitment rate. This is because this is when budgets are approved and resources allocated for different economic sectors nationally.

In Ngwata, Makueni the low participation of women was attributed to:

- a) low population of women in the area
- b) time spent in collecting firewood and
- c) water due to scarcity.

Ngwata is generally a drier area as compared to Tawa and Mbumbuni.

Means of transport was not a problem as the roadwork was located near the villages so people were able to walk to the site. All the casual labourers were found to live near the site. The person coming from very far was living 2 to his/her workplace. see map.

There is no difference in the distribution of tasks amongst women and men working on the road. Both

men and women do the same tasks such as rehabilitation of roads, the cleaning of culverts, inlets and out falls; clearing side drains, etc. Where filling of potholes and ruts in carriage ways was needed then men dug the gravel and women ferried the gravel to the site. The only difficulty experienced by women was in loading the gravel so this work was done by men.

All decisions on what work was to be done by men and what work was to be done by women and men was made by the overseer and the supervisor.

The table below presents the results of a debate conducted at a workshop on the motion that:

"women are better workers than men".

<p style="text-align: center;">DEBATE</p> <p style="text-align: center;">WOMEN ARE BETTER WORKERS THAN MEN</p> <p style="text-align: center;">A debate session conducted on whether women are better workers than men during a focus group discussion showed the following results</p>	
<p>FOR</p> <p>a) Women are more obedient</p> <p>b) Women are not cunning</p> <p>c) They finish work quickly to attend to other jobs in the house</p> <p>d) They are good workers when given equal time and opportunities</p> <p>e) They are good workers when they want to prove they are able than men</p> <p>f) They are good workers because they are responsible and punctual</p> <p>g) They also determine the wages due to them</p>	<p>AGAINST</p> <p>a) In travelling women can't do heavy jobs like loading and unloading</p> <p>b) Sometimes women have several excuses concerning their households such as children being sick</p> <p>c) Men always turn up for work earlier than women</p> <p>d) Men are great long term planners</p> <p>e) Women show low capacity output than men at particular times</p> <p>f) Women are very busy in the morning with household chores therefore they are not able to work on the roads</p> <p>g) It is assumed that minor roads work is not for women</p> <p>h) Men have a higher capacity to do heavy duty work</p> <p>i) men can work for long hours, women cannot</p> <p>j) Women need frequent payment (more than men) due to many children they have</p>

9. EFFECTS OF ROADWORK ON HOUSEHOLD LABOUR DIVISION AND WORKLOAD

Although road work is an additional job to the already long working day for the women, it contributes to the day-to-day needs of the household - school-fees, clothing and food. Women road workers perform all the other household chores which include cleaning the house, cooking, feeding the children, washing clothes and the children, collecting firewood and water. Thus a woman working on the road works for a total of 17 hours a day. She wakes up at 5.00am and goes to bed at 10.00 pm. In some cases, a house help or grandmother take care of the younger ones during the day when women go for work. For men, roadwork is a welcome job as it fills the otherwise restful day. Below are activity profiles for men and women on a road working day and a non working day on the road.

10. AN AVERAGE WORKING DAY FOR A WOMAN WITHOUT ROAD WORK

5.00am. wakes up,sweeps the floor
5.30am. milks the cow
6.00am. makes the tea
6.30am. baths the children and prepares them for school;serves her husband and the children with tea.
9.30am. washes the dishes and puts the food on the "jiko".
10.00am.goes to the "shamba".
12.30pm.returns back to the house.
1.00pm. serves everybody with food
2.30pm. washes the dishes
4.00pm. looks for firewood,fetches water
5.00pm. puts the food on the "jiko"
6.30pm. baths the children
8.30pm. serves everyone in the household with food.
10.00pm.washes the dishes and goes to bed

An Average Working Day for a woman when working on the road

5.00am. wakes up
5.30am. sweeps the house and the surrounding compound.
5.45am. milks the cow.
6.00am. makes tea
6.15am. baths the children
6.30am. serve she husband and children with tea
7.00am. puts the food on the "jiko" and washes the kitchen utensils.
8.00am. leaves for work at the road site
3.30pm. comes back from work at the road site
4.00pm. baths, eats food, breast feeds the baby.
5.00pm. looks for firewood and fetches water
6.00pm. cooks the evening meal
7. 30pm.washes the children and gives them food
9.00pm. washes the dishes and goes to be

An average day for a man without road work

6.00am. wakes up and drinks tea
7.30am. shaves his beard
7.30am. goes to the "shamba"
1.00pm. comes back from the"shamba" for lunch
2.00pm. goes back to the"shamba"
5.00pm. leaves the"shamba"for home;takes tea and rests.

An average day for a man when working on the road

6.00am. wakes up;shaves his beard.
7.00am. drinks tea
8.00am. goes to work on the road site
3.30pm. comes back home from work,baths and eats food.
6.00pm. grazes the cows and goats, rests.

From the activity profile it is clear that women do more work than men. After coming home from the work site they continue with other household tasks. Women do up to 70% of the work in and outside the house. The fewer working hours - 8.00 am to 3.30pm were seen to create adequate time for the other households chores. Moreover, those working on road maintenance programme work only 3 days a week, while those working on regravelling work 5 days a week. (However, some workers recommended that the working days for the working on routine maintenance should be increased to 5 so that they could earn 5 day wages per week).

11. WAGE LEVELS AND SOCIO-ECONOMIC IMPACT

In Makueni, men and women working as casual labourers earn the same amount of wages that is 132/- per day. Skilled labourers earn Ksh 168 and watchmen earn Ksh 140. There is no difference in the wages earned by women and those earned by men. They receive their wages at the end of the month. The casual labourers go to the payment camps to collect their wages. So far no major problems have been experienced as far as paying the wages on time is concerned. They are usually made on time and the amount specified. In a few occasions where there have been some delays, the casual labourers are informed in time so that they can make some alternative arrangements. It was reported that some schools accept the employment letters as security during lean months - as security to be paid in a few months time when money is available.

Although there are other income generating opportunities available in the District, road work provides competitive wages.

Other income-generating activities such as farm

labourer pays 50/- a day as compared 132/- a day if one worked on the road programme, therefore it is more profitable to work on the roads programme. Women in this area were also found to be selling broken stones.

Casual labourers are allowed to work for a maximum of three months continuously. Thus one can only work for a maximum of nine months in a year taking one month breaks in between.

The money earned is mostly spent on immediate expenditures such as food, school fees, clothes, medicines, buying seeds, etc. The money is spent thus because the wages received are too little to spend on long term expenditures such as house building, trading, buying sewing machines, savings, etc.

The availability of road work in Makueni District has increased opportunities for new jobs and income generating activities. Women's access to income has also played a role in reducing discrimination women confront with respect to access and control over resources. This was evident when a task analysis and gender analysis exercise was conducted. Although the tasks which are traditionally associated with women were mainly carried out by women, men shared some responsibilities. Moreover, traditionally construction work is done by men according to Kamba traditional practices.

12. PERCEIVED BENEFITS BY MEN AND WOMEN FROM ROAD IMPROVEMENTS

Both men and women admit that improved roads contribute positively and negatively to their work. For women, improved roads mean increased access to basic social amenities such as water points, health centres, markets and school.

For men, improved road access means improved access to big business and big money. Some of the

reasons given are listed below:

MEN

Advantages

- They can transport their goods easily when roads are good
- they can transport their cash crops to the market easily and in a short time.
- better roads means better communication- they get better transportation to take their agricultural products to the market
- vehicle damage is also reduced
- improved roads results in quick transportation which gives men more time to do other things.
- men have the advantage of developing their goods, hence better development for their plans.

Disadvantages:-

- better roads results in road accidents
- risks of accidents to drunkard men.
- men will use their time going to town to drink therefore misusing both their time and money.

WOMEN

Advantages:

- Improved roads enables women to get to market places faster therefore they have more time to attend to their domestic tasks.
- easy access to social services such as hospitals, health centres, etc. This is especially beneficial when women are in

labour.

- women can fetch water easily therefore transport costs are lessened.
- they can take their produce to the market centres faster therefore their products don't get rotten.
- daily agricultural products become cheaper. They can therefore use the additional money for other purposes.

Disadvantages

- Improved roads means women travelling to cities to become prostitutes.
- more diseases in the village.

13. PRIORITY AREAS FOR ACTION

1. To improve the road network, which will:
 - increase employment opportunities for women and men
 - reducing women's workload and transport burdens. This applies particularly if the road availability goes hand in hand with transport availability/affordability.
 - increase agricultural productivity thus receiving higher farm-gate prices for produce, market a portion of the harvest, and increase their access to alternative income earning possibilities.
 - increase women's access to social services. It increases the access of mobile clinics to rural communities which reduces the need for lengthy and expensive trips to district hospitals and facilitates the access of women and children to health services.

Road availability also takes a large number of politicians in search of adult votes in rural communities, as a result women acquired greater awareness of local and

<p>national political issues and had more often participated in relevant decisions.</p>	<p>6. Improve Agricultural Production by initiating the following:-</p>
<p>2. Training</p> <ul style="list-style-type: none"> - provide training opportunities for women inroad construction and maintenance skills. The training courses should be broaden compassing all aspects of road construction and maintenance and not only those required for MRP or RRP. - organize gender sensitization seminars for senior staff - organize career talks for schools especially girls schools in Makueni District. 	<ul style="list-style-type: none"> - introducing new varieties of seeds and new types of crops - improving storage facilities - improving pest control - providing advice on management and organizational matters - providing advice on less or known food crops and fruit trees. <p>7. Reduce Women's workload through the following interventions:-</p>
<p>The talks should be addressed by female road engineers.</p>	<ul style="list-style-type: none"> - Provide shallow well construction - Agroforestry - Planting woodlot
<p>3. Skills Development</p> <ul style="list-style-type: none"> - Equip women with basic literacy skills of reading and writing. - Organize business skills for women's groups so that they can operate business effectively. 	<p>8. Social issues</p> <ul style="list-style-type: none"> - The fore persons or supervisors should have basic first aid skills. - First Aid kits should be provided to each site. - Day care centres should be provided for women with young children, at least one at each site.
<p>4. Rotational Fund</p> <ul style="list-style-type: none"> - Introduce a rotational fund which is accessible to men and women who are not recruited for MRP or RRM. 	<p>Any of the above interventions will benefit women. Women's interests must first be identified, however, since it is they who will ultimately implement any projects. In Tanga town, many women have started small businesses. Other women have formed self-help groups contributing some small amount to a common fund.</p>
<p>5. Job Security</p> <ul style="list-style-type: none"> - Find ways of giving longer term contracts as opposed to a maximum of three months temporary employment at a time. 	<p>Each week a member receives a lumpsum on a rotational basis until every member has received a payment. Then the cycle begins again.</p>
<ul style="list-style-type: none"> - Income earned working overtime should not be taxed. - The terms of employment and salary structure should be very clear. 	<p>Working for the RRM in Tanzania or theMRP in Kenya only improves the domestic position of</p>

women marginally. The Governments should therefore support these initiatives if they are to have a meaningful impact to rural communities. If women have access to some income, they will most likely invest it in farm expansion, home improvement, income generation, their children's needs or education. Therefore, investing in women will benefit women, men, their families and the community.

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