

Roads 2000

REPUBLIC OF KENYA

MINISTRY OF PUBLIC
WORKS & HOUSING



Labour Drainage Work

PROGRAMME OBJECTIVE

ROADS 2000 is a programme developed by the Ministry of Public Works and Housing with the following objective:

MAINTENANCE OF THE CLASSIFIED ROAD NETWORK TO AN ECONOMIC LEVEL OF SERVICEABILITY USING LOCAL RESOURCES AND LABOUR BASED METHODS WHEREVER THESE ARE COST EFFECTIVE.



Locally Manufactured Towed Grader.....



able to Rebuild the Road Camber

THE RARP/MRP EXPERIENCE

Labour based road construction and maintenance techniques have been developed in a number of African countries in recent years. Kenya has been at the forefront of these initiatives and many innovative techniques and procedures have originated here. The Kenya Rural Access Roads Programme (RARP), and latterly the Minor Roads Programme (MRP), have demonstrated that the labour based approach to improvement and maintenance of roads is a viable and cheaper alternative to the existing equipment based systems.

From 1974 to 1991 the RARP constructed some 8,000 km of roads in 26 districts with high agricultural potential using labour based methods. These roads are now maintained using labour techniques.

The MRP started in 1986 and developed the RARP methods to improve and maintain selected classified D and E roads. The MRP has improved a further 3,000 km of roads to all weather gravel standard and brought them under full routine maintenance, along with the RARs, using the lengthman system.

ROADS 2000 PILOT PROJECT

In view of the nature and extensive scope of the Roads 2000 initiatives, a Pilot Project was necessary to test the new approach to road maintenance, building on Kenya's extensive and successful experience of labour based methods. A planning, monitoring and evaluation consultant, Intech Associates, assisted the MOPWH in testing the new approach.

A pilot project was designed and set up in two districts, Kericho and South Nyanza. The establishment and management of the pilot district operations and testing was carried out by MOPWH Engineers, Kairigo and Mutuku. The Department of Staff Training and Kisii Training School provided the necessary field training and classroom support for the various categories of pilot project personnel.

The Pilot Project demonstrated that earth and gravel roads can be rapidly brought to a maintainable condition using a combination of labour and tractor rehabilitation methods, and selected labour based spot improvements. The Lengthman system was established on the rehabilitated roads using manpower recruited from the initial workforce.

A total of 700 km of roads of all classifications were brought under network maintenance in little over a year during the Pilot Project. Furthermore nearly 400 km were adopted from the Minor Roads Programme. The heavy towed graders and other towed items for the Pilot Project were built in Kenya demonstrating the potential for developing local manufacturing of intermediate road maintenance equipment.

The Pilot Project proved the effectiveness of the new approach to road maintenance. It has also enabled recommendations to be prepared for the range of supporting institutional, management, manpower, equipment and private sector initiatives, necessary to establish an efficient and sustainable maintenance system on a national basis.



Labour Clearing Existing Drainage System



Traffic able to use Reshaped Roads Shortly after Rain

RATIONALE

Maintenance of the 63,000 km Kenya Classified Road network has been based principally on the use of heavy equipment and a force account (direct labour) approach. Poor maintenance performance and other factors have led to extensive deterioration of the road network. A planning workshop in November 1990 proposed a number of operational and support initiatives with the objective of achieving improved maintenance in a period of approximately 10 years. The adopted Roads 2000 strategy supports a number of the policy options developed under the donor supported Road Maintenance Initiative (RMI).

The Kenya Rural Access Roads Programme (RARP) and the currently ongoing Minor Roads Programme (MRP) have successfully constructed/improved approximately 11,000 km of road to all-weather standard and brought them under effective maintenance over a period of 16 years using low cost, labour based techniques. Roads 2000 calls for a new approach to rapidly bring roads on the rest of the network up to a maintainable standard and place them under effective maintenance with the optimum use of local resources.

It is envisaged that the routine maintenance lengthman system, can be extended to a total of about 40,000 km of unpaved and paved roads. On approximately 11,000 km of the unpaved roads with traffic of more than about 50 vpd, the lengthmen can be supported by tractors and locally fabricated towed graders for maintaining the running surface. Tractor based units could maintain a further approximately 19,000 km of roads in areas of sparse population.

Follow up with spot improvements, and periodic maintenance regravelling where resources allow, will steadily improve the general condition of the network.

The existing heavy equipment fleet will be rationalised and redeployed, initially to non-programme maintenance zones and dedicated road rehabilitation units.

The new lower cost strategy represents a change in focus from the traditional 100% construction/rehabilitation to routine maintenance and selective improvements, and from a project orientated system to a network consideration of maintenance needs.

The new technical and operational approach will need to be supported by a range of other initiatives. These include improved management performance, motivation, manpower rationalisation, training, development of locally made equipment, funding and development of private sector involvement in road maintenance.

These supporting initiatives will be essential to ensure a sustainable road maintenance regime for the Kenya Classified Road Network.



Labour Recruitment



Culvert Excavation for a Spot Improvement



Culvert Rebuilding Work

NATIONAL IMPLEMENTATION

The Pilot Project has laid a solid foundation for the National Implementation of Roads 2000.

The programme will be introduced on a district by district basis until the new maintenance approach is established in all of the 50 districts of Kenya.

A district preparation unit consisting of up to 120 casual workers and 2 tractors (100 hp) and heavy towed graders can partially rehabilitate about 110 km per year and carry out a further 220 km of routine grading. A separate spot improvement unit consisting of 40 labourers and a 60 hp tractor and 2 trailers can carry out spot improvements on approximately 80 km of road per year. The overall costs are also significantly lower than the traditional labour based approach of complete rehabilitation to all weather standard. The costs are also substantially lower than for equipment based methods. The contract lengthmen carry out the routine maintenance on sections of 1.5 - 2.0 km of road on a part-time basis.

Further trials will be carried out to develop an appropriate system for tractor based maintenance in the arid and semi arid areas.

Trials will also be carried out to test labour based and small scale contractor approaches to routine maintenance and spot improvement work. There is significant potential to develop labour and tractor techniques for local contractors, using low-capital, low-risk, and appropriate contract and support arrangements.

Institutional and operational support initiatives continue to develop the environment for effective and sustainable road maintenance.

MOPWH has received considerable support for the development of labour based methods over the years from the International Labour Office (ILO) and the donor community. The following agencies have been involved with the RARP and MRP: CIDA, DANIDA, DGIS, HELVETAS, NORAD, ODA, SDC, SIDA, USAID, WORLD BANK.

The Roads 2000 Pilot Project was supported financially by DANIDA, KfW, SDC and SIDA.

At the January 1994 joint Donor-GoK review meeting for Unpaved Roads, nine donor agencies gave their support for the Roads 2000 strategy for national implementation.

Overall Costs

1993 prices including district overheads and depreciation

Labour and tractor rehabilitation and spot improvement	US\$1,650/km
Lengthman routine maintenance	US\$200/km/year
Routine towed grading	US\$230/km

DIRECT COST COMPONENTS

LABOUR & TRACTOR REHABILITATION



NOTE: 50% of the equipment is made in Kenya

LENGTHMAN ROUTINE MAINTENANCE



Legend

CASUAL LABOUR	EQUIPMENT
STAFF	OTHER COSTS
HANDTOOLS	

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