

Road Asset Management in Bhutan

April 23, 2009



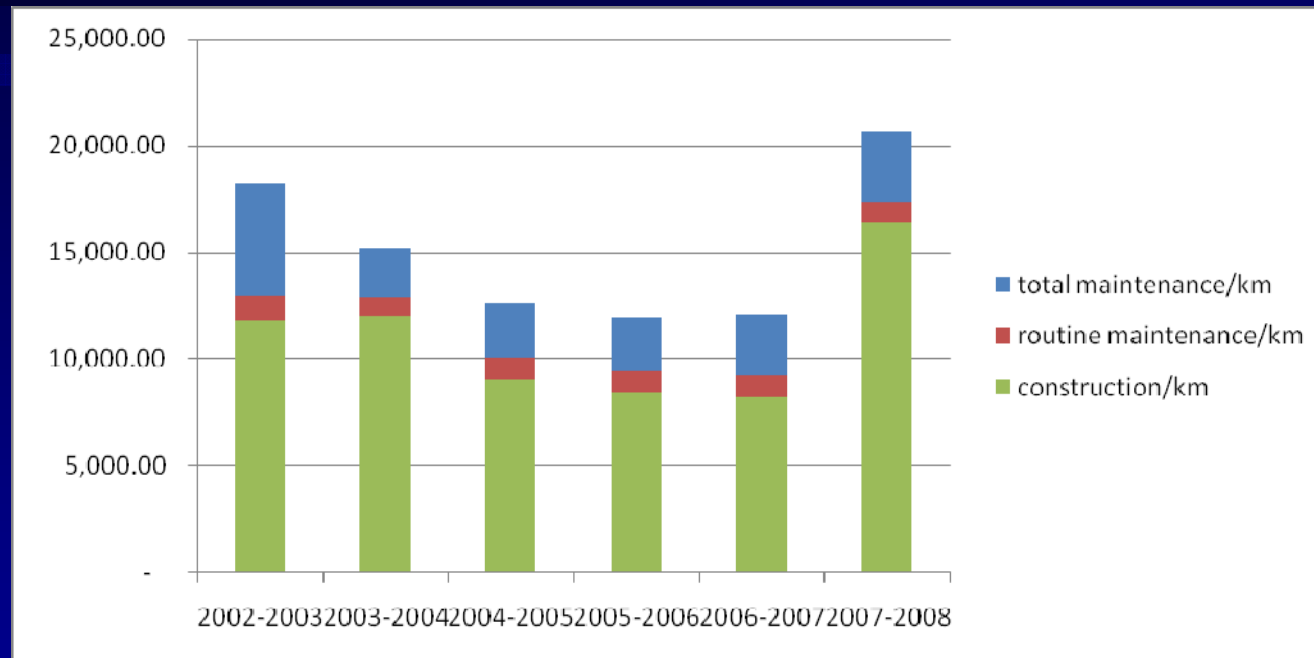
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Challenges Facing The Department of Roads (DOR)

- Difficult terrain with roads exposed to landslides and erosion.
- Inadequate budgets: with funding diverted to support often politically motivated purposes.
- Limited resources: Staff, skill and equipment shortages. Collection of data currently manual labor intensive.
- Complex organisation structure: not supporting maintenance interventions, service orientation and accountability.
- Mature networks: with a significant backlog of required maintenance.
- Increased need for accountability to customers and funding providers.
- Recently adopted form of a parliamentary democracy

Composition of Road Expenditures (\$ per KM)



The road network maintained by DOR consists of 2,451 km of roads. On average over the last five years, DOR has spent about \$2.2 million per year on routine maintenance, which translates to about \$907 per year per kilometer, which appears barely adequate.

What are the problems?

- Current system, web based with Excel spreadsheets. Data on infrastructure limited to structures (bridges, culverts, retaining walls). No data on road pavement collected.
- The current data system lacks inventory information on roads and road conditions. No simulation model for road deterioration to assist on decision making.
- Manual collection of pavement data not practical. DOR would like to explore the potential of using GPS. However, GPS is expensive and requires training.
- Maintenance budgets are inadequate and based on technical standards.
- Absence of an appropriate system to provide a more objective basis for assessment of maintenance and resource requirements.

What have we tried in the past...

- A road maintenance management system (RMMS) was introduced in 1996 under ADB assistance. The system lacked inventory data and in addition generated unrealistic results in terms of the proposed maintenance interventions.
- In 2002, TA 3470-BHU “Road Planning and Management Strengthening Project” to introduce the concept for Road Asset Management.
- None of the earlier efforts has taken root Any attempt to introduce a RAMS needed to start from scratch.
- Need for DOR’s active participation in the preparation of the RAMS. Previous efforts in this regards were consultants-driven and had therefore not been sustainable since ownership from DOR was missing.

, and recently...

- TA for capacity building in Road Safety and Asset Management was approved in 2005, piggybacked to L2187-BHU "Road Network Project"
- Lacking the readiness of DOR for the implementation of the Road Asset Management component, the start of the TA was badly delayed. An Individual Consultant was engaged in Oct 2008 to familiarize DOR with the concept of RAMS, review the current situation, assist DOR in preparation of the Action Program for the introduction of the concept and prepare an appropriate training program.
- DOR's strong commitment was requested, with a more objective and rational approach to planning and resource allocation, and development of appropriated condition standards to determine gaps between the actual situation and targets.

Next steps

- Once the RAMS is put in place, DOR will have a more rational system in allocating maintenance funds.
- The organizational structure will have to be adapted to the requirements resulting from the introduction of RAMS. As the RAMs means an integrated and life-cycle approach to road management recognizing the interdependence of traffic developments, pavement designs, maintenance interventions, service orientation and accountability, a systemic view will have to be taken on all DOR activities.
- Sufficient time, resources and funds should be allowed for implementation of the RAMS to achieve sustainable results. Data collection, **defining adequate and achievable service levels**, interaction with stakeholders, valuation of assets, testing and calibrating a decision model and training staff are all time consuming activities and merit support from ADB or other donors over a longer period.
- Components for Asset Management should be attached to following loans (Road Network Project II, 2009) to provide continuity.

For More Information

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