

## **Selection Criteria for Provincial Road Development**

Upali Liyanage, Mampearachchi W.K

Road network is playing an important role in the development of any country. With the present development in Sri Lanka its road network, consisting of national, provincial and rural roads are developing rapidly. Government allocates a considerable amount of money out of its annual budget for road development. In this environment there is a necessity to spend this money with the maximum benefit to the country. This research was done to develop criteria for the selection of roads for development in the provincial sector with maximum benefit to the country.

The existing methods used for selecting roads for improvement are different in different organizations. Road Development Authority, who manages the national road network in the country has there own data base necessary in doing this selections using HDM4 which can make reasonably accurate selections. But due to the limited trained staff, equipments and allocation such systems are not available in provincial or rural road organizations.

he research propose to make initial allocation of road length for development in each province and subsequently make the candidate road list in a province in a priority according to the social and economic benefits to the area of road development The provincial allocation to be done considering the poverty level, road density, vehicle fleet and population of each province with different weightings to those parameters. Poverty level of the province was given the highest weighting and the provinces with the roads already improved by any project were given a negative weighting. The assessment of benefit due to each road development was done based on a cost benefit analysis. The cost assessment was done mainly based on the cost for the improvement and the maintenance cost. The benefits were assessed under economic benefits and social benefits due to road development. During the assessment the economic parameters were given 70% weighting and social parameters were given 30% weighting. The social benefits were assessed under the benefits at the vicinity of the road (25m belt) and the benefits within the Divisional Secretaries area of the road development.

The cost for the pavement construction was done based on the pavement design criteria according to Road note 31. The type of pavement was designed according to the traffic loading during the design period and the value of CBR in road base. As the CBR value for a

## Session 2A

road base is a fixed value the pavement design is based on the predicted traffic loading of the road. This was assessed according to the present traffic volume and the predicted traffic growth rates during the design period. It was revealed that the traffic growth rates used for this assessment in PERM was incorrect and the assessment of ESA values used for pavement design was incorrect. The other main factor affecting to the traffic loading to the road is the damaging factor of the overloaded vehicles. Most of roads improved in provincial councils are damaged before the expected life of the road due to overloaded vehicles. This situation Leads to loose the expected benefits due to this road development and the bad thing happening behind this is the road network is suffering due to lack of additional money for the improvement of these roads before the expected life of them. It is observed that this situation has not considered in designing the road pavements in provincial councils. During the research it is propose to use vehicle damaged factors developed by RDA for the provincial council roads as there may not be a big difference of damaging effect of overloaded vehicles in national or provincial council roads. The damaging factors were calculated according to the traffic counting and classification data for each road. The other observation made during research is the necessity of conducting the ROW data assessment at the stage of project implementation. During the period of the preliminary assessment and the project implementation this may have changed and the actual cost for shifting utilities and demolishing work in ROW to be used in cost assessment for the project and the maintenance cost for the road during operation with and without the project has to include for assessment.

Benefit assessment was done based on the saving of the vehicle operating cost due to road improvement and the cost saving due to the saving of travel time..

The finding of this research will help to select provincial roads for development with maximum return to the money spending for them.