

Effect of Climate Change on Road Maintenance in Bangladesh

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Abstract : Bangladesh is one of the most climate vulnerable countries in the world. According to scientists it is predicted that temperature will raise 1-3% and precipitation 20% by 2050 in Bangladesh. Increased temperature and precipitation will deteriorate pavement structure in an accelerated rate. The study has found that pavement life will reduce significantly due to rise in temperature and precipitation in a coastal road in Bangladesh. It will cause to increase the maintenance cost of the road. The study has found that reduction in pavement life will be caused due the decrease in stiffness and strength parameters of the pavement material due to high temperature and precipitation. It has found that use of new material costlier than the existing one will be necessary to prevent the reduction of pavement life. Eventually it will increase the re-construction cost of the road. The study has used mechanistic-empirical analysis method with a software GAMES (General analysis on multi-layered elastic systems) to find out the effect of temperature and precipitation rise on the pavement life. The study will help to guide road engineers of Bangladesh to prepare in advance to fight with the climate change effect.

Keywords : climate change, maintenance cost, mechanistic-empirical method, pavement life

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