



## **Measures for stabilization and reduced erosion on slopes along roads and railways in Norway- Stakeholder experience and research needs**

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The importance of vegetation to prevent erosion and landslide has so far received little attention in Norway. The National Transport Plan 2014 - 2023 (June 2013), states that the Government will develop the transport system to limit its environmental impact and help Norway's transition to a low-carbon society. It encourages investments in research to quantify the stabilization effect of different plant species, especially indigenous plant species. Initiation and total time for establishment and coverage are important factors for the erosion and stabilization relationship. Because of the Nature Diversity Act (2009), there are greater demands to reduce the negative effects of interventions in natural areas, for example on natural diversity. Development of transport infrastructure lead by The Norwegian Public Road Administration and Norwegian Rail (Bane NOR) are the main intervention in the natural landscape, including slopes. Until recently, the most common measure for securing erosion-exposed slopes along roads, railways, water and wind power developments was to supply the areas with imported grass seed mixes, followed by the use of pesticides. Grass and short shrubs, forests and perennial bush vegetation may constitute the original vegetation. The Nature Diversity Act (2009) requires that restoration after intervention in nature should be based on indigenous species, thus there is a need to know more about the function of Norwegian plant species in relation to stabilization or reduction of erosion on slopes. For optimal restoration of vegetated landscapes, establishment of a new vegetation cover should as far as possible be based on natural revegetation without sowing. In this project, information was gathered from project leaders from the road and railway sector, as well as from the Norwegian Water and Energy directorate (NVE, who act as the approving authority) on success and failure experiences from the main actors of Norwegian infrastructure projects. Questions concerned, geographic locations, climate, slope, description of measure, timing and sustainability of implemented measures.