



COST ACTION FP 0703

**Echoes: Expected Climate cHange
and Options for European Silviculture**

**Country Report: Climate change -
Impact, Adaptation and Mitigation in
*Slovak Republic***

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The Slovak Republic - Basic information

- Total area *49 036 km²*
- Agriculture land *50%*
- Forest land *41%*
- Water, built-up areas *the rest*
- 60% of surface above 300 m.a.s.l.
- 15% of surface above 800 m.a.s.l.
- More than 95% of the territory drained by the Danube River to the Black Sea
- Temperate climate zone



National activities related to Climate Change

- UN Framework Convention on Climate Change (Slovakia – ratification in 1993)
- U.S. Country Study Program – Climate change impacts and GHG Inventory - First analyses in Slovakia (1994-1997)
- National Climate Programme of the Slovak Republic – cross-sectoral approach, impact studies, sectoral analyses of socio-economic impacts
- Many national research projects
- The main focus on
 - Water management
 - Agriculture
 - Forestry

Selected research activities in the field of Climate Change related processes in Slovakia

- State project Global Climate Change impact on the forests in Slovakia
- State project Global Climate change impacts on the development of society
- Reconstruction of non native forest stands endangered by change of environment (climate mainly) to more resistant ecosystems
- State project Climate Change and drought in the Slovak Republic – impacts and starting points for sustainable agriculture, production and quality
- CECILIA – Central and Eastern Europe Climate Change Impact and Vulnerability Assessment (6th FP 2006-2008)

The Slovak Republic – Climate Change related facts

- Increase of mean annual temperature by about 1.1°C in the 20th century
- Decrease of annual atmospheric precipitation by about 5.6% in the 20th century
 - The decrease of more than 10% of total precipitation in the southern Slovakia
 - In the north and north-east increase of up to 3% over the century
- Decrease of the relative humidity - 5%
- Decrease of snow coverage over the whole territory
- Solar radiation did not changed significantly
- Potential and actual evaporation, soil humidity and global radiation balance confirm a gradual “desertification” of Slovakia

Climate Change Impacts on Forest Ecosystems

Main focus on

- Changes in bioclimatic conditions and changes in site conditions
- Changes in water balance
- Impacts on growth processes (main tree species)
- Changes in physiological processes of forest tree species
- Changes in genetic structure and diversity of the tree populations
- Abiotic and biotic injurious agents

Outputs

- The proposal of strategy, adaptation and mitigation measures in term of climate change impact on forest ecosystems in Slovakia
 - Short-time prognosis of climate condition changes to 2045 for the principal tree species (*beech, oak, spruce, fir, larch, pine*)
 - Long-term prognosis of climate condition changes to 2075 for the principal tree species (*beech, oak, spruce, fir, larch, pine*)
 - Silvicultural measures (tending, regeneration) for the mentioned tree species according to 8 altitudinal forest zones.
- The proposal of monitoring system of climate change consequences for decision-making process in forestry

Outputs

- National methodology of emission balance of greenhouse gases designed for landscape and forestry utilization.
- The proposal of monitoring system focused on stage detection and appraisal of changes for carbon reserves in forest ecosystems.
- The proposal of forest policy measures for regulation of carbon fixation.
- The proposal of mitigation measures under conditions of forest management oriented to forest policy, forest management planning and forest practice.



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**Thank you for
your attention**