Geophysical Research Abstracts
Vol. 14, EGU2012-6298, 2012
EGU General Assembly 2012

Soil preservation by afforestation in changing climate

Z. Galic and S. Orlovic
Institute of Lowland Forestry and Environmnet, Novi Sad, Serbia (galicz@uns.ac.rs)

Observed climate changes in Vojvodina (northern part of Republic Serbia) are reflected in the increasing of average annual air temperature and decrasing of precipitation. The data suggest that the increase of average annual air temperature in the period 1998-2008 compared to period 1960-1991 was higher for 1°C. Reduction of rainfall was recorded for December, January, February and May. These decreasing of rainfall with an increase of average air temperature in the vegetation period (July 1.2°C and 1.7°C in August) leading to longer and more frequent dry periods. Forest aridity index (FAI) increase from period 1960-1991 continuously. In period 1960-1991 FAI for Vojvodina was 5,74 and in period from 2000-2010 the average FAI was 7,57. This increasing FAI means warmer and dryer weather in the main growth cycle and in the critical month. Longer and more frequent dry periods lead to unfavorable conditions for the growth of many tree species in region like Vojvodina.
Soil erosion leads to the degradation of fertile soils in Vojvodina (about 83.24% of soils are used for agricultural production). The main soil type is chernozem. A significant role of chernozem protection and conservation is attributed to different forms of forest and non-forest greenery, such as protection forests, shelterbelts, tree rows, hunting preserves and other forms of amenity and ornamental greenery.
This paper analyses the possibility of afforestation of tree and shurb species in different forms of protection forests, shelterbelts, tree rows, hunting preserves and other forms of amenity and ornamental greenery in Vojvodina considering future climate change. The selection of tree species is the base of establishment of different forms of «greenery» aimed at the prevention of destructive processes in future.

Key words: climate change, soil degradation, afforestation

Acknowledgement

This paper was realized as a part of the project "Studying climate change and its influence on the environment: impacts, adaptation and mitigation" (43007) financed by the Ministry of Education and Science of the Republic of Serbia within the framework of integrated and interdisciplinary research for the period 2011-2014.