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RESEARCH INTO SOIL EROSION PROCESSES AND CONTROL IN THE MAJOR WATER-EROSION REGIONS OF CHINA

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The project, "Research into soil erosion processes and control in the major water-erosion regions of China", aims to address the urgent needs of China's national strategy and scientific developments of soil and water conservation. Taking the 4 water-erosion regions of northeast black soil, northwest loess, South-China red soil and southwest purple soil as the main study areas, the research has concentrated on soil erosion process, modeling and control mechanisms. After more than 4 years research, the following results have been achieved that include (1) revealed soil erosion development processes and spatial patterns, factors and mechanisms of different types and at different scales; (2) to developed a Chinese multi-scale soil erosion prediction modeling system; (3) established evaluation system of impacts of soil erosion/conservation on environment, and integrated soil erosion control models to fit into the natural ecology and social economy in different regions. All of these achievements have enriched and developed soil and water conservation science, and provide a theoretical basis for the national soil and water conservation strategy and planning in China.

Key words: water-erosion, soil erosion processes, model, control, China.

THE AFFORESTATION STRATEGY OF THE REPUBLIC OF SERBIA IN TORRENTIAL FLOOD RISK MANAGEMENT

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By setting the objective of increasing the Republic of Serbia's afforestation level to 41.4% by 2050, the Serbian forestry has undertaken a number of tasks, among which afforestation, regeneration and the improvement of quality of the existing forests have the highest priority. The key criteria applied in the prior afforestation of barren land, as well as in amelioration of degraded and coppice forests, were the scope of afforestation, i.e. the size of afforested areas and the highest possible wood mass yield, obtainable in a short period.

The result of the influence of different climatic conditions, heterogeneous geological composition, relief, exposure and quality of forest ecosystems, as well as the negative impact of anthropogenic factors conditioned the development of intensive erosion processes in the previous period and the occurrence of the frequent torrential floods. The consequences are, first of all, endangering human lives and material damage caused to settlements, roads, agriculture, water management facilities, that is, society in general. The results of the research performed in the areas of Grdelička Klisura and Vranjska Kotlina confirmed the significance of the effects of the performed erosion control works for the mitigation of the intensity of erosion and sediment yield and transport, and the necessity of a multidisciplinary approach to the questions of drainage basin erosion processes. Successful afforestation depends on the selection of the suitable technical solutions (bench terraces and terraces), correct selection of species, application of seedlings produced in the afforested area and appropriate silvicultural measures in the established plantations.

The implementation of new afforestation strategy, based on ecosystem preservation and sustainable development, will contribute to a more successful establishment of cultures and plantations, as well as to enhancement of other, generally beneficial forest functions.

Key words: Serbia, risk management, afforestation strategy, torrential floods

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