7th Joint CORNET Call for Transnational Collective Research Proposals

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Subject:	**CESOF** **Climate change effects on soils of the forestation lands**
Coordinator: Other applicant(s):	Association of Private Forest Entrepreneurs in Szabolcs-Szatmár-Bereg County (MEGOSZ), Other regional organizations of MEGOSZ, Forest Research Institute, Geological Institute of Hungary, Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences (RISSAC), Plant Protection Institute of HAS, and Department of Mycology of Semmelweis Univerity
Sector/target group:	Private foresters and Assisting organizations of MEGOSZ for foresters
Proposal summary:	**Concept:** ❖ Investigations of modified natural base (its geological base, soils and forest damages) and those of natural changes (climatic elements) due to climate change in a small region. Dissemination of experiences in Hungary and in other parts of Central Europe ❖ Setting up rules of forest planting and silviculture techniques, considerably differing from the present ones, for continually changing forests adjusting themselves to nature ❖ Putting forward the approval of changing forest types to the society and professional organizations **Background:** The soils of Hungary and those of the continental climate zone of Europe belong to the soils of Central and South-Eastern Europe. They have been developped from the various types of parent rocks originally due to the effects of continental climate conditions. However, due to the climate change, the volume of precipitation and heat different from that of the past, effect the water uptake, content and water storage capacity of the soils having been developped so far. Changes can radically effect the form of nutrient uptake and storage. Our forest stands have to adapt to the variable site conditions therefore we have to change and improve dinamically our silvicultural technique that has been developped for several centuries. This urge for adaptability will have an especially remarkable role when we have to face a less optimal forest site potential e.g. in this area (Szabolcs-Szatmár-Bereg). Moreover, forest planting of lands having been used in agriculture for several decades, adds to all of this. According to the forecast of climatologists our climate is changing to be similar to that of the areas lying much further on the South. As a result, concerning their composition and age, forest communities will not be identical with those of the present times. Spatial and structural changes of forest stands can fundamentally modify forest planting and

	preservation all through our continent. This is a reason for we need to investigate and analyze the changes and to establish the relating planning and silvicultural techniques. ▪ Soil types of sites, with special regard to water, air and nutrient management ▪ Relation between root position of different forests planted on the sites of agricultural lands, considering the changes of the water regime parameters, degrading of the soil structure, and that of soil life ▪ Choice of species, planting technology, spacing, mixing, temporal distribution of the tree utilization ▪ Differences of geological basics closely connected with the water and nutrient management of soils ▪ Relation between the cultivation methods applied before forestation and the prospective forest health; mycorrhiza, butterfly and insect damages ▪ Yield forecast based on the changes and the timber (annual ring) structure quality ▪ Mesoclimatic characterization of the area, analysis of the trends. ▪ Analyzation of prospective trends on the forest areas of Hungary ▪ Analyzation of trends on the forest areas of continental climate particularly
Advantages for trade and industry:	Investigating the natural circumstances and the ecological environment, this project will create a scientific basis for the development of forest planting, regeneration, silvicultural techniques. In order to help us continuously sustain forested lands the project will help us put into practice a silvicultural system adapting more dinamically and better than so far to the changes of sites, to the complex system of parent rocks, soil, micro-relief, and climatic factors. Besides its economical importance, the forest planting program will play a role of special significance in the development of rural areas, and enhancing the profitability of production for the rural people.
Dissemination concepts:	Publications, presentations, meetings of experts and public in orther for them to better understand and accept changes. Broadening the system of investigations preceding forest planting in order to adjust to the changing continental conditions and to correspond the system of technical expertise with the changes
Profile of additional partners:	Research institutions in the field of forest, soil, geology, plant and forest protection
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