

### Funding institution

VolkswagenStiftung, Kastanienallee 35, D-30519 Hannover. Website: [www.volkswagenstiftung.de](http://www.volkswagenstiftung.de)

### Program

Trilateral Partnerships - Cooperation Projects between Scholars and Scientists from Ukraine, Russia and Germany (Application date: April 30, 2015)

### Project title

Strengthening the Adaptive Potential of the Forests of Western **Ukraine**, Northwest **Russia** and Southwest **Germany** to Changing Environmental Conditions and Societal Needs – **SURGE**

- Strategies and Measures for Increasing and Sustaining the Provision of Forest Ecosystem Goods and Services

### Partners

**Partner 1 (P1):** Albert-Ludwigs-University Freiburg, Germany, Faculty of Environment and Natural Resources, Chair of Forest Growth, Prof. Dr. Heinrich Spiecker (Director), Dr. Hans-Peter Kahle (Assistant professor) - P1 ALU-FR

**Partner 2 (P2):** Ukrainian National Forestry University, Lviv, Institute of Silviculture, Prof. Dr. Vasyl Lavnyy (Professor) - P2 UNFU-LV

**Partner 3 (P3):** St. Petersburg State Forest-Technical University, Russia, International Center of Forestry and Forest Industries, Prof. Dr. Alexander Alekseev (Director), Prof. Dr. Maxim Chubinsky (Assistant professor) - P3 SFTU-SP

The German partner already maintains a long-lasting co-operative partnership to the Ukrainian as well as to the Russian partners involved in this proposal.

### Project Summary (English)

The aim of the proposed project is to increase and sustain the provision of ecosystem goods and services from the forests of Western Ukraine, Northwest Russia and Southwest Germany under changing environmental conditions and societal needs. Strengthening the adaptive potential of the forests will be achieved by the development of strategic and operational management tools in a sequence of collaboratively organized and implemented scholarly meetings to be held in each of the three participating countries. The outcome of the project will be a guideline consisting of a toolkit designed to increase and sustain the provision of forest ecosystem goods and services under changing conditions.

We apply for the funding of seminars, summer schools, and workshops in the fields of forest management planning and forest resource management to be held in Freiburg, Lviv, and St. Petersburg. The planned activities reach from March 2016 to June 2018 (28 months). The proposed activities also encompass the establishment of demonstration plots at the Ukrainian and Russian

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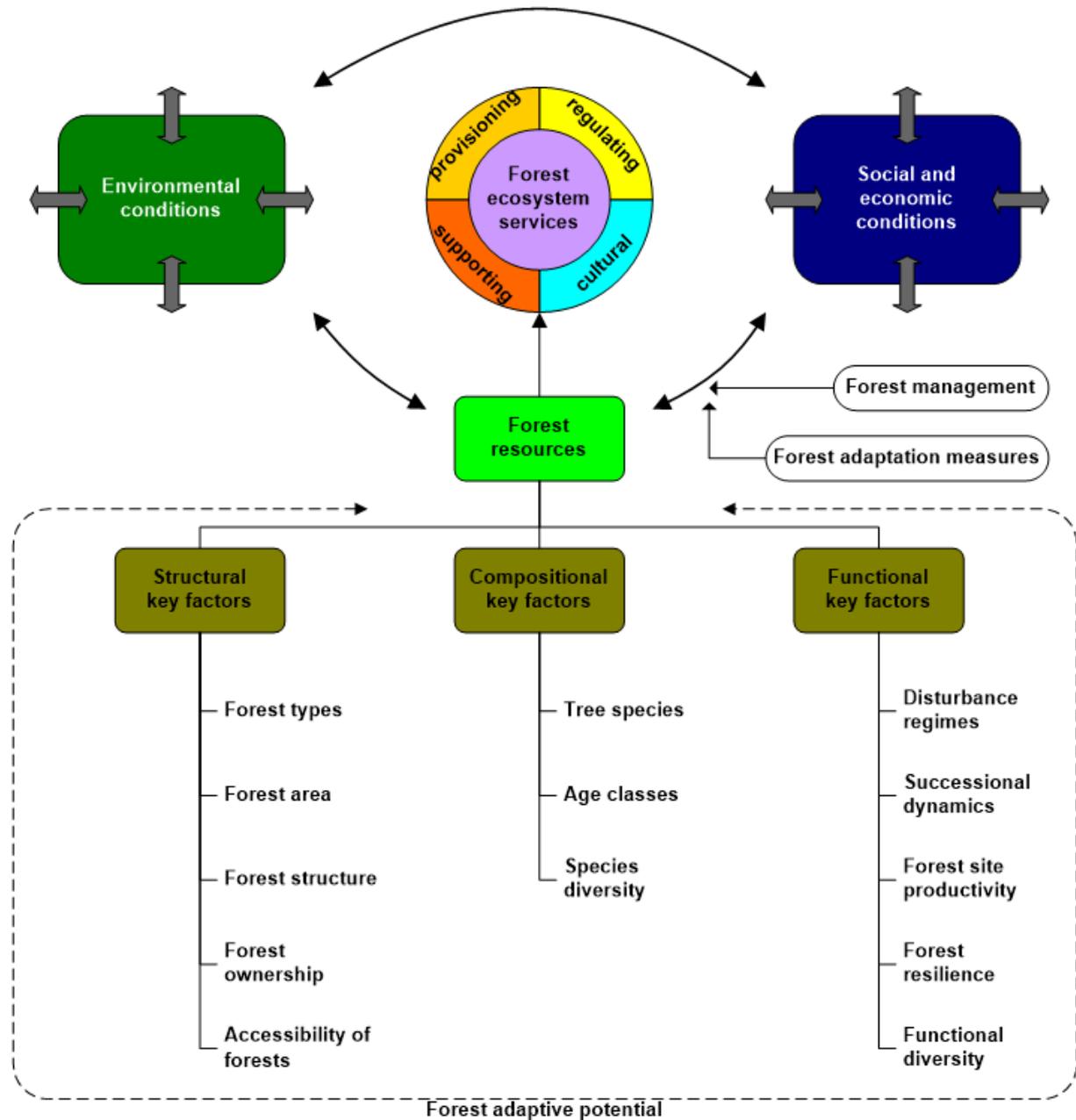
partner institution for educational, training and research purposes as well as the setting-up of a tree-ring measuring station at the two partner institutions as measures of sustained capacity building in silvicultural techniques, production ecology and forest growth research. Junior scientists (postgraduate students, doctoral students, young post-doctoral scientists) from the three participating countries are involved in all activities.

Whereas forests and forestry play an important role in each of the participating regions, the past and present ecological, economic, social and political conditions differ between Western Ukraine, Northwest Russia and Southwest Germany. These differences are evident in the current state, utilization and perspective of the respective forest resources. An appropriate characterization of the state of the forest resources considers structural, compositional and functional key factors. These key factors point to the types and degrees of fulfillment of ecosystem services the forests provide to the societies and are indicative for the adaptive capacity of the forests to environmental changes (Fig. 1). Alterations to the forest resources are driven by internal processes like successional dynamics or by external effects like changes in the environmental conditions and, in case of managed forests, by the socio-economic conditions. Disequilibrium conditions may arise when the forest resources are not in accordance with the environment or when the ecosystem services provided by the forests do not match the needs of the society in terms of quality or quantity. Therefore forest management, notably forest adaptation measures are necessary to maintain or increase and sustain provision of ecosystems services.

Since the state of forest resources and the socio-economic conditions differ, the optimum forest management strategy and the appropriate suite of forest management measures will also differ between the participating countries or rather regions. The future of the forest resources is a topic which is embedded in the complex issue of sustainable land-use management and therefore interlinked with various social and political processes. In the proposed project we will not cover all relevant aspects but focus on those where forest sciences can substantially contribute to an informed decision making process. On the strategic level we will address forest and forestry specific questions of long-term management planning such as forest share, tree-species composition, forest functions and management intensities. We will discuss and elaborate sets of indicators for these topics and instruments for the derivation and implementation of strategic targets. On the tactical and operational level silvicultural management concepts will be discussed including questions like choice of tree-species and stand structural types, forest rotation length, stand density management, and risk and disturbance management.

A forum for the presentation and discussion of these topics are the scheduled seminars to be held in each of the three participating countries. The core part of each seminar will be structured around a SWOT analysis, in which the strengths, weaknesses, opportunities and threats involved in managing the forest resources in each region are evaluated. The summer schools aim towards providing an international and interdisciplinary platform where young scientists meet and exchange with scientific experts to intensify scientific analysis, engage in discussions and elaborate skills and tools under the specific thematic outline. The two scheduled workshops are targeted towards introducing, demonstrating, implementing and applying tree-ring based studies at the Ukrainian and Russian partner institution.

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**Figure 1:** Block diagram illustrating the conceptual basis of the SURGE proposal. Structural, compositional and functional key factors of the forest resources point to the ecosystem services provided by the forests and are indicative for the adaptive potential of the forests. Alterations to the forest resources are driven by changes in the environmental and socio-economic conditions (double headed block arrows). Forest management, notably forest adaptation measures are necessary to increase and sustain provision of ecosystems services.

Each project activity will contribute to the development of a guideline consisting of a toolkit for better understanding, organizing, managing and sustaining in the context of forest adaptation management. The process of co-operation in this way will stimulate research into this topics and foster communication among scientists and between scientists and stakeholders. By focusing on tools rather than on problems, issues and challenges we hope that the guideline will motivate stakeholders on different levels to take practical action. In order to guide a specific stakeholder from problem to solution, the tools will be transferable, i.e. they can be taken form one context and adapted elsewhere, without being a prescriptive and inflexible blueprint. Other important features of

the tools to be developed include simplicity (ease of learning and communication) and cost-effectiveness (in terms of time, money, and equipment).

With the suggested project we follow the idea of strengthening cross-border cooperation between scholars, scientists, and selected academic institutions from the Ukraine, Russia and Germany through the joint organization and implementation of common academic meetings. Our intention is to share knowledge, to learn from each other, to foster awareness for the impact of anticipated climate changes and changing societal demands on forest ecosystems, to stimulate and guide strategy development processes and to focus and strengthen research capacity at each partner institution. Our hope is to initialize sustained partnership and to contribute to building rapprochement, confidence, and understanding in the conflict region while maintaining the dialogue with colleagues in Germany.