Benefits and challenges of the C3S Climate Data Store for impact researchers and end users in forestry – lessons learned from the Train the Trainers course

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Forest-climate interactions are extremely complex. Thus, for the development of adaptation measures in forestry, climate information are required for a large variety of related impact fields, e.g. forest growth, vitality, production, species distribution, water and carbon balance, biotic damages. The diverse set of impact modelers and end users of these fields are using different climate variables and derived indices on different spatial and temporal scales (e.g. local observations, regional projections, daily/annual time series, 30-year means, frequency of extremes). Very often, there is a gap between climate information supply and demand. Modelers mostly require free accessible, quality-assured information, high resolution observed time series, and bias corrected model results, in user-friendly formats. Furthermore, there is an urgent need for the understanding, interpretation and treatment of the uncertainties of the climate data and information.

Based on the experiences of the Train the Trainers course on the use of the C3S Climate Data Store (CDS), this free available database with detailed documentation could provide an interface to fill this gap, thus could contribute to the monitor of the observed changes and to the support of the mitigation and adaptation policies in forestry. The largest challenge of the application of the CDS is that the climate data is not downloadable for selected grid boxes until now and high programming skills are required to access to detailed information beyond the visualization of the GCM results.

For users in forestry, a plan for an in-country CDS training event in Hungary (supported by Copernicus) has been worked out, in order to enhance skills of climate data processing and proper interpretation of the climate model results. The training event is open also for environmental engineers, who can apply these climate services in case studies in water management, landscape-, road- and infrastructure planning, environmental impact assessment as well as in conducting the mandatory climate risk analyses for disaster risk reduction.