Forecasting future challenges

Since around half of Austria’s drinking water resources originate in the karst areas of the Northern and Southern Limestone Alps, which are largely covered by forests, a comprehensive analysis of the potential impacts of climate change and forest management practices on the quality and quantity of drinking water resources in these areas is essential. Short residence times mean that the filtering and transformation capacities of vegetation and soil are key to the quality of karst spring water. Scientists remain uncertain about future climate change-related impacts on forests. The reactions of forest ecosystems may be very subtle, or may be strongly affected by disturbances such as infestations of bark beetles or fungi, windthrow events or forest fires. The resulting erosion and sediment, and the leaching of nitrate into the karst system, all affect the quality of drinking water. The possible increase in severe precipitation events due to climate change can also impair water quality. However, such impacts can be balanced somewhat by improved forest stability. Adequate silvicultural measures, focusing on forest stand stability, are therefore essential.

The Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, along with scientific institutions and public and private organisations, is developing a new forest programme to protect water resources in the framework of the EU 2014–2020 funding period.

In the agricultural sector, extreme climate events are likely to result in water scarcity and drought in some regions. Challenges include large-scale shifts in cropping zones, changes in crop yields, and the need to improve water use efficiency for different cropping systems and agricultural sites. Possible adaptation strategies — including technological options to improve crop water use — will be surveyed by the Romanian National Meteorological Administration, helping local authorities to manage future challenges.

EU Adaptation Strategy launch

Adaptation measures need to be taken at all levels, from local to regional, and from national to EU. The EU Strategy on Adaptation to Climate Change, adopted by the EC in April 2013, responds to this need by contributing to a more climate resilient Europe. The adoption of the strategy is the culmination of earlier EU efforts, in particular the 2007 Green Paper on Adaptation and the 2009 White Paper “Adapting to Climate Change: Towards a European Framework for Action”.

The new strategy aims to develop a coherent approach and improve coordination among actors. Its key objectives are to:

- promote action by member states by funding adaptation strategies and capacities;
- climate proof at EU level by further promoting adaptation in vulnerable sectors (e.g. agriculture, fisheries and Cohesion Policy), improving the resilience of Europe’s infrastructure and promoting the use of insurance against natural and anthropogenic disasters; and
- further develop the European climate adaptation platform (Climate-ADAPT).

The second Steering Committee meeting and third Scientific Committee meeting took place on June 11–12, 2013, in Belgrade, hosted by the Republic Hydrometeorological Service of Serbia (RHMS). The central role of each country in contributing to the better integration of scientific knowledge into local, regional and national planning was highlighted. The event provided an opportunity to review project activities being carried out under the three thematic centres, which are reviewed below.

**Thematic Centre 1**
The methodology adopted for the pilot study “Adapted forest management at LTER Zöbelboden” was presented. For the pilot areas, a monitoring assessment will be carried out and the use of harmonised climate change indicators and different management options will be evaluated. In relation to pilot study 2, “Climate change adaptation measures in Romanian agriculture”, an overview was given of the status of data collection and availability; interactions among pilot study participants; opportunities for methodology comparison; and strategies for the integration of results.

**Thematic Centre 2**
The presentation on pilot study 3, “Climate change adaptation in the new water regime in Puglia region, Italy”, focused on different aspects of drought and a multi-step socio-economic analysis. For pilot study 4, “Effects of climate change on wetland ecosystems in Attica region, Greece”, temperature and precipitation data have been collected and processed for nine meteorological stations and the mapping of land-use and land-cover changes in wetlands in Attica is also under way. In relation to pilot study 5, “Water resources and hydroelectric use”, glacier melting models and model application for snow water equivalent comparison and flow rate comparison were discussed.

**Thematic Centre 3**
The methodology for pilot study 6, “Vulnerability assessment in Budapest and Veszprém” was discussed and compared in terms of tools (questionnaires, desk research, modelling) and indicators for planning.

**Work package round-up**
Under WP7, two reports were presented — “State of the Art in Terms of Policies and Plans” and “Cross-Sectoral Links and Possible Mix of Measures” — reviewing adaptation and mitigation initiatives in the 13 OrientGate countries. A separate workshop was dedicated to WP3 activities (see below).

One of the major outcomes of the Belgrade meetings emerged from discussions on the final set of policy guidelines on how to integrate climate change into planning policy. These guidelines will be published in book form and will summarise the activities carried out under the project’s pilot studies.

The meetings also provided an opportunity to discuss administrative and financial issues and to agree on the next steps in implementation. The Steering Committee and Scientific Committee will meet next in Trento, Italy, on December 2-3, 2013.

Ilaria Gallo, Martino Bacile di Castiglione, Giulia Galluccio • CMCC
In order to assess the impacts of climate change, observations of past and present conditions are required, along with scenarios for future developments. The goal of the project’s WP3 is to map the variety of methodologies, tools and indicators used by hydro-meteorological agencies across South Eastern Europe. In addition, regional climate scenarios will be used to test the relevance of common indicators and to assess biases and other errors for each type of data in order to minimise uncertainties regarding climate projections for the SEE region.

The Republic Hydrometeorological Service of Serbia (RHMSS), leader of WP3 activities and also host of the South East European Virtual Climate Change Center (SEEVCCC), was tasked with collecting information on the availability, accessibility and handling of meteorological data across the SEE region. This work was mostly carried out via custom-made questionnaires distributed to OrientGate project partners.

Project partners were asked in turn to provide information about local/regional meteorological facilities, climate indicators and climate-model results. A statistical analysis was carried out after all the data from partners had been collected. A summary of the analysis indicated that the project region contains a sufficient number of meteorological and hydrological stations to ensure reliable measurements, and that the majority of countries in the region have sufficient experience of using climate indicators in a variety of fields (e.g. the public, government, tourism, energy and agricultural sectors). It was also established that most partners deploy different climate models and results in their practices. Maps of currently used indicators were created based on temperature, precipitation and other parameters. In addition, a map of meteorological and hydrological stations was created, reflecting the information received via questionnaires.

Based on these findings, the RHMSS proposed a set of indicators that will be tested by the project’s three thematic centres. A side-by-side calculation of indicators will then be performed, using observed meteorological data and data/time series generated on the basis of climate projections. It was also decided that the RHMSS will propose emission scenarios to be used by the pilot area partners: in line with the project proposal, it was suggested that partners should use RCP4.5 as a lowest-emission scenario and RCP8.5 as a highest-emission scenario.

Engaging local stakeholders

Project partners took part in various events in spring 2013, raising awareness among local stakeholders about climate change and getting them involved in the pilot studies.

Meetings were held in February in the 13th district of Budapest, and in April in Veszprém, Hungary, focusing on the vulnerability assessment of the two municipalities being undertaken under the Thematic Centre on Urban Adaptation and Health. Participants in Budapest concluded that the pilot study will be important for integrating adaptation measures into municipal plans. In Veszprém, the municipal energy strategy and other climate change-related activities were highlighted. In 2012, Veszprém’s efforts earned the city the Climate Star European Award for Local Climate Protection Initiatives.

Around 70 stakeholders in Romania attended an event in April to learn about the project and the role of the Environmental Protection Agency of Covasna and the National Meteorological Administration of Romania (NMAR), the partners preparing the pilot study “Climate change adaptation measures in Romanian agriculture.”

Romania also hosted a technical working group meeting in May. Officials from Caracal Town Hall, with the NMAR, discussed how the goals related to pilot study 2 will be achieved. The 50 participants from local and regional authorities working in agriculture, water resources management and environmental and public administration exchanged experiences and lessons learnt and explored possibilities for reducing the impacts of drought in the region.

Luminita Cornea ♦ EPA Covasna
Réka Prokai ♦ REC
Elena Mateescu ♦ NMAR, Romania
The Climate-ADAPT platform

Climate-ADAPT (http://climateadapt.eea.europa.eu) supports stakeholders at all levels of governance by making available a broad range of information on climate change risks, EU sector policies, adaptation practices, national initiatives and decision support tools. The platform contains significant EU research findings, in particular from INTERREG and ESPON projects that have strengthened the adaptation knowledge basis in Europe. Climate-ADAPT was launched in 2012 by the European Commission in support of the EU Adaptation Strategy. It is now maintained by the European Environment Agency’s Topic Centre on Climate Change Vulnerability and Adaptation (ETC/CCA), which is coordinated by the Euro-Mediterranean Centre on Climate Change (CMCC).

Lead partner of the OrientGate project, CMCC is also involved in the EU FP7 ERA-NET project CIRCLE-2 (http://www.circle-era.eu/np4/home.html) that maintains INFOBASE, a searchable database of adaptation projects (http://www.circle-era.eu/np4/10). Including projects funded at national and local levels across Europe, the INFOBASE tool complements the information provided by Climate-ADAPT. The INFOBASE content has undergone preliminary analysis and a final report is expected by January 2014.

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If you would like to subscribe to the project newsletter Climate Gateway, please write to Venelina Varbova.

In order to enhance the impact of the project, the OrientGate partners would be happy to get in touch with other similar initiatives, individual regions with good practice in the field, as well as companies and/or organisations carrying out research on the topic. If you have relevant experience to share, please write to Giulia Galluccio or Venelina Varbova.

www.orientgateproject.org

THEMATICAL CAPITALISATION

The SEE Transnational Cooperation Programme has developed a capitalisation strategy to strengthen links between projects on similar topics (or “thematic poles”), enabling project teams to consolidate achievements and create greater leverage.

OrientGate has been selected as lead project for the Thematic Pole (TP) on Climate Change Adaptation. The Euro-Mediterranean Centre on Climate Change (CMCC) chaired the first TP meeting, held during the SEE Annual Conference in Bucharest in June 2013.

Projects funded by the SEE Programme and the EU and focusing on the same theme will be involved in the TP: OrientGate, SEEKRIS, InTourAct, Mare Nostrum, SEE HydroPower, Danube FLOODRISK, DMCSEE, FOROPA, CC-WARE, CC-WaterS, MONITOR II, Be-Natur, EU.WATER, SNAP-SEE.

The main outcome of the meeting was a capitalisation roadmap, which provides a schedule for capitalisation activities. Members of the TP will present the outcomes of the capitalisation initiative at the 2014 SEE Programme Annual Conference.

As TP coordinator, the CMCC will facilitate the flow of information among TP members and with the SEE Programme Joint Technical Secretariat.

During the SEE Annual Conference Project Fair, the CMCC disseminated OrientGate flyers and newsletters.

SEE Annual Conference: www.seeconference2013.net/
Video: www.youtube.com/watch?v=BAPbygImeTo

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The 2012 kick-off meeting venue feels the impact
Photo: Zsolt Bauer

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Design and layout: Tricia Barna
Copyediting and proofreading: Rachel Hideg
Publisher: The Regional Environmental Center for Central and Eastern Europe