Workshop - Introduction to the Climate-Land-Energy-Water (CLEWs) modelling framework and its use in the Nexus Assessment of the Drin River Basin

6 July 2021 , 9:30–13:00 (CEST)
7 July 2021, 9:30–13:00 (CEST) – for invited experts only

To be held online in the Zoom platform

Connection link: https://us02web.zoom.us/meeting/register/tZIsf-mvrz0rHNCG9WGJtmWl0TqZGeuLlhGe

In the framework of the project

"Promoting the Sustainable Management of Natural Resources in South-eastern Europe, through the use of the Nexus approach"

funded by the Austrian Development Agency (ADA),
the operational unit of Austrian Development Cooperation,

implemented by the Global Water Partnership-Mediterranean (GWP-Med)
in partnership with the United Nations Economic Commission for Europe (UNECE)

Simultaneous interpretation between English and Albanian and Macedonian will be available

Concept

The Climate-Land-Energy-Water (CLEWs) framework is a modelling tool for quantitative analysis of the Nexus between the biophysical systems of climate, land (including agriculture), energy and water. It was developed in the past decade by the International Atomic Energy Agency (IAEA), the United Nations Department for Economic and Social Affairs (UNDESA), the United Nations Economic Commission for Europe (UNECE), the United Nations Development Programme (UNDP), KTH and many other partners. It has been largely employed to support the design of national and regional cross-sectoral policy packages for climate change adaptation and mitigation. Within the Nexus Assessment of the Drin River Basin, the component of the CLEWs framework focusing on Energy and Water is currently used to quantify benefits of cross-boundary cooperation in the management of the cascaded hydropower systems under several conditions. These conditions include for instance changing the operational rules of the hydropower plant to enhance flood management and control.

This workshop is addressed to experts and officers from energy-related institutions (Ministry, Utilities, TSO, Regulatory Agency etc) or river basin authorities from Albania, Kosovo* and North Macedonia, with interest or engagement in modelling analyses. Preferably, participants shall have basic knowledge on the Water-Energy-Food-Ecosystem Nexus and the related Assessment for the Drin River Basin.
The overall aim of the Workshop is to get the participants familiar with the CLEWs framework. The participants will obtain ground knowledge about the framework and its worldwide application, as well as hands-on experience on its use, in the context of the Drin River Basin nexus assessment.

The workshop is structured in two days. The **first day** is aimed at a broad audience. The participants will receive an introduction to existing Nexus assessment methodologies and to CLEWs. They will then discuss in group current and potential water-energy nexus challenges in the Drin River Basin and assess the quality of the modelling work carried out with CLEWs within the Nexus Assessment of the Drin River Basin. For best interaction with the moderators during the breakout rooms and for best outcomes, up to 30-35 participants can be accommodated.

The **second day** is aimed at a restricted number of experts (max 15 in order to allow the moderators to follow each participant individually) with basic modelling experience and interest in deepening that experience, to be identified by their Institutions. The participants will be guided in the creation of a simple model with the CLEWs framework (focusing only on the electricity sector, for simplicity) and will navigate through the structure of the electricity system model developed for the Drin Riparians.

Format: The workshop will be held virtually via the Zoom platform. The link to register for and connect to the meeting is:
https://us02web.zoom.us/meeting/register/tZIsf-mvrz0rHNCG9WGJtmWl0TqZGeuLlhGe

The connection link for Day 2 of the workshop will be shared with the selected experts.

Simultaneous interpretation between English and Albanian and Macedonian will be available.

N.B. No software installation is required.

Agenda

Day 1: 6th July (Overview of methodologies and models)

9:30 Welcome and introduction (Mr. Tassos Krommydas, Senior Programme Officer, GWP-Med, Mr. Francesco Gardumi, KTH Royal Institute of Technology)

9:45 Introduction to Nexus assessment methodologies and CLEWs (Dr. Francesco Gardumi, KTH Royal Institute of Technology)

10:30 Break

10:45 Discussion on current and potential Climate-Water-Energy nexus issues in the Drin River Basin (All, guided by Dr. Francesco Gardumi, KTH Royal Institute of Technology)

11:15 Presentation of the Water-Energy model of the Drin River Basin and riparian countries – underlying modelling framework (OSeMOSYS), key characteristics and assumptions (Mr. Youssef Almulla, KTH Royal Institute of Technology)

12:00 *Breakout group session*: discussion (guided by trainers from KTH) on scenarios, selected results and methodological aspects in the Water-Energy model of the Drin River Basin (All)

12:45 Wrap-up and end of session

Day 2: 7th July (Technical and modelling session)

9:30 Welcome and recap of Day 1 (Mr. Francesco Gardumi, KTH Royal Institute of Technology)

9:45 *Follow-along exercise*: Creation of a simple electricity system model with the Open-Source energy Modelling System (Guided by Dr. Francesco Gardumi, KTH Royal Institute of Technology)

10:45 Break

11:00 *Follow-along exercise*: Modifying and re-running an existing model using jupyter notebook (Guided by Dr. Francesco Gardumi, KTH Royal Institute of Technology)

11:45 Github and model transfer: Detail on the Water-Energy model of the Drin River Basin and riparian countries – how it looks, how it works, how to use it and run it using jupyter notebook (Mr. Youssef Almulla, KTH Royal Institute of Technology)

12:30 Wrap-up and end of session (Mr. Youssef Almulla, KTH Royal Institute of Technology)