IAHS2017-132
IAHS Scientific Assembly 2017

Service for Water Indicators in Climate Change Adaptation (SWICCA)

Berit Arheimer and the SWICCA Team
SMHI, Hydrological Research, Norrköping, Sweden (berit.arheimer@smhi.se)

Copernicus is the European Union's Earth Observation programme, addressing six thematic areas of which one is Climate Change. The Copernicus Climate Change Service (C3S) is still in the development phase and will combine observations of the climate system with the latest science to develop authoritative, quality-assured information about the past, current and future states of the climate in Europe and worldwide. ECMWF operates the C3S and bring together expertise from across Europe to deliver the service. This presentation will show the development and results from the proof-of-concept of a Service for Water Indicators in Climate Change Adaptation (SWICCA) available at: http://swicca.climate.copernicus.eu/

SWICCA provides an operational and interactive web service including some 40 climate change indicators for visualisation and downloading in user-friendly formats. To facilitate both near future and far future assessments, we provide the indicators for different time ranges; normally, absolute values are given for a reference period (e.g. 1971-2000) and the expected future changes for different 30-year periods, such as early century (2011-2040), mid-century (2041-2070) and end-century (2071-2100). In addition, SWICCA provides seasonal forecasts and transient time-series of some Essential Climate Variables. An ensemble of model results is always given to indicate confidence in the estimates. Altogether, SWICCA provides more than 900 datasets through the interface. The present service is only for Europe but the next step in the development will also provide information to users operating on a global scale.

The main target group of the Service is consulting engineers (so called Knowledge Purveyors) working with climate change adaptation in the water sector and policy-makers. The hypothesise is that by using indicators, climate impact assessments can be done without having to run a full production chain from raw climate model results – instead the indicators can be included in the local workflow with local methods applied, to facilitate decision-making and strategies to meet the future. However, water management is always done at the local scale while the service provide pan-European model results, which often request some tailoring approaches by the users before applying them. SWICCA is based on user co-design with 15 case studies across Europe where this is evaluated for user-uptake. The presentation will give an on-line demonstration of the service and the user feed-back so far. The main lessons learned regarding user-uptake is the substantial need of: (1) user guidance, (2) training of engineering consultancies, and (3) key-messages of climate change and confidence of results. SWICCA has therefore put a lot of efforts in providing tutorials, info sheets, metadata, summary statistics and key messages along with the indicators at the web interface.