EMS Annual Meeting Abstracts
Vol. 14, EMS2017-340, 2017

Estimating the added value of a climate service – from WSCA to CSCA

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Weather and climate services can be considered as a robust, no-regret adaptive climate change adaptation (CCA) measure, as they provide active resilience in current and future climates. Such information can be understood as a factor in a decision process aimed at maximizing the value or utility of a considered process or activity. A hypothetical maximum benefit potential of meteorological services can be estimated, assuming that perfect initial information (e.g. perfect weather forecast) is combined with 100% use among end users and 100% effectiveness of their responses. However, the actual level of realised benefits depends on the quality of the information, and the timeliness and ability of the involved users to respond to the information. (Perrels et al., 2013; WMO, 2012). For weather services this has been operationalized in the WSCA (Weather Service Chain Analysis) method. (Nurmi et al, 2013; Pilli-Sihvola et al 2016)

The actual value of the initial meteorological information stems from the use of the information and the extent to which the end users are able to interpret and use the information and transfer the benefits to other agents. An important aspect in the approximation of the actual level of realised benefits is the information decay in the service chain. Weather Service Chain Analysis (Nurmi et al., 2013; Perrels et al, 2013) aims at accounting for the inadequacies in the dissemination and use of weather information. The approach describes the decay of the benefit potential based on a decomposition of the information flow, ranging from information generation to benefit realization for the end-user and society as a whole. The WSCA set-up proved applicable and produced credible results (Nurmi et al 2013; Perrels et al 2013; Perrels et al 2012, Pilli-Sihvola 2015; Pilli-Sihvola et al 2016). Yet, it cannot be straightaway be applied to climate services.

In the H2020 project EU-MACS (http://eu-macs.eu/#) is explored how a Climate Service Chain Analysis would look like. In principle the same basic notion of information decay can be applied, but the model gets more complex, inter alia because several new notions have to be introduced, such as awareness, expected (not yet verified) benefits, and more differentiation in uncertainties.

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