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Operational irrigation forecasting service – example of collaboration between NHMS and regional agricultural advisory service

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Changed climate conditions in past decades caused interest and need for changes in agricultural practices. Changes in agricultural production and losses due to extreme events (mainly summer droughts) were so intense that the initiative for collaboration came from regional farmers associations. There is no irrigation tradition in Slovenia (except for some industrial crops like hop and some smaller regions such as the littoral) therefore there are many management problems and issues with water permits for irrigation (also) due to rising number of requests. There is also need for information on optimal irrigation scheduling. Soil moisture monitoring exists only on large cooperative irrigated plots. In order to manage distribution and timing of water distribution, there is also need for tailored weather forecast. Irrigation advisory system has to include combination of crop data, soil data and meteorological observation/forecasting data.

Most important factor in interactive collaboration is exchange of phenological data; information on crop development has to be gathered on site and forwarded to irrigation advisory system on regular basis. Apart from improvements of irrigation scheduling due to phenological observations, also irrigation type is taken into account due to implementation of different irrigation techniques.

System of provision of irrigation scheduling based on local phenological observation in case of Slovenia will be presented. Information exchange is assured according to agreed collaboration between the Slovenian Environment Agency (ARSO) acting as Slovene NHMS and regional agricultural chambers and is conducted via e-mails and web portal of ARSO. Operational irrigation forecasting model is run routinely in ARSO; comparison to local measurements and field experiments in framework of various projects are used to validate the advisory system. Recommendations regarding irrigation scheduling and quantities are then forwarded to regional agriculture advisory service and included in their regular bulletins – not only water quantity related advice, also other information related to crop yield improvement. This is also important added value of the collaboration.