

User needs for early recognition of droughts in Switzerland

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Early Recognition of Droughts

Drought monitoring, early warning, and forecasting is only a promising investment if it provides true benefits to water users. This is the starting point of the project “Early recognition of critical drought and low-flow conditions in Switzerland” (DROUGHT-CH).

The project links the characterization and early recognition of critical drought and low-flow conditions in Switzerland with the identification of the needs of end users, stakeholders and decision makers for developing a drought information platform (cf. figure 1).

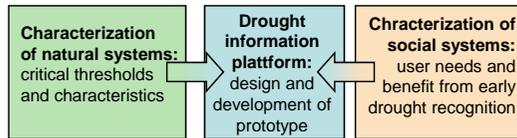


Fig. 1: Interlinking natural and social science research

Data and Methods

- questionnaire survey
- stakeholder workshop
- interviews

Representatives involved from the following sectors: agriculture, forestry, energy production, water supply, shipping, fishing, nature conservation.

Research Focus: User Needs & Potential Benefits

The main objectives of the user and stakeholder-oriented work packages are

- to assess the specific information needs of Swiss water user groups (WP1)
- to investigate potential benefits from early recognition for selected economic sectors (WP6).

First Results on User Needs (WP1)

Drought information needs

First results of the study give a rough picture of the most important variables for early recognition from the point of view of Swiss user groups (cf. table 1). The user-specific spatial and temporal characteristics of information which are necessary for benefiting from early recognition will be investigated in the further research.

Effective communication of drought information

Most user groups prefer an internet-based information platform which displays different variables in multiple spatial scales and time spans. Additionally, the information should be “tailored” to their specific needs and communicated via already existing sector specific information products e.g. bulletins or newsletter.

| Variables | Information needed | Relevant for Swiss user groups from the following sectors |
|---------------------------|---------------------------|---|
| Climate related variables | Precipitation | Agriculture (arable farming), forestry, fishery, shipping, energy production (hydropower), water supply |
| | Evapotranspiration | Agriculture (arable farming, fruit and vegetable growing) |
| | Wind | Forestry |
| Water related variables | Water temperature | Nature conservation, fishery, energy production (heat exchange water) |
| | Ground water level | Agriculture (irrigation), water supply |
| | Surface water level | Agriculture (irrigation), shipping |
| | Water discharge of rivers | Nature conservation, fishery, water supply, energy production (hydropower) |
| Snow variables | Snow water equivalent | Shipping, water supply, energy production (hydropower) |
| Soil related variables | Soil moisture | Nature conservation, agriculture (arable farming, fruit and vegetable growing), forestry |
| | Fine-fuel moisture | Forestry |
| Vegetation | Vegetation vitality | Forestry |

Table 1: Most important information for drought affected user groups (WP1)

Conclusion & Next Steps

A diverse set of variables needs to be included in a comprehensive information platform which considers information requirements of all user groups. In a next step we will differentiate the user needs conducting an in-depth analysis for selected user groups (i.e. agriculture, forestry, water management). The focus lies on possible adaptation options and potential benefits of early recognition (WP6).

DROUGHT-CH Project Information

Project Title: Early recognition of critical drought and low-flow conditions in Switzerland

WP1: Critical drought indicators for different water users

WP6: Economic benefit of early recognition of drought

Project duration: Jan. 2010–Dec. 2012

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Lauber n.d.



Dosen 2006



Reimann 2003

Collaborations

Exchange with

IWAGO on water policies

AGWAM on drought impacts on agriculture