

EGU21-1134

<https://doi.org/10.5194/egusphere-egu21-1134>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## Selecting indicators of drought impacts: the importance of context

Sarra Kchouk<sup>1</sup>, Pieter van Oel<sup>1</sup>, and Lieke Melsen<sup>2</sup>

<sup>1</sup>Wageningen University, Water Resources Management, Wageningen, Netherlands (sarra.kchouk@wur.nl)

<sup>2</sup>Wageningen University, Hydrology and Quantitative Water Management Group, Wageningen, Netherlands (lieke.melsen@wur.nl)

Drought Early Warning Systems (DEWS) and Drought Monitoring Systems (DMS) are the principal tools used to tackle drought at an early stage and reduce the possibility of harm or loss. They are based on the use of drought indicators attributed to either : meteorological, agricultural and hydrological drought. This means that it is mostly hydro-climatic variables that are used to determine the onset, end and severity of a drought. Drought impacts are rarely continuously monitored or even not included in DEWS and DMS. In this configuration, the likelihood of experiencing impacts is linearly linked to the severity of climatic features only. The aim of our study is to question the direct linkage between the delivery of hydro-climatic information and the detection of drought impacts and their severity. We reviewed scientific literature on drought drivers and impacts and analyzed how these two compare. We conducted a bibliometric analysis based on 4000+ scientific studies sorted by geographic area in which selected (i) drought indicators and (ii) impacts of drought were mentioned. Our review points toward an attachment to a conceptual view of drought by the main and broader use of meteorological (computed and remotely sensed) drought indicators. Studies reporting impacts related to food and water securities are more localized, respectively in Sub-Saharan Africa and Australasia. This mismatch suggests a tendency to translate hydroclimatic indicators of drought directly into impacts while neglecting relevant local contextual information. With the aim of sharpening the information provided by DEWS and DMS, we argue in favor of an additional consideration of drought indicators oriented towards the SDGs.