

A Science-Policy Assessment of the Effect of Severe Droughts Using A Decision-Theoretic Approach: Case study of Syria

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ABSTRACT

Syria is particularly vulnerable to severe drought episodes, thus managing drought cycles as an extreme event with low probability in Syria is a challenging and distinctive case. The available literature shows the imperfect characteristics of the relevant knowledge and information (K&I) heterogeneous, scarce, and uncertainty-laden. Thus, we use a decision-theoretic approach to mitigate some of these problems. This systematic and causal approach is composed of two components. A Factor Trees Model (FTM), is structured in terms of hierarchy of variables with three drought's distinguishing features and its linkages to people's livelihood in Syria. A Quasi-Bayesian Method is used to assess the relative quality and reliability of two reports which discussed the Syrian case based on the FTM factors. The results sketch a scheme of drought risk assessment streams can categorize a given report, compare reports, and update the flow of information adaptively as new scientific evidence is obtained. The need for further research is essential to evolve this approach to decrease the uncertainty in each stream of knowledge to better inform policymakers.

Keywords: Drought, Factor Trees Model, Knowledge & Information, Quasi-Bayesian analysis, Syria.