

DROUGHT VULNERABILITY ASSESSMENT IN TAIWAN

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Droughts can cause severe environmental and social impacts. They do not frequently happen in Taiwan, but they may result in significant consequences in the isolated island. In the recent years, Taiwan has been experiencing drastic weather extremes, including severe drought, enhanced heatwave and irregular-occurrence typhoon, likely associated with the consequences of climate change. However, assessment of vulnerability to drought in Taiwan is still limited especially under the context of fast-evolving climate change. Besides, it is complex to form the indicators in order to develop the framework for the drought vulnerability assessment. Here, we focus on the drought vulnerability mapping for Taiwan by using 11 indicators organized into three dimensions, including exposure, sensitivity and adaptive capacity. The vulnerability to drought is classified into five levels, namely *low*, *medium low*, *medium*, *medium high*, and *high*. Freely accessible satellite imagery data and open-source census data were utilized. The analysis for each dimension is performed with vulnerability index generated and compared with the *in situ* data or outcomes previously published. Results reveal that vulnerability to drought in Taiwan greatly varies from *low* to *high* levels with 25.7% and 13.3%, respectively. This study provides an approach to assess the drought vulnerability with results that are potentially useful for the decision makers to mitigate the impacts and damages associated with droughts, enhance the adaptive capacity, and better plan the schedule with sufficient preparedness for the potentially affected regions.

Keywords: Drought, Vulnerability Assessment, Taiwan