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Supporting national reporting of drought hazard, exposure and vulnerability to track progress in drought adaptation, mitigation and management

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Droughts are known to be one of the most damaging and costly natural hazards as a result of their large spatial scale, creeping nature and long duration. They have widespread primary and secondary impacts, and as such, proactive drought management is crucial to mitigate those impacts. In order to do so, it is crucial to understand the drought risk in terms of the characteristics of the drought hazard, who or what is exposed to the drought hazard, and who (or what) is vulnerable to the effects of drought. Drought mitigation, adaptation and management was adopted as one of five strategic objectives under the United Nations Convention to Combat Desertification (UNNCD) 2018-2030 Strategic Framework. Country Parties to the UNCCD agreed a monitoring framework and a range of indicators in order to track progress towards this objective.

Here we present new guidance created to help Parties to the UNCCD report on their progress towards Strategic Objective 3 'To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems'. Progress is monitored using three indicators, characterising the three fundamental components of risk: drought hazard, exposure to drought and vulnerability to drought. The three indicators, as agreed by Parties to the UNCCD, are:

- Trends in the proportion of land under drought over the total land area,
- Trends in the proportion of the total population exposed to drought, and
- Trends in the degree of drought vulnerability.

Acknowledging the need for global applicability, the methods recommended to calculate these three indicators balance state-of-the-art science with relative simplicity, whilst also meeting the requirements set out in official UNCCD Decisions, guidelines of the World Meteorological Organization, and where possible utilising datasets used for other reporting activities (e.g. the Sustainable Development Goals).

The recommended methods for each indicator are illustrated using contrasting case studies from the UK and Thailand, utilising the recommended globally available datasets to calculate the three indicators listed above. In-country data are also used, where available, to calculate the indicators,

highlighting the benefits of increased spatial resolution, and/or sensitivity to assessing changes in drought hazard, exposure or vulnerability over time. Finally, opportunities for the future of national reporting on drought risk are discussed.