Good Practice Guidance for SO3

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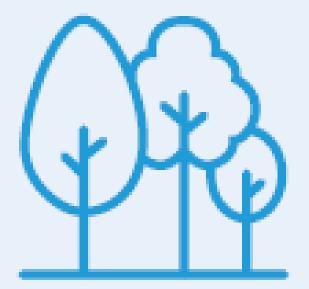




Strategic Objective 3

STRATEGIC OBJECTIVE 3:

To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems.



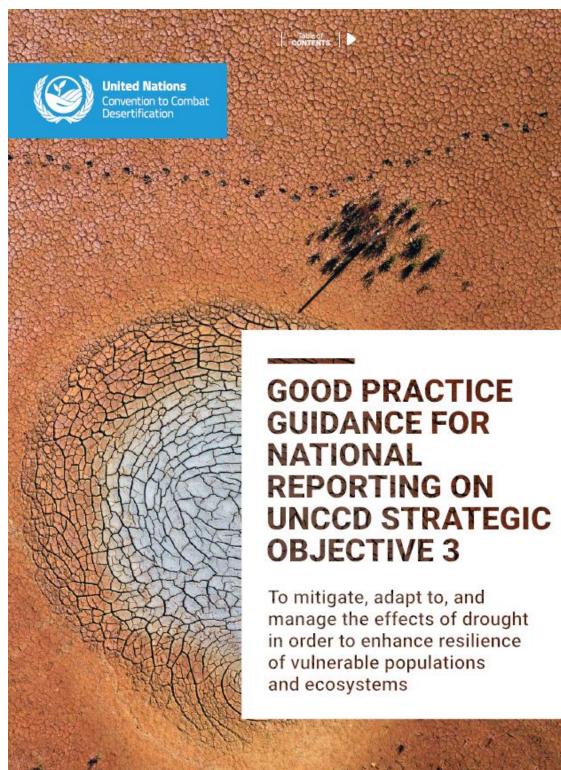


EXPECTED IMPACT 3.1: Ecosystems' vulnerability to drought is reduced, including through sustainable land and water management practices.

EXPECTED IMPACT 3.2: Communities' resilience to drought is increased.



UK Centre for Ecology & Hydrology https://www.unccd.int/resources/manuals-and-guides/good-practiceguidance-national-reporting-unccd-strategic-objective-3





United Nations Convention to Combat Desertification





Strategic Objective 3 Indictors

Level

• 4 year reporting cycles – first one 2016-2019

Table 1

Summary of the indicators and the basis for the metrics/proxies relevant to each of the three levels of the proposed drought indicator and monitoring framework as given in the Annex to Decision 11/COP.14

• Baseline period 2000-2015



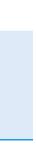
Level 1 -Simple drought hazard indicator

Level 2 – Simple drought exposure indicator

Level 3 -Comprehensive drought vulnerability indicator

* The description provided for the candidate metrics/proxies should be considered preliminary as these will evolve through a multilateral process such as the World Meteorological Organization Global Multi-Hazard Alert System framework. This will help ensure progress towards the collaborative development of standards in methods and data supported by good practice guidance, as well as national ownership of the reporting process.

Progress indicator	Basis for candidate metrics/proxies*
Trends in the proportion of land under drought over the total land area	World Meteorological Organization Global Drought Indicator ²⁵ (standardized into classes) monitored and mapped monthly, and aggregated for the United Nations Convention to Combat Desertification reporting period.
Trends in the proportion of the population exposed to drought of the total population	Percentage of the population exposed to each drought class defined in Level 1.
Trends in the degree of drought vulnerability	Composite index of relevant economic, social, physical and environmental factors that contribute to drought vulnerability.



Methodological requirements

- Methods had to have been reviewed in the scientific literature
- Make use of existing guidance and international agreements on data, methods etc.
- Use open globally available datasets, but allow Parties to use incountry datasets where available and suitable
- Be simple to calculate and interpret



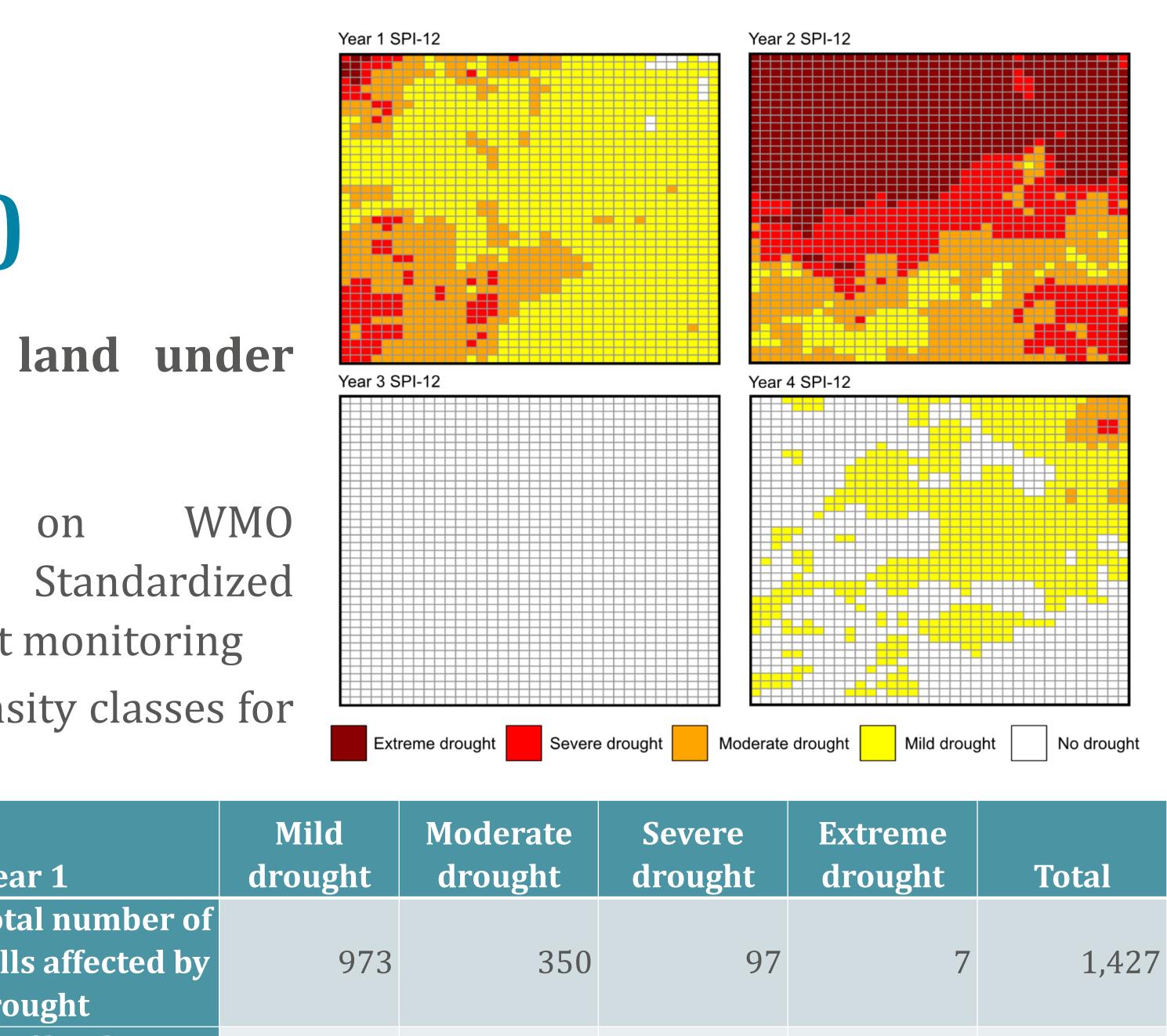


Level 1 Indicator calculation (Hazard)

"Trends in the proportion of land under drought over the total land area"

- Relatively simple, based on recommendations to use the Precipitation Index (SPI) for drought monitoring
- % of land area in four drought intensity classes for each year

SPI values	Drought intensity class	Year 1 Total number o
0 to -0.99	Mild drought	cells affected by
-1.0 to -1.49	Moderate drought	drought
-1.5 to -1.99	Severe drought	% of land area
-2 and less	Extreme drought	under drought



24.3

67.6

6.7



0.5

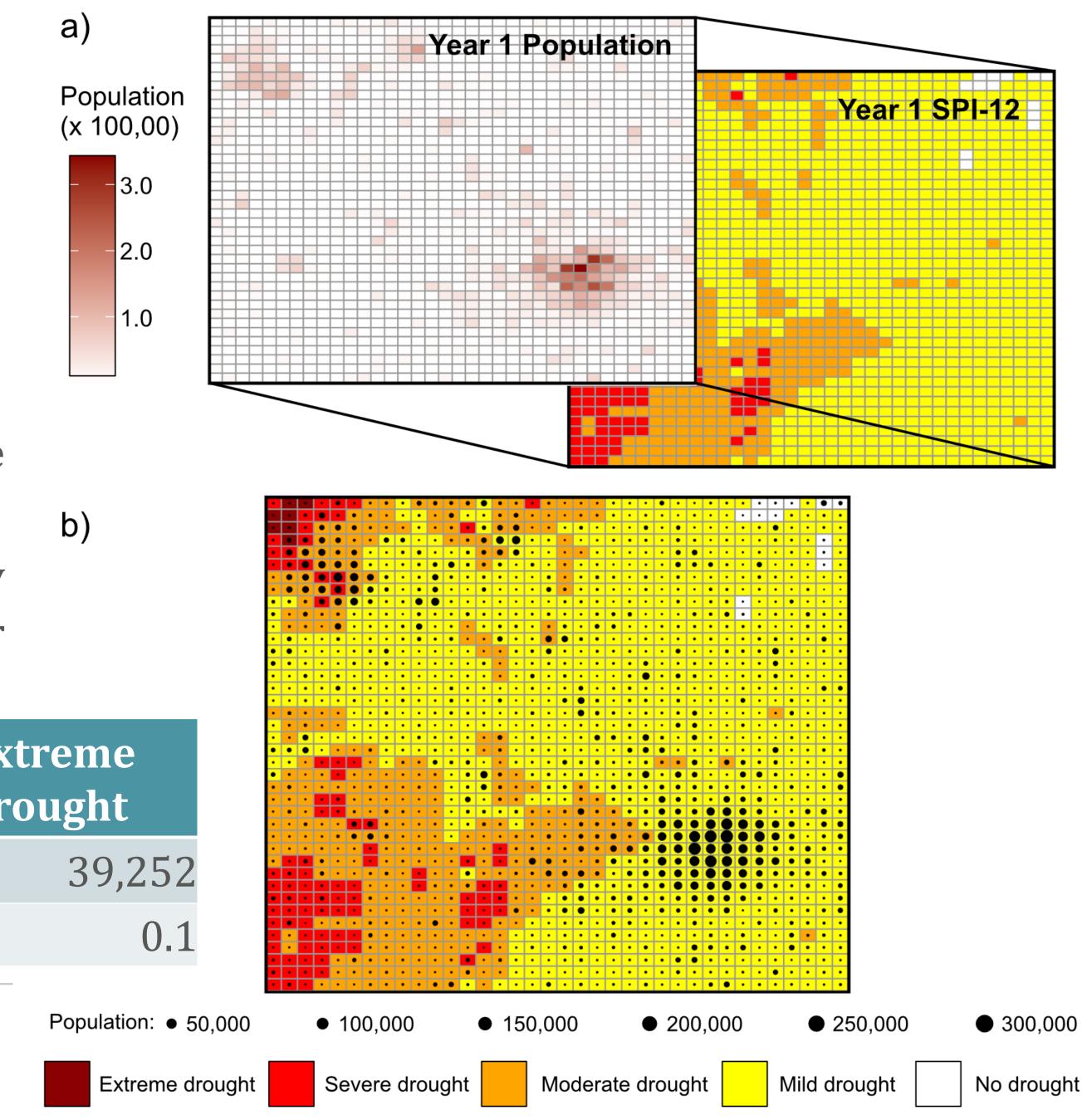
Level 2 Indicator calculation (Exposure)

"Trends in the proportion of the total population exposed to drought"

- Overlays gridded population data with the outputs from the Level 1 Indicator
- % of population in the four drought intensity classes (total + optional male/female) for each year

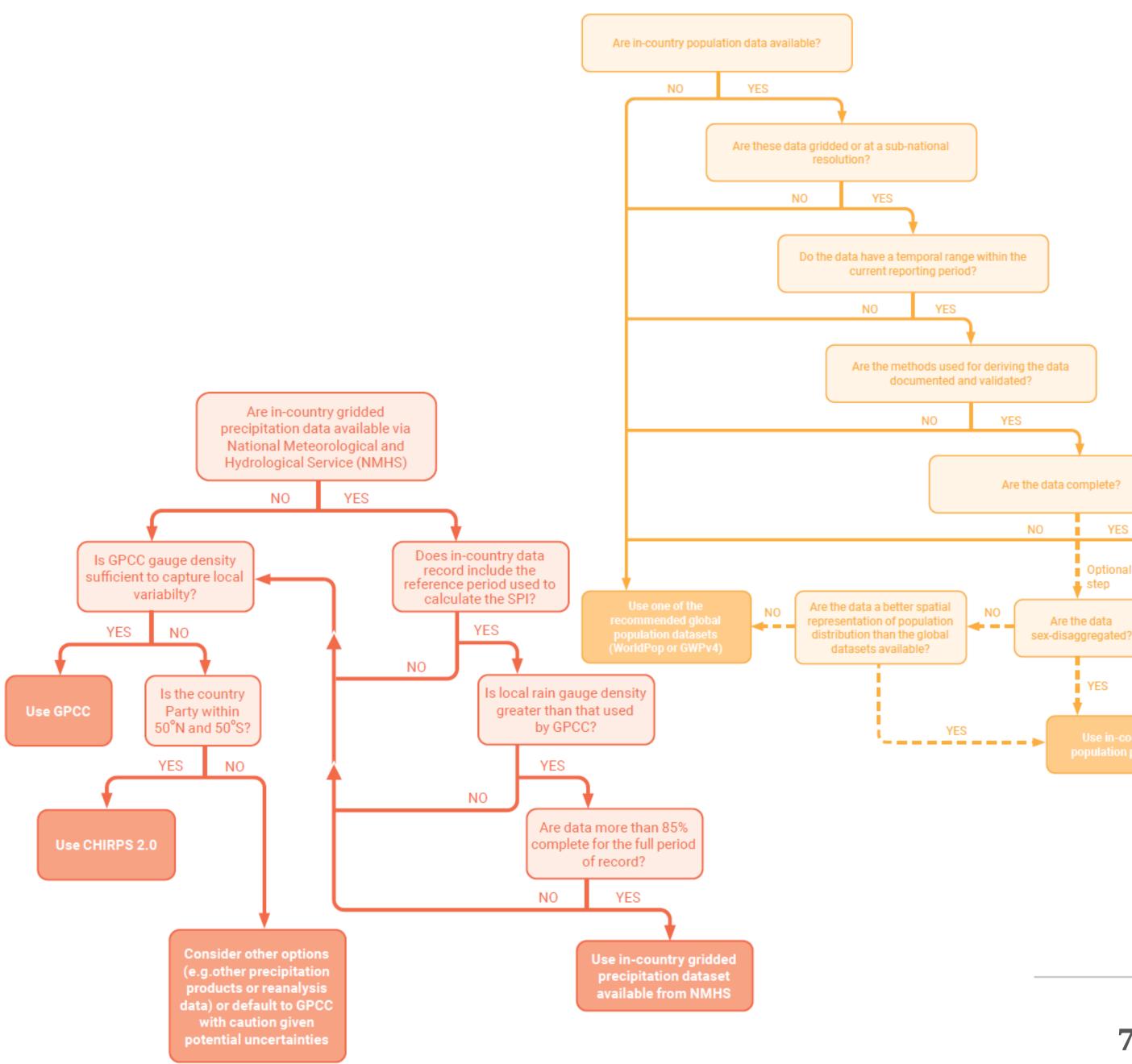
Year 1	Mild drought	Moderate drought	Severe	Ex
			arougnt 1,101,441	dr
%	76.8	• •	• •	





Level 1 & 2 Data

- Guidance whether Parties should use incountry data or the global recommended data sets
- Based on quality, resolution, period of record, trust...









... but what about vulnerability?!

- There is much less agreement in the literature on **how** to assess drought vulnerability
- There is lots of variability in the methods and the datasets used

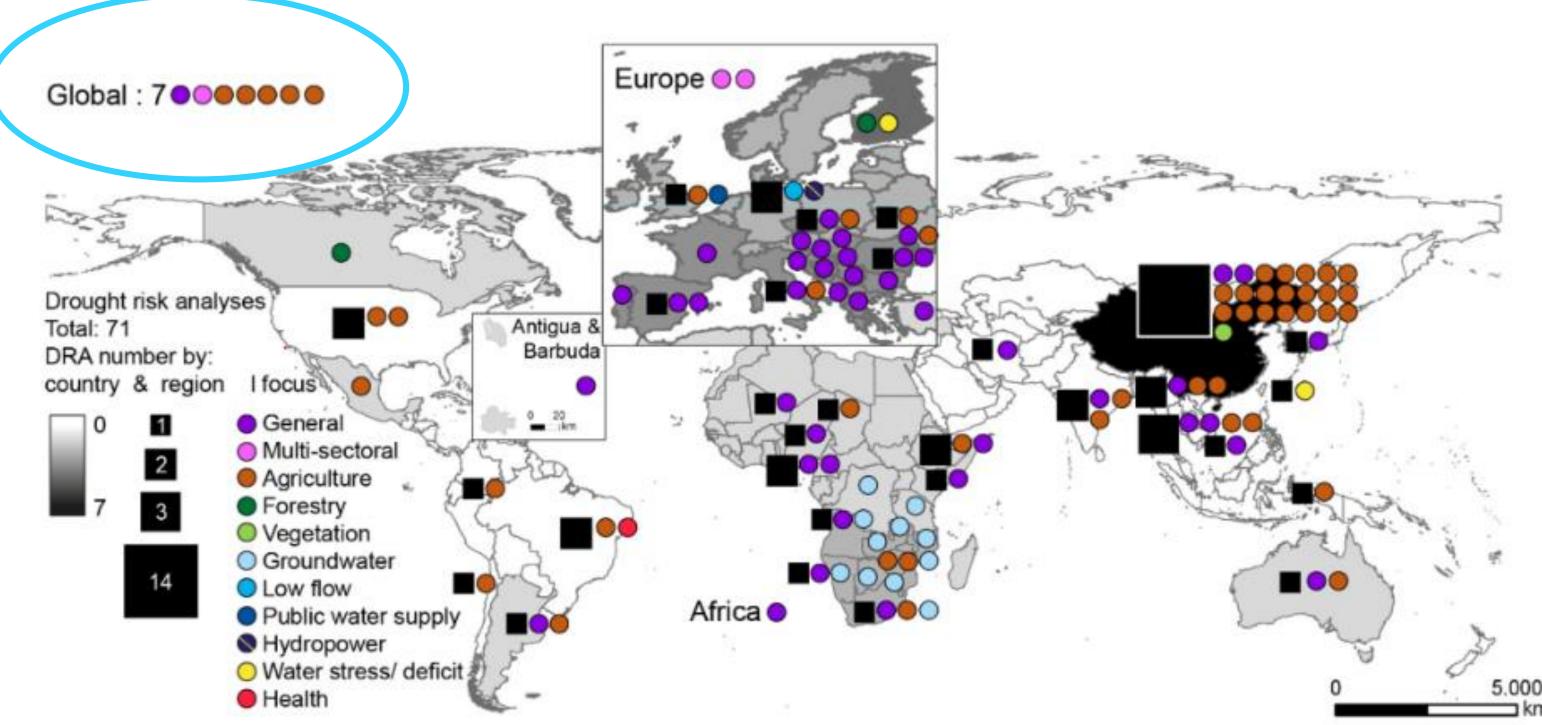
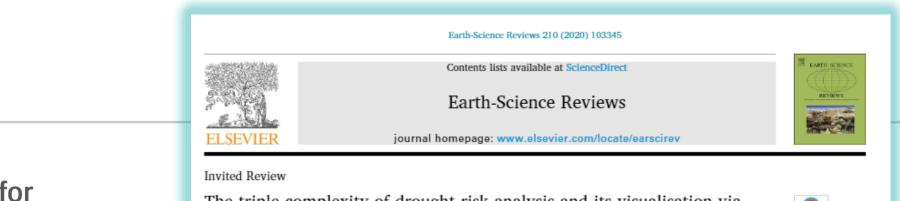


Fig. 1. Drought risk analyses around the globe, summed by country (including regional analyses in the country) and regional scale.



The triple complexity of drought risk analysis and its visualisation via mapping: a review across scales and sectors





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OP Publishing	Environ. Res. Lett. 14 (2019) 083002	https://doi.org/10.1088/1748-9326/
	Environmental Research Letters	
CrossMark	TOPICAL REVIEW	
•	_ Drought vulnerability and risk assess	ments: state of the art,
OPEN ACCESS	persistent gaps, and research agend	а
RECEIVED 12 December 2018	Michael Hagenlocher 8 , Isabel Meza 8 , Carl C Anderson	1 ² . Annika Min ¹ . Fabrice G Renaud ² (0).
REVISED 14 March 2019	Yvonne Walz ¹ , Stefan Siebert ³ and Zita Sebesvari ¹	· · · · · · · · · · · · · · · · · · ·
ACCEPTED FOR PUBLICATION	¹ United Nations University, Institute for Environment and Human Secu 53113 Bonn, Germany	rity (UNU-EHS), UN Campus, Platz der Vereinten Nation
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22 July 2019	³ Department of Crop Sciences, University of Göttingen, Von-Siebold-Sti	Process B D 37075 Catting on Community

Blauhut, 2020







Drought Vulnerability Index (DVI)

Social

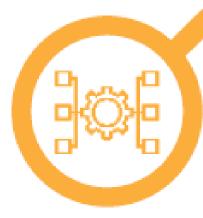
Factors concerned with the well-being of individuals, communities and society



Economic

Factors highly dependent upon the economic status of individuals, communities and nations





Infrastructural

Factors representing the basic infrastructures needed to support the production of goods and sustainability of livelihoods



0=not vulnerable 1= most vulnerable

Drought Vulnerability Index



Contents lists available at ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

Mapping global patterns of drought risk: An empirical framework based on sub-national estimates of hazard, exposure and vulnerability^{*}

<u>Hugo</u> Carrão^{*}, Gustavo Naumann, Paulo Barbosa

European Commission (EC), Joint Research Centre (JRC), Via Enrico Fermi 2749, 21027 Ispra, VA, Italy



Level 3 Indicator calculation (Vulnerability)

"Trends in the degree of drought vulnerability"

- Slightly modified DVI calculation: normalising data in time for each country
- Tiers of vulnerability assessment (VA) to account for varying levels of capacity and data availability
- To include options for sex-disaggregated data and sub-national datasets
- Calculated for each four-year period



Tier 1 VA

- Country level data
- At least 1 factor per vulnerability component

Tier 2 VA

- Country level data
- More than 1 factor per vulnerability component
- Disaggregated by sex (where applicable)

Tier 3 VA

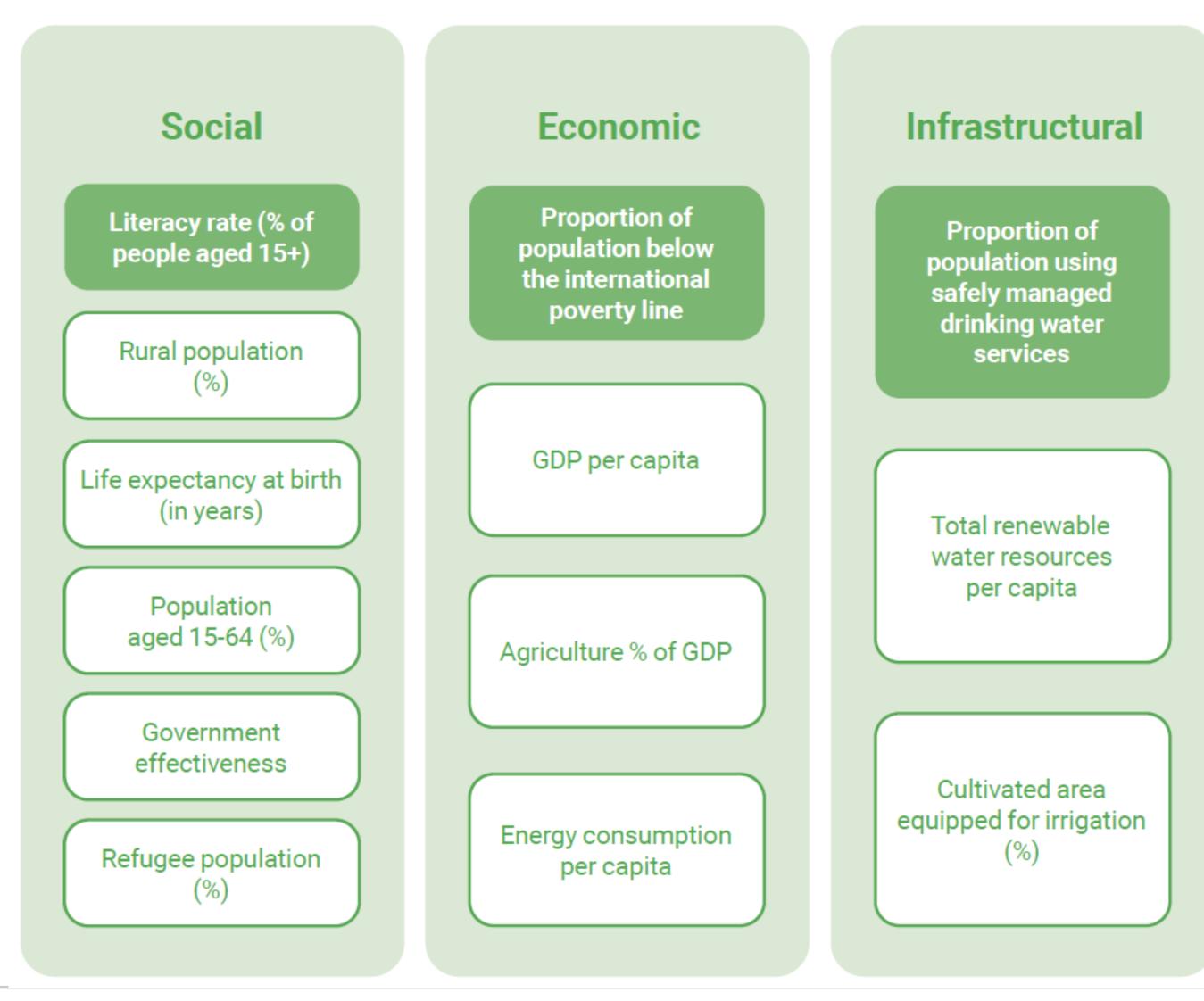
- Sub-national data
- More than 1 factor per vulnerability component
- Disaggregated by sex (where applicable)

Increased complexity and sensitivity of the DVI for SO3 monitoring



Level 3 data

- Uses national datasets reported to the UN for SDG monitoring and other reporting available for most countries
- Tier 1 VA factors highlighted







Limitations and possible future improvements

Level 1 Indicator (Hazard) Use SPEI as recommended default
Assess other drought types
Different timescales might be a better fit for impacts

Level 2 Indicator (Exposure) Include other aspects of exposure
Assess the exposure of ecosystems to drought
How to account for distant impacts of drought?

Level 3 Indicator (Vulnerability) Guidance on weighting factors/components
Guidance on validating vulnerability assessments
Include an assessment of ecosystem vulnerability



What happens next...?

- - of reporting...
- world linking with other projects



• Parties start reporting SO3 indicators in September this year • The GPG will be discussed at COP15 and CRIC 20 (May-October 2022) May need revising based on these discussions and after one round

• We are discussing opportunities for further work with UNCCD to address the challenges and limitations discussed in the GPG

• A paper applying the methods to several case studies around the





Thank you

Any questions?



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