



Supplement of

Lessons from the 2018–2019 European droughts: a collective need for unifying drought risk management

Veit Blauhut et al.

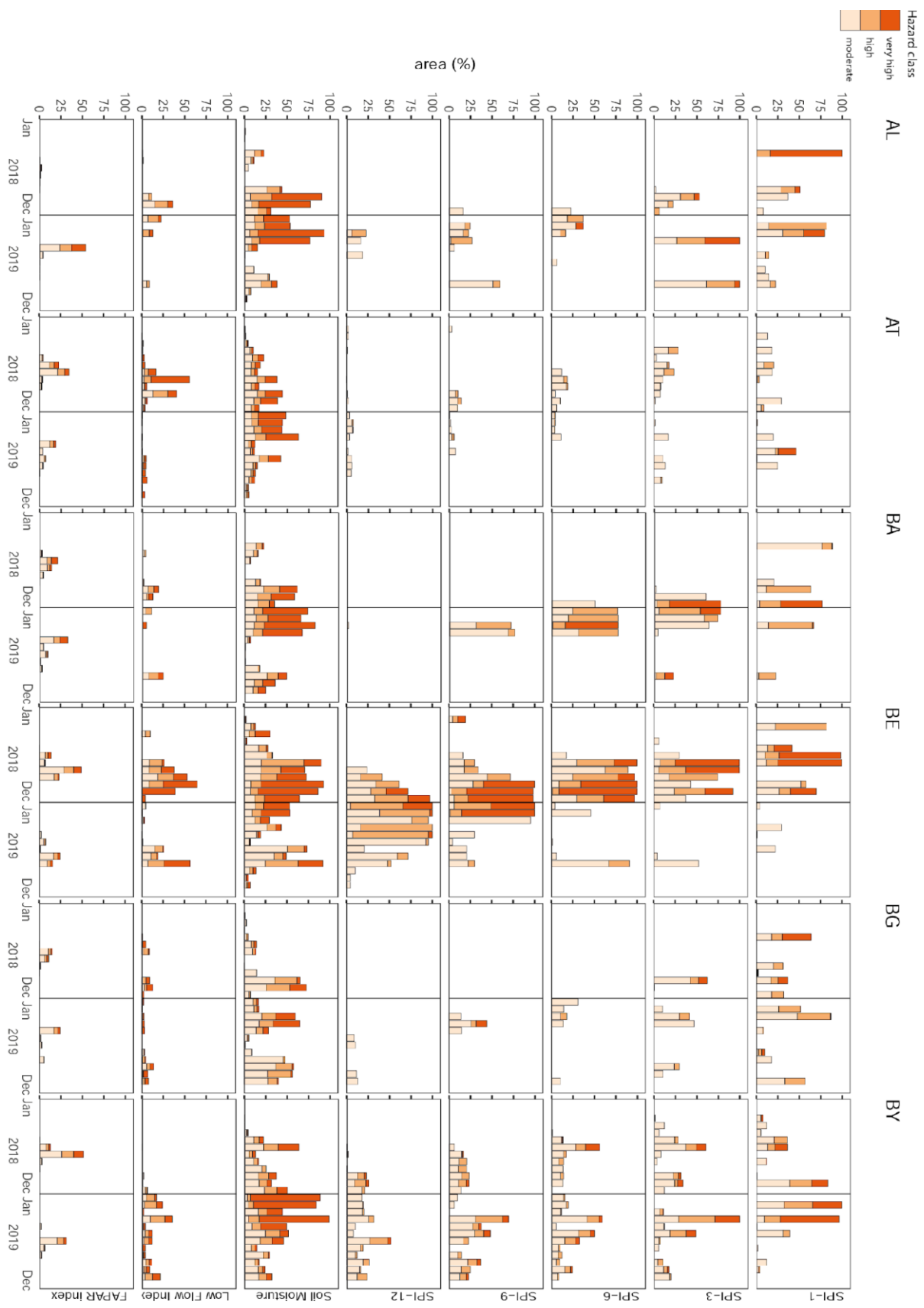
Correspondence to: Veit Blauhut (veit.blauhut@hydrology.uni-freiburg.de)

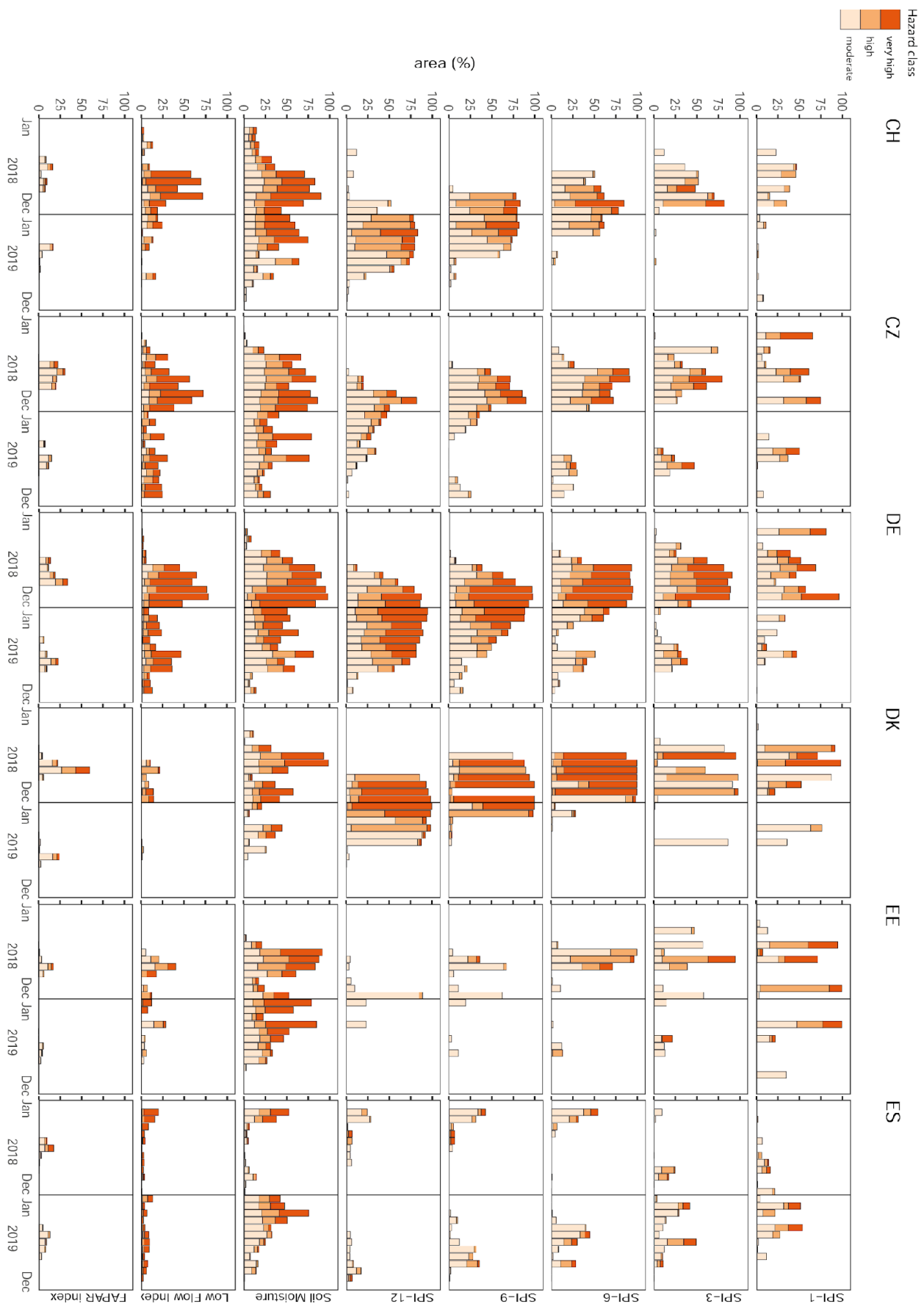
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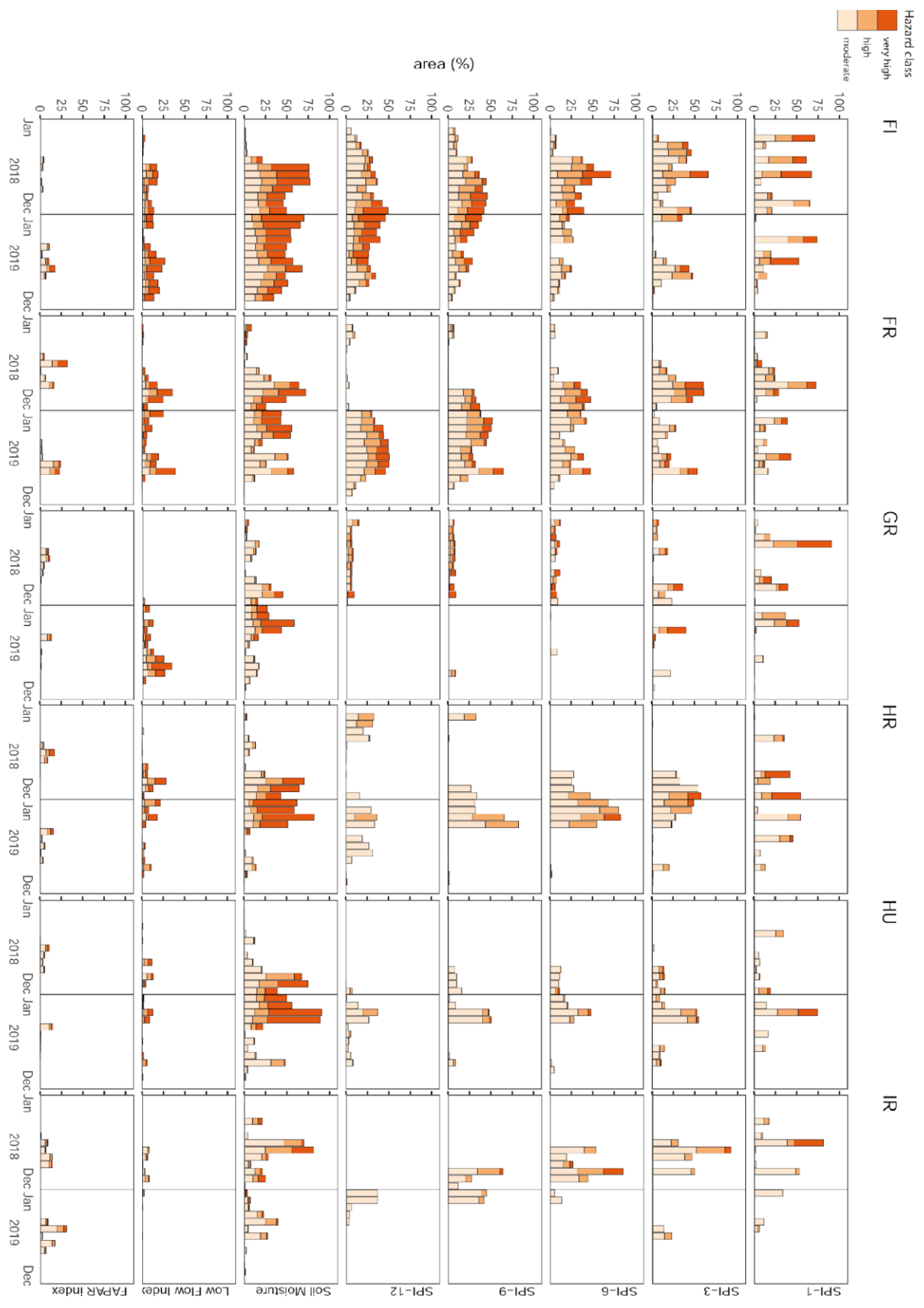
Supplements

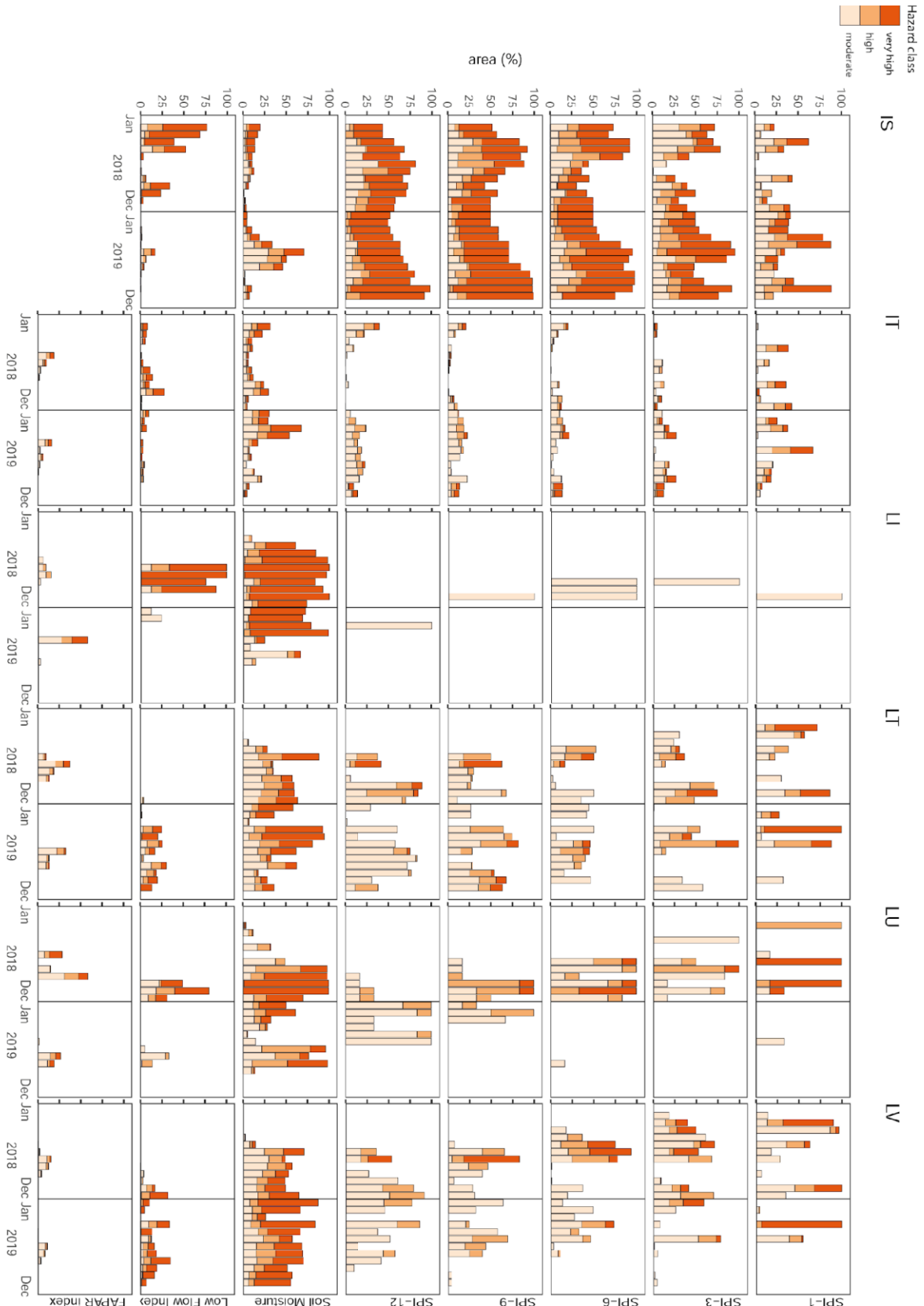
Introduction

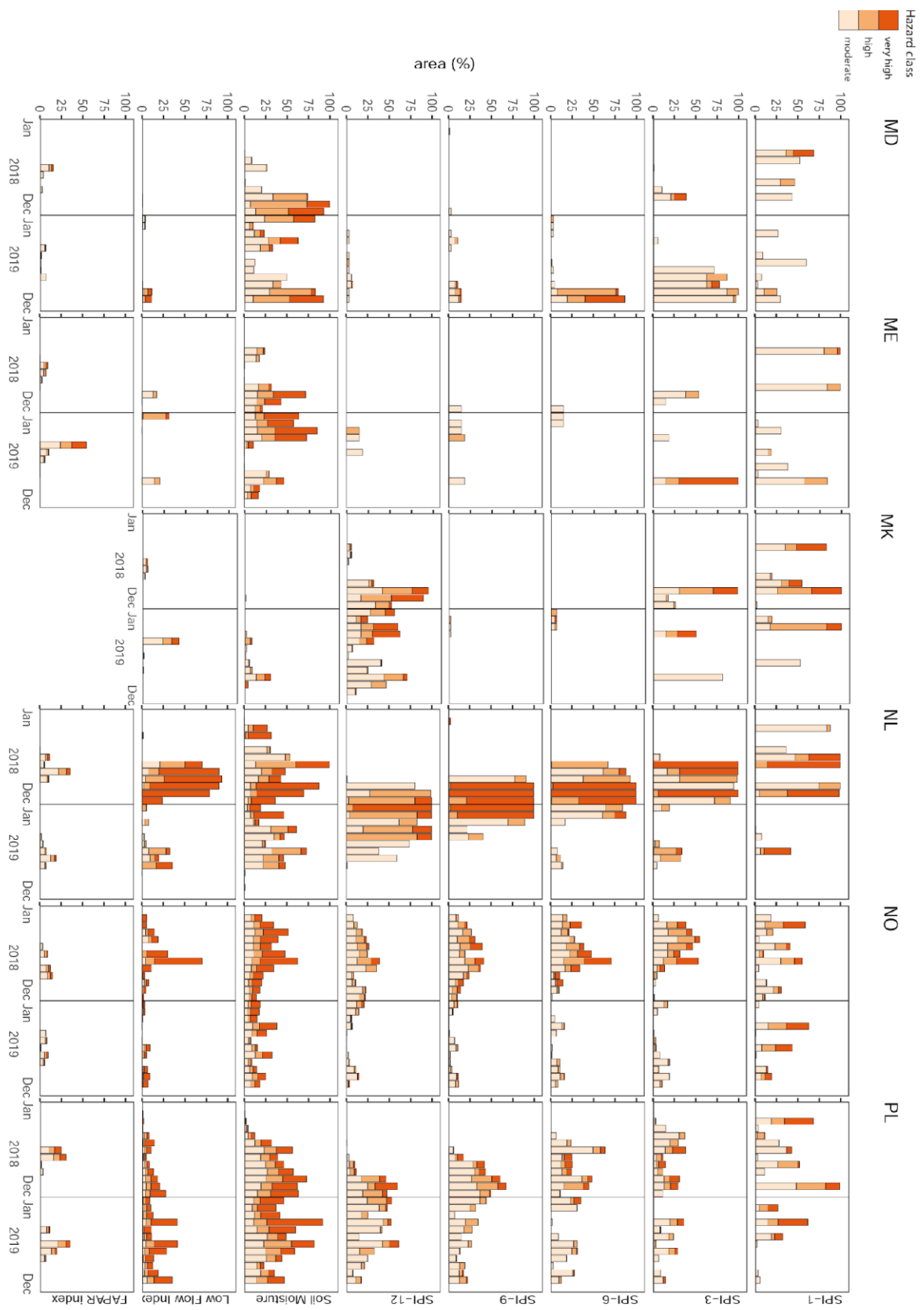
The tables and figures displayed in the main body present a synthesis and insights from the pan-European comparison of the hydro-climatic analysis and survey responses. Here, more detailed aspects of the hydroclimatic situation from 2018 to 2019 are presented in Fig. S1, and individual country-specific responses of the pan-European questionnaire are shown in Figs. S2-S6. The questionnaire as distributed to the participants (in English) is in Table S1. Table S 2 presents the number and share of participants by affiliation and country.

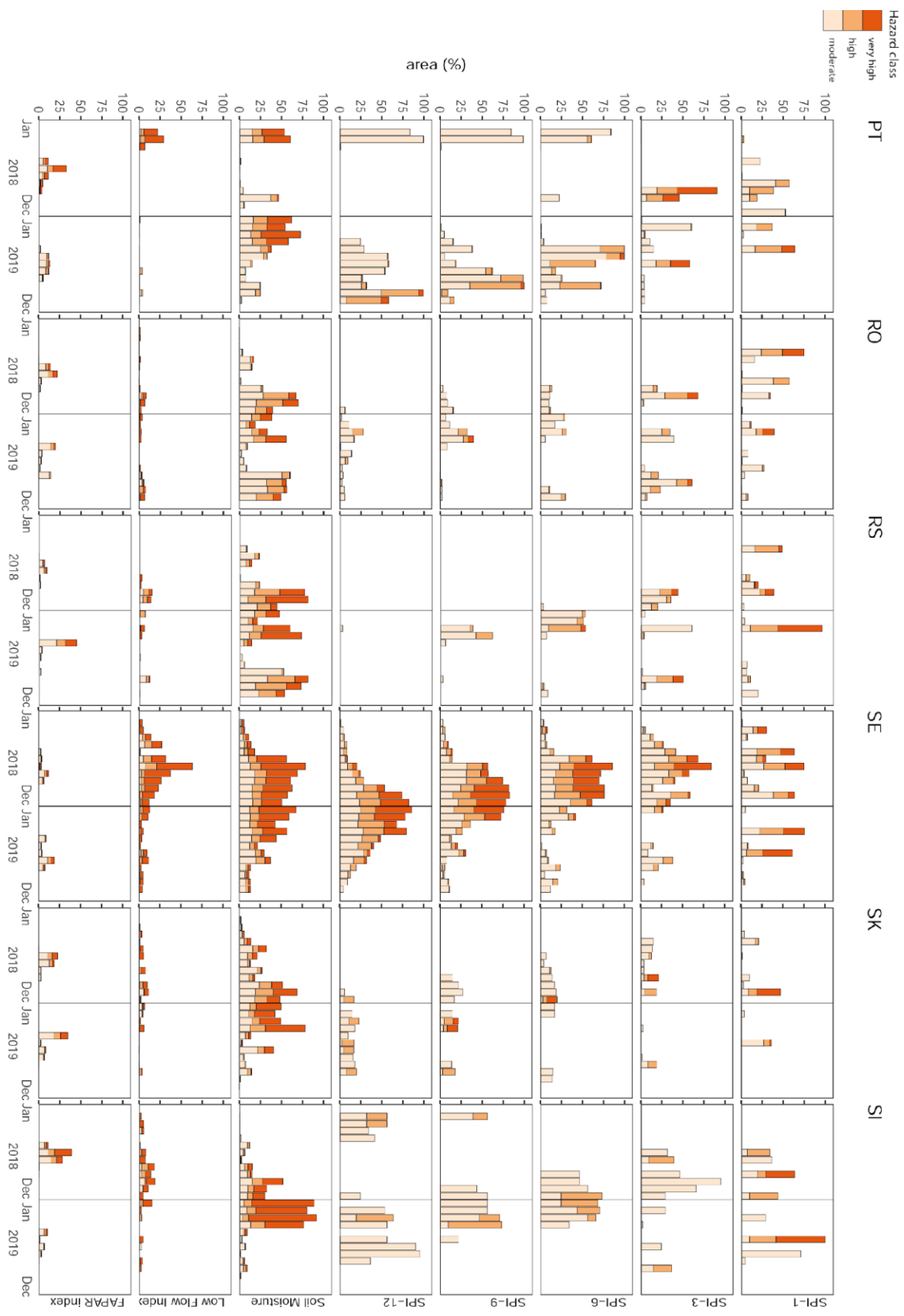












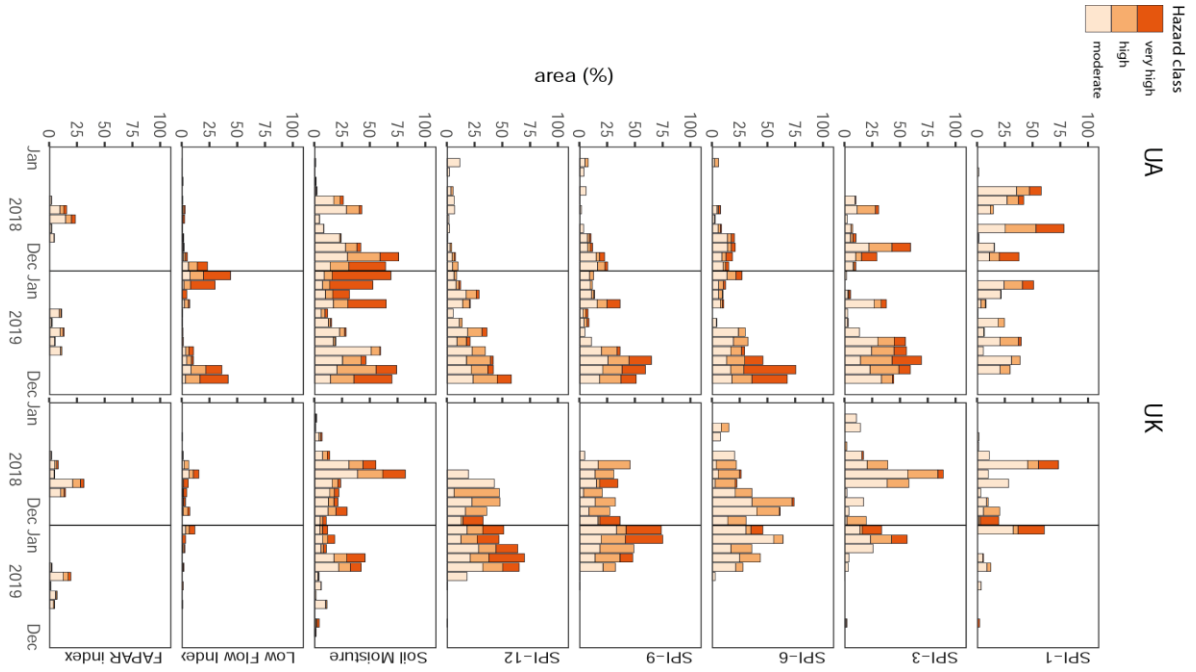
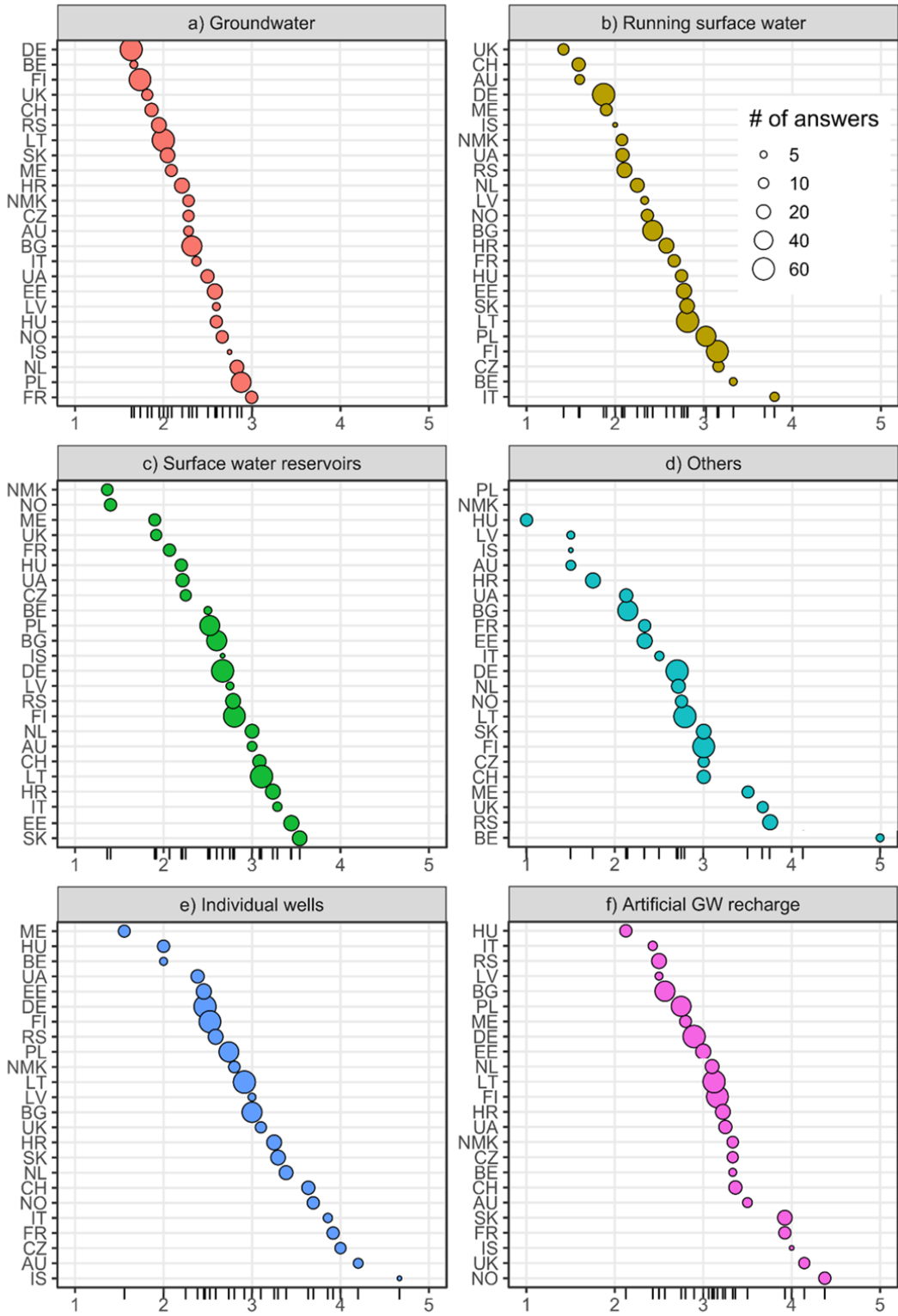


Figure S1. Drought hazard conditions for 2018-2019 by country and different drought indices: SPI, Soil Moisture (Index), Low Flow Anomaly and fAPAR are monthly averages of three 10-day intervals



<-- more important Mean ranking per country (-) less important -->

Figure S2: Importance of water resources by country; ordered by importance, for the sake of comparability Spain is not included here

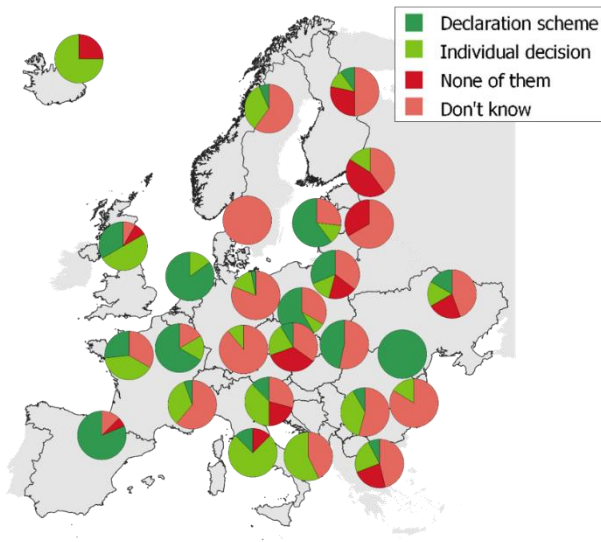


Figure S3: Existence of a country- or county wide drought declaration scheme

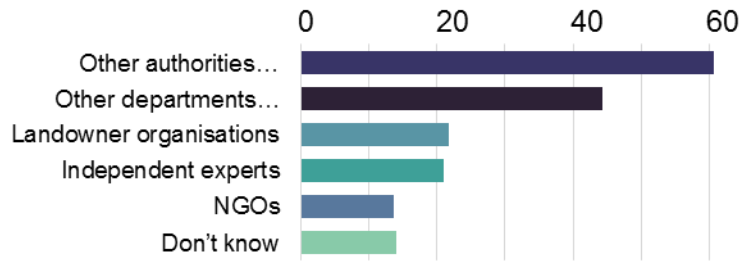


Figure S4: Overall percentage of participants that during drought collaborate with.

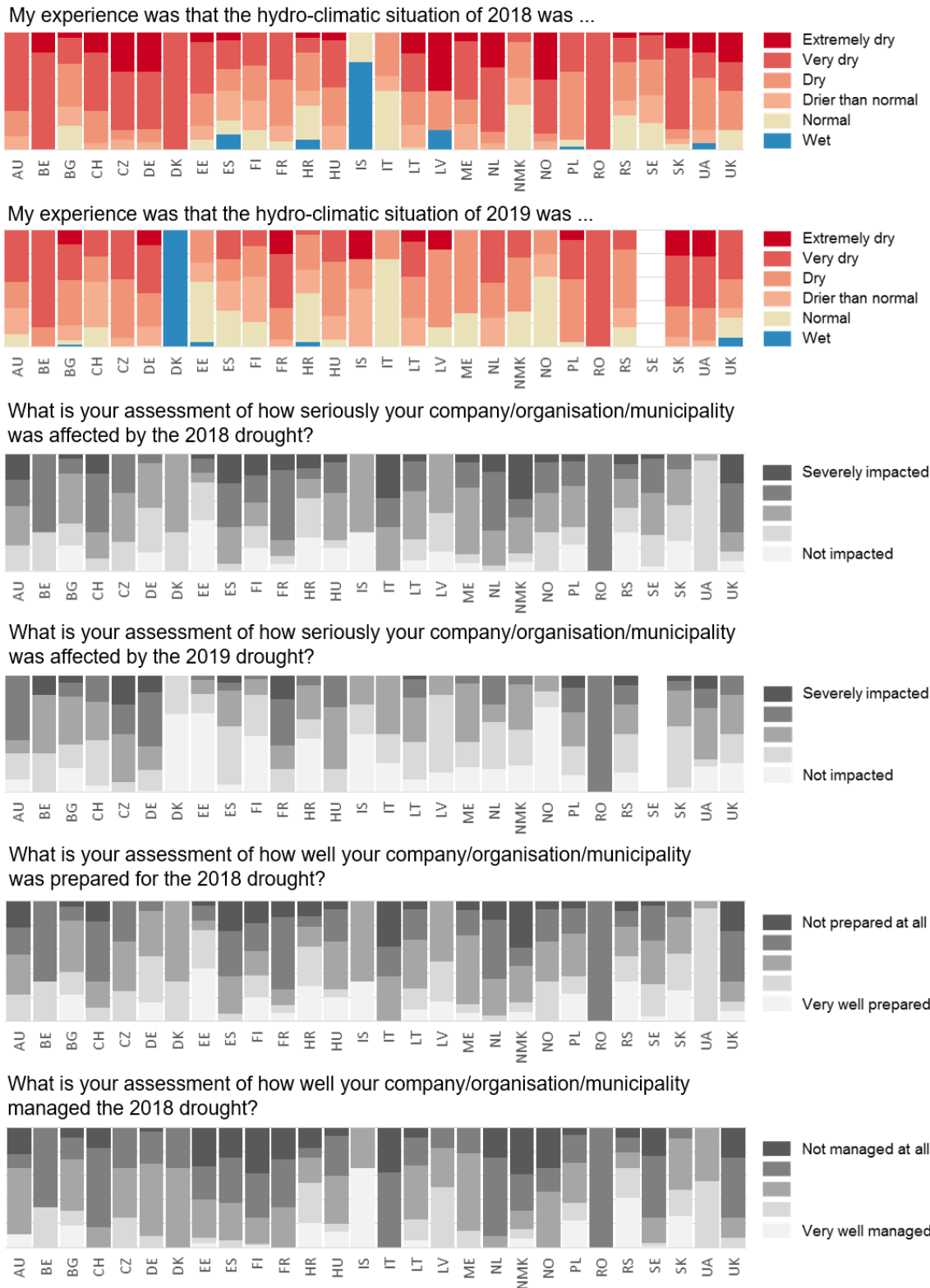


Figure S5: Country wise perception of the 2018 and 2019 drought events

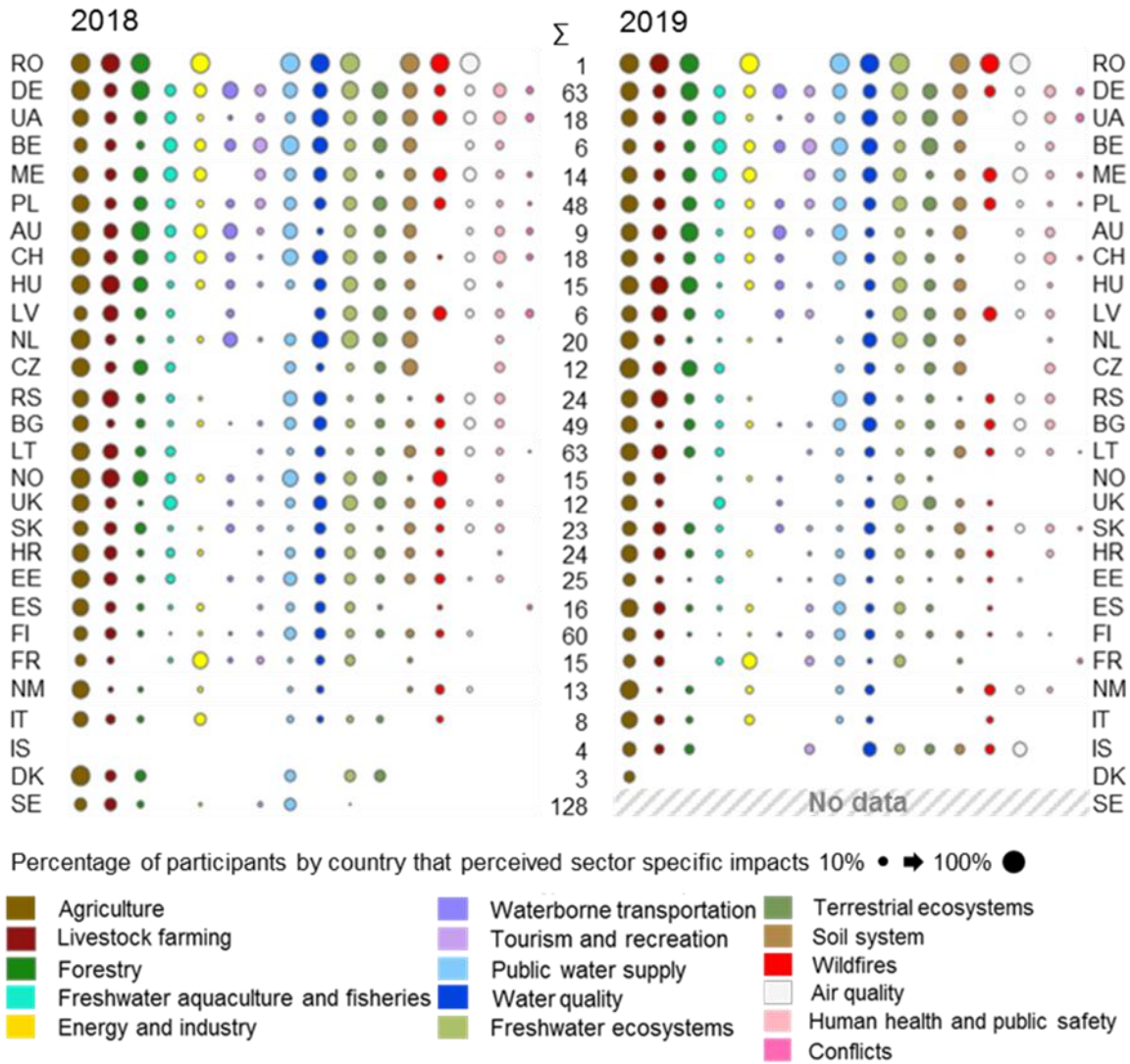


Figure S6: Percentage of participants that perceived drought impacts in their region by year and sector; Σ = number of participants by country, order by average percentage of impacts perceived.

Table S1. Questions of the pan-European survey in English. For each participating country, the survey was translated to local language(s). For the majority of questions, the possibility for additional free text reply was provided.

ID	Question
B	Background
B.0	What kind of organisation do you belong to?
B.1	In which country is your municipality/ company located
B.2	Which municipality do you work in
B.3	What is the major business/ role of your organisation?
B.4	What is your role in your organisation?
B.5	What type of main water resource do you have in your organisation/ municipality? Please rank your selections by importance (1 most important).
B.6	Do you in your municipality/ company consider how future climate change may affect water resources?
B.7	We assume that the occurrence of droughts in the future will...
B.8	Do you think that water providers in the future will have to regulate the distribution of drinking water to different consumers due to water shortages?
C	Applied concepts and terminology
C.1	Do you in your municipality/ company have an operational drought definition? If so, which physical indicators is the definition based on?
C.1.1	Please specify the applied drought definition and physical drought indices.
2	
C.2	In your country or county, does a governmental, operational drought declaration system exist or is the declaration of drought situations based on case specific decisions?
D	Drought management
D.1	In our work with droughts we collaborate with ... (multiple answers possible)
D.2	With regard to drought risk management do you in your municipality/ company currently have a ...(please specify)
D.3	Why is there no drought risk management plan? (multiple answers possible)
D.4	Do you have plans to introduce a drought risk management plan?
E	2018
E.1	My experience was that the hydro-climatic situation of 2018 was ...
E.2	What is your assessment of how well your organization/municipality managed the 2018 drought?
E.3	What is your assessment of how well your organization/municipality was prepared for the 2018 drought?
E.4	What is your assessment of how seriously your organization/municipality was affected by the 2018 drought?
E.5	Which sectors / services / businesses were negatively affected in your municipality by the drought during 2018? (multiple answers possible)
F	2019
F.1	My experience was that the hydro-climatic situation of 2019 was ...
F.2	Did your organisation/municipality manage the 2019 drought better than the year before?
F.3	Was your municipality/ organisation prepared better than 2018?
F.4	What is your assessment of how seriously your organization/municipality was affected by the 2019 drought?
F.5	Did the preceding drought of 2018 play a crucial role for the impacts of 2019?
F.6	Which sectors / services / businesses were negatively affected in your municipality by the drought during 2019?

Table S 2, Number and share of participants by affiliation and country.

Country	Govern. authority	NGO/ charity	Private company	Public company	Scientific institution	Other...	Total
AU	56%		22%		22%		9
BE	67%					33%	6
BG	57%		37%			2%	49
CH	94%					6%	18
CZ	25%	17%	50%			8%	12
DE	95%	2%	3%				63
DK	100%						3
EE	68%	12%	4%			16%	25
ES	69%		13%			19%	16
FI	87%	2%	12%				60
FR	27%		73%				15
HR	46%	13%	8%	4%	17%	13%	24
HU	40%		47%		13%		15
IS	25%	25%			50%		4
IT	63%		13%			25%	8
LT	95%					5%	63
LV	50%	33%				17%	6
ME	79%				7%	14%	14
NL	85%		10%			5%	20
NMK	69%		15%			15%	13
NO	87%		13%				15
PL	56%		4%		4%	35%	48
RO	100%						1
RS	63%	4%	25%		8%		24
SE	100%						128
SK	30%	26%	43%				23
UA	22%	33%	17%		28%		18
UK	58%	8%	33%				12
Sum	74%	4%	13%	0%	3%	6%	712