

Table S1. Details for metrics B to D as used in Chapter 2. The corresponding scores are based on subjective assessment by the authors (i.e. each author has provided the scores for his/her geographic region of expertise), details are found on the following page. For each thematic block (e.g. B.I, B.II, etc.), the mean score is computed. The mean of these thematic block scores are then plotted in Figure 2 for each metric (i.e. B, C and D), whereas the minima and maxima of the range bars in Figure 2 refer to the minimum and maximum thematic block scores (e.g. minimum / maximum of B.I, B.II, B.III and B.IV for metric B).

Metric	Thematic block	Detail question	
B Water management capacity	I Institutional capacity	1 Institutional barriers (such as competences scattered across different offices or ministries) (1=many, 5=few)	
		2 Authority of management institutions to change operating policies (1=not possible / no management authority, 5=high freedom)	
	II Political conditions	1 Political obstacles such as weak government or corruption (1=many, 5=few)	
		2 Level of international cooperation for transboundary rivers (1=poor, 5=good)	
	III Manager competence (education, training, experience)	1 Access to infrastructure such as computer and internet resources (1=low, 5=high)	
		2 Competence to run scenarios and models (1=poor, 5=high)	
		3 Competence to interpret scenarios and models (1=poor, 5=high)	
		4 Ability to implement and refine water resources decision support systems (1=poor, 5=high)	
		5 Level of water resources management already in place (1=poor, 5=good)	
		6 Level of adaptation strategies already in place (as compared to what is likely to be necessary) (1=poor, 5=good)	
	IV Knowledge transfer with researchers	1 Mandate to work collaboratively with researchers (1=not possible, 5=high freedom)	
		2 Availability of funding for commissioning researchers with specific studies (1=poor, 5=good)	
		3 Access to results from hydrological modelling (1=poor / no modelling available, 5=good)	
		4 Access to results from hydrological modelling applied to specific water resources systems (1=poor / no modelling available, 5=good)	
	C Scientific capacity – national	I Boundary conditions for research	1 Availability of funding (e.g. national science foundations, national ministries, regional governments) (1=poor, 5=good)
			2 Presence of research centres (e.g. university with environmental sciences or engineering department)
II Competence in research		1 Knowledge of water resources systems and operating policies (1=poor, 5=good)	
		2 Knowledge of important regional specific features of the region (e.g. monsoon, teleconnections, marked topography) (1=poor, 5=good)	
		3 Experience in applied, integrated research linking climate, hydrology, and water resources impacts and adaptation (1=poor, 5=good)	
III Data availability and access		1 Access to observed meteorological data for regional research (1=poor / no data available, 5=good)	
		2 Cost of observed meteorological data for regional research (1=expensive / no data available, 5=free)	
		3 Access to observed hydrological data for regional research (1=poor / no data available, 5=good)	
		4 Cost of observed hydrological data for regional research (1=expensive / no data available, 5=free)	
IV State of knowledge		1 Availability and implementation of appropriate climate downscaling approaches (1=poor, 5=good)	
		2 Implementation of hydrologic models (1=poor, 5=good)	
		3 Application of hydrologic models to specific water resources systems (1=poor, 5=good)	
D Scientific capacity – international	I Boundary conditions for research	1 Availability of funding for internationally oriented research with focus on the region (e.g. from EU, NASA, USGS, World Bank) (1=poor, 5=good)	
		2 Presence of research centres (e.g. university with environmental sciences or engineering department)	
	II Competence in research	1 Knowledge of water resources systems and operating policies for the region (as proven in international studies) (1=poor / nonexistent, 5=good)	
		2 Knowledge of important specific features of the region (e.g. Monsoon, El Niño, marked topography) (1=poor, 5=good)	
		3 Presence of applied, integrated research linking climate, hydrology, and water resources impacts and adaptation for the region (1=poor, 5=good)	
	III Data availability and access	1 Access to observed meteorological data for foreign researchers (1=poor / no data available, 5=good)	
		2 Cost of observed meteorological data for foreign researchers (1=expensive / no data available, 5=free)	
		3 Access to observed hydrological data for foreign researchers (1=poor / no data available, 5=good)	
		4 Cost of observed hydrological data for foreign researchers (1=expensive / no data available, 5=free)	
	IV State of knowledge	1 Availability of appropriate climate downscaling from international competence centres (1=poor, 5=good)	
		2 Applications of hydrological models in general at international competence centres (1=poor, 5=good)	
		3 Applications of hydrological models to specific water resources systems at international competence centres (1=poor, 5=good)	

Table S1, continued. Abbreviations for regions studied (column headers) see Table 1 in main article.

Identifier	ALC	ALE	ANT	DRM	EM	HIK	PNW	PYR	SAL	TSH	UCJ
B.I.1	5	5	2.5	3	1	2	1	3	3	3	1
B.I.2	4	4	2.5	3	1	2	2	3	4	3	2
B.II.1	5	5	2.5	3	1	1	3	4	5	1	3
B.II.2	5	5	2	3	1	3	4	-	-	3	-
B.III.1	5	5	3	5	3.5	2	5	5	5	3	4
B.III.2	5	4.5	2	3.5	3.5	2	2	4	3.5	4	4
B.III.3	5	5	2	3	3.5	1	1	5	4	4	3
B.III.4	5	4.5	2.5	4	4	1	3	4	4	3	3
B.III.5	5	5	2	4	3.5	2	5	4	3.5	3	3
B.III.6	4	3	2.5	3	3.5	1	1	4	3.5	3	2
B.IV.1	5	5	3	3	3.5	2	3	3	4	3	4
B.IV.2	4	3.5	2	4	3.5	2	1	4	4	3	2
B.IV.3	5	5	1.5	4	3.5	2	4	4	4	3	4
B.IV.4	5	5	2.5	4	3.5	2	3	3	4	3	4
C.I.1	5	4	1.5	4	3.5	2	4	5	4	2	3
C.I.2	5	5	1.5	4	3.5	2	5	4	3.5	3	3
C.II.1	5	4.5	2.5	4	4	2	4	4	4	4	4
C.II.2	4	4	2	4	4	2	5	5	5	4	4
C.II.3	5	4.5	2	4	3.5	1	4	4	4	4	5
C.III.1	5	4.5	2	4	1	3	3	4	5	3	4
C.III.2	3	3.5	2	4	3	-	5	5	5	2	3
C.III.3	5	5	1.5	3	1	3	3	5	4.5	3	2
C.III.4	5	5	1.5	4	3	-	5	5	5	2	2
C.IV.1	5	4.5	1.5	3.5	4	1	5	4	4	2.5	3
C.IV.2	5	4.5	1.5	4	3	2	5	4	4	2	4
C.IV.3	5	4.5	2	5	4	2	3	4	3.5	3	4
D.I.1	4	4	2.5	4	3.5	3	4	5	3	3	2
D.II.1	5	5	2	4	3.5	3	4	4	2.5	4	4
D.II.2	4	4	2	4	3.5	3	4	5	2	4	4
D.II.3	3.5	3	2.5	5	3.5	2	2	4	4	3	2
D.III.1	5	3.5	1.5	3	3	2	4	4	3	3	2
D.III.2	3	3	1.5	4	3	-	3	2	5	2	2
D.III.3	5	4.5	1.5	3	2	2	5	5	3	3	1
D.III.4	5	5	1.5	3	4	-	3	5	5	2	1
D.IV.1	5	4	2.5	5	3	2	5	4	4	3	2
D.IV.2	5	3	2	5	3.5	2	5	4	3.5	3	2
D.IV.3	5	3	2.5	5	3.5	2	3	4	2	3	2