Chapter 10: Linking global to regional climate change - Supplementary Material

Coordinating Lead Authors:
Francisco J. Doblas-Reyes (Spain), Anna A. Sörensson (Argentina)

Lead Authors:
Mansour Almazroui (Saudi Arabia), Alessandro Dosio (Italy), William Gutowski (USA), Rein Haarsma (Netherlands), Rafiq Hamdi (Belgium), Bruce Hewitson (South Africa), Won-Tae Kwon (Republic of Korea), Benjamin Lamptey (Niger/Ghana), Douglas Maraun (Austria/Germany), Tannecia Stephenson (Jamaica), Izuru Takayabu (Japan), Laurent Terray (France), Andrew Turner (UK), Zhiyan Zuo (China)

Contributing Authors:
Martin Jury (Spain/Austria), Gudfina Aðalgeirsdóttir (Iceland), Bhupesh Adhikary (Nepal), Muhammad Adnan (Pakistan), Bodo Ahrens (Germany), Muhammad Amjad (Pakistan), Paola Arias (Colombia), Farooq Mohamed Azam (India), Ségolène Berthou (United Kingdom/France), Melissa Bukovsky (USA), Alex Cannon (Canada), Ana Casanueva (Spain), Annalisa Cherchi (Italy), Erika Coppola (Italy), Faye Abigail Cruz (Philipines), Joseph Daron (UK), Marie-Estelle Demory (Switzerland/France), Claudine Dereczynski (Brazil), Alejandro Di Luca (Australia/Argentina), Leandro Díaz (Argentina), Hervé Douville (France), Sergio Henrique Faria (Spain/Brazil), Baylor Fox-Kemper (USA), Shin Fukui (Japan) Laura Gallardo (Chile), Subimal Ghosh (India), Nathan Gillett (Canada), Melissa I. Gomis (France/Switzerland), Hugues Goosse (Belgium), Irina Gorodetskaya (Portugal, Belgium/Russian Federation), Michael Grose (Australia), José M. Gutiérrez (Spain), Pandora Hope (Australia), Akm Saiful Islam (Bangladesh), Christopher Jack (South Africa), Richard G. Jones (UK), Asif Khan (Pakistan), Akio Kitoh (Japan), Gerhard Krinner (France), Hiroyuki Kusaka (Japan), Svitlana Krakovska (Ukraine / Ukrainian), Stefan Lange (Germany), Flavio Lehner (Switzerland), Christopher Lennard (South Africa), Jian Li (China), Fei Liu (China), Martin Ménégoz (France), Dirk Notz (Germany), Friederike Otto (UK/Germany), Wendy Parker (USA), Carlos Pérez García-Pando (Spain), Izidine Pinto (South Africa/Mozambique), Jan Polcher (France/Germany), Krishnan Raghavan (India), Ingo Richter (Japan/Germany), Sajjad Saeed (Belgium/Italy), Ramiro Saurral (Argentina), Roshanka Ranasinghe (The Netherlands, Sri Lanka, Australia), Alexander C. Ruane (USA), Lucas Ruiz (Argentina), Chris Shaw (UK), Reinhard Schiemann (UK/Germany), Sonia I. Seneviratne (Switzerland),. Ted Shepherd (UK), Jonathan K. P. Shonk (UK), Jana Sillmann (Norway/Germany), Didier Swingedouw (France), Izuru Takayabu (Japan), Ngo Doc Thanh (Vietnam), Bart van den Hurk (Netherlands), Robert Vautard (France), Victor Venema (Germany), Sergio M. Vicente-Serrano (Spain), Piotr Wolski (South Africa/Poland), Cunde Xiao (China), Jakob Zscheischler (Switzerland)

Review Editors:
Greg Flato (Canada), Fredolin Tangang (Malaysia), Muhammad Irfan Tariq (Pakistan)

Chapter Scientist:
Martin Jury (Austria/Spain)

Date of Draft:
3 May 2021

Notes:
TSU compiled version

Table of contents

10.SM.1 Regional Traceback Matrices

[START TABLE 10.SM.1 HERE]

Table 10.SM.1: Regional Traceback Matrix for Africa. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: (Mediterranean) North Africa (MED), Panel B: Sahara (SAH), Panel C: West-Africa (WAF), Panel D: Central-Africa (CAF), Panel E: N.Eastern-Africa (NEAF), Panel F: S.Eastern-Africa (SEAF), Panel G: W.Southern-Africa (WSAF), Panel H: E.Southern-Africa (ESAF), Panel I: Madagascar (MDG). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	(Mediterranean) North Africa	(Mediterranean) North Africa	(Mediterranean) North Africa
	Accronym	[MED]	[MED]	[MED]
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1, Table 12.3, Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1, Table 12.3
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1, Table 12.4
	Frost	12.4.1.1		12.4.1.1, Table 12.3
Wet and Dry	Mean precipitation	12.4.1.2, Atlas 4.2,	Atlas 4.2	12.4.1.2, Table 12.3, Atlas 4.4, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2, Table 12.3
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2,Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5,	11.4.5, 11.5.5,Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	8.3.1.6, 12.4.1.2		12.4.1.2, Table 12.3, 8.4.1.6
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6,, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6,, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone			
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet	12.4.1.4		12.4.1.4, Table 12.3
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4		12.4, Table 12.3
	Radiation at surface	12.4		12.4, Table 12.3

Panel B)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Sahara	Sahara	Sahara
	Accronym	SAH	SAH	SAH
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3, Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost	12.4.1.1;		12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	12.4.1.2, Atlas 4.2	Atlas 4.2	12.4.1.2, Table 12.3, Atlas 4.4, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2, Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5,	11.4.5, 11.5.5, Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	12.4.1.2		12.4.1.2, Table 12.3
	Hydrological drought	11.6.2, Table 11.6,	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone			
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4		12.4, Table 12.3
	Radiation at surface	12.4		12.4, Table 12.3

Panel C)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	West-Africa	West-Africa	West-Africa
	Accronym	WAF	WAF	WAF
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3; Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	1.4.5.2, 12.4.1.2, Atlas 4.2, 8.3.1.3, 8.3.2.4.3, BOX 8.2	Atlas 4.2	12.4.1.2, Table 12.3, Atlas 4.4, 8.4.1.3, 8.4.2.4.3, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	8.3.2.4.3, 11.4.2, 11.5.2,Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5	11.4.5, 11.5.5,Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	12.4.1.2		12.4.1.2, Table 12.3
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone			
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4		12.4, Table 12.3
	Radiation at surface	12.4		12.4, Table 12.3

Panel D)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Central-Africa	Central-Africa	Central-Africa
	Accronym	CAF	CAF	CAF
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3; Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	1.4.5.2, 12.4.1.2, Atlas 4.2, 8.3.1.6	Atlas 4.2, 8.3.1.6,	12.4.1.2, Table 12.3, Atlas 4.4, 8.4.1.3, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2,Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5,	11.4.5, 11.5.5, Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	12.4.1.2		12.4.1.2, Table 12.3
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.3	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone			
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4		12.4, Table 12.3
	Radiation at surface	12.4		12.4, Table 12.3

Panel E)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.Eastern-Africa	N.Eastern-Africa	N.Eastern-Africa
	Accronym	NEAF	NEAF	NEAF
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3; Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	1.4.5.2, 12.4.1.2, Atlas 4.2,8.3.1.3,8.3.1.6, BOX 8.2	Atlas 4.2, BOX 8.2	12.4.1.2, Table 12.3, Atlas 4.4, 8.4.1.3, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2,Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5,	11.4.5, 11.5.5, Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	12.4.1.2		12.4.1.2, Table 12.3
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.3	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone			
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet	12.4.1.4		12.4.1.4, Table 12.3
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4		12.4, Table 12.3
	Radiation at surface	12.4		12.4, Table 12.3

Panel F)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.Eastern-Africa	S.Eastern-Africa	S.Eastern-Africa
	Accronym	SEAF	SEAF	SEAF
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4; Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3; Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	12.4.1.2, Atlas 4.2, 8.3.1.3, BOX 8.2	Atlas 4.2, BOX 8.2	12.4.1.2, Table 12.3, Atlas 4.4, 8.4.1.3, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2,Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5,	11.4.5, 11.5.5, Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	12.4.1.2		12.4.1.2, Table 12.3
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.3	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone	11.7.1.2, 12.4.1.3	11.7.1.4	11.7.1.5, 12.4.1.3, Table 12.3
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet	12.4.1.4		12.4.1.4, Table 12.3
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4		12.4, Table 12.3
	Radiation at surface	12.4		12.4, Table 12.3

Panel G)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	W.Southern-Africa	W.Southern-Africa	W.Southern-Africa
	Accronym	WSAF	WSAF	WSAF
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3; Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	12.4.1.2, Atlas 4.2, 8.3.1.3	Atlas 4.2	12.4.1.2, Table 12.3, Atlas 4.4, 8.4.1.3, BOX 8.2, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2, Table 11.5, 12.4.1.2	11.4.4, 11.5.4,Table 11.5,	11.4.5, 11.5.5, Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3
	Aridity	8.3.1.6, 12.4.1.2	8.3.1.6,	12.4.1.2, Table 12.3, 8.4.1.6
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.3	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone			
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4.1.6		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4.1.6		12.4, Table 12.3
	Radiation at surface			12.4, Table 12.3

Panel H)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.Southern-Africa	E.Southern-Africa	E.Southern-Africa
	Accronym	ESAF	ESAF	ESAF
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3, Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3;
Wet and Dry	Mean precipitation	12.4.1.2, Atlas 4.2, 8.3.1.3	Atlas 4.2	12.4.1.2, Table 12.3, Atlas 4.4, 8.4.1.3, BOX 8.2, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2, Table 11.5, 12.4.1.2	11.4.4, 11.5.4, Table 11.5,	11.4.5, 11.5.5,Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	8.3.1.6, 12.4.1.2	8.3.1.6,	12.4.1.2, Table 12.3, 8.4.1.6
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.3	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone	11.7.1.2, 12.4.1.3	11.7.1.4	11.7.1.5, 12.4.1.3, Table 12.3
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4.1.6		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4.1.6		12.4, Table 12.3
	Radiation at surface			12.4, Table 12.3

Panel I)

	Region	AFRICA	AFRICA	AFRICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Madagascar	Madagascar	Madagascar
	Accronym	MDG	MDG	MDG
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Table 11.1; Table 11.4;11.3.2; 12.4.1.1, Atlas 4.2	Table 11.1; Table 11.4;11.3.4, Atlas 4.2	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3, Atlas 4.4, 4.4.1.1, 4.5.1.1, 4.6.1.1
	Extreme heat	Table 11.1; Table 11.4;11.3.2,12.4.1.1	Table 11.1; Table 11.4;11.3.4	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Cold spell	Table 11.1; Table 11.4;11.3.2,12.4.1.2	Table 11.1; Table 11.4;11.3.5	Table 11.2; Table 11.4;11.3.5; 12.4.1.1; Table 12.3;
	Frost			12.4.1.1; Table 12.3; Table 12.3;
Wet and Dry	Mean precipitation	Atlas 4.2	Atlas 4.2	12.4.1.2, Table 12.3, Atlas 4.4, 4.4.1.3, 4.5.1.4, 4.6.1.2
	River flood	11.5.2; 12.4.1.2	11.5.4	11.5.5; 12.4.1.2, Table 12.3
	Heavy precipitation and pluvial flood	11.4.2, 11.5.2, Table 11.5, 12.4.1.2	11.4.4, 11.5.4, Table 11.5,	11.4.5, 11.5.5, Table 11.5, 12.4.1.2, Table 12.3
	Landslide	12.4.1.2;		12.4.1.2, Table 12.3;
	Aridity	12.4.1.2		12.4.1.2, Table 12.3
	Hydrological drought	11.6.2, Table 11.6, 12.4.1.2	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.3
	Agricultural and ecological drought	11.6.2, Table 11.6, 12.4.1.3	11.6.4, Table 11.6,	11.6.5, Table 11.6, 12.4.1.2, Table 12.4
	Fire weather	12.4.1.2		12.4.1.2, Table 12.3
Wind	Mean wind speed	12.4.1.3		12.4.1.3, Table 12.3
	Severe wind storm	12.4.1.3		12.4.1.3, Table 12.3
	Tropical cyclone	11.7.1.2, 12.4.1.3	11.7.1.4	11.7.1.5, 12.4.1.3, Table 12.3
	Sand and dust storm	12.4.1.3		12.4.1.3, Table 12.3
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.1.4		12.4.1.4, Table 12.3
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.1.5		12.4.1.5, Table 12.3
	Coastal flood	12.4.1.5		12.4.1.5, Table 12.3
	Coastal erosion	12.4.1.5		12.4.1.5, Table 12.3
	Marine heatwave	12.4.1.5		12.4.1.5, Table 12.3
	Ocean acidity	12.4		12.4, Table 12.3
Other	Air pollution weather	12.4.1.6		12.4, Table 12.3
	Atmospheric CO2 at surface	12.4.1.6		12.4, Table 12.3
	Radiation at surface			12.4, Table 12.3

[END TABLE 10.SM.1 HERE]

[START TABLE 10.SM.2 HERE]

Table 10.SM.2: Regional Traceback Matrix for Asia. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: E.Asia (EAS), Panel B: E.C.Asia (ECA), Panel C: Tibetan-Plateau (TIB), Panel D: S.Asia (SAS), Panel E: S.E.Asia (SEA), Panel F: Arabian-Peninsula (ARP), Panel G: W.C.Asia (WCA), Panel H: W.Siberia (WSB), Panel I: E.Siberia (ESB), Panel J: Russian-Far-East (RFE). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	ASIA - EAST ASIA	ASIA - EAST ASIA	ASIA - EAST ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.Asia	E.Asia	E.Asia
	Accronym	EAS	EAS	EAS
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas 5.1.2 12.4.2.1 10.4.1.1		Atlas5.1.4 12.4.2.1, Table 12.4
	Extreme heat	12.4.2.1 11.3.2 Table 11.7	11.3.4 Table 11.7	12.4.2.1, Table 12.4, 11.3.5 Table 11.7
	Cold spell	11.3.2 12.4.2.1 Table 11.7	11.3.4 Table 11.7	11.3.5 Table 11.7 12.4.2.1, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	8.3.2.4.2 10.4.1.1 Atlas 5.1.2 12.4.2.2	10.3.2.2	Atlas 5.1.4 8.4.2.4.2 12.4.2.2, Table 12.4
	River flood	10.4.1.1 12.4.2.2		12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	8.3.1.3 10.4.1.1 12.4.2.2 11.4.2 Table 11.8 BOX 11.4	11.4.4 Table 11.8	12.4.2.2, Table 12.4, 11.4.5 Table 11.8
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	12.4.2.2 Table 11.9	Table 11.9	12.4.2.2, Table 12.4, Table 11.9
	Hydrological drought	10.4.1.1 11.6.2.4 11.6.2.5 Table 11.9 12.4.2.2	Table 11.9	8.4.1.6 12.4.2.2, Table 12.4
	Agricultural and ecological drought	11.6.2.3 Table 11.9, 12.4.2.2	Table 11.9	11.6.5.3 12.4.2.2, Table 12.4, Table 11.9
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone	12.4.2.3 11.7.1.2		8.4.2.5 11.7.1.5 12.4.2.3
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	Atlas 5.1.2 12.4.2.4		12.4.2.4, Table 12.4
	Permafrost			
	Lake, river and sea ice	12.4.2.4		12.4.2.4, Table 12.4
	Heavy snowfall and ice storm	12.4.2.4		12.4.2.4, Table 12.4
	Hail	11.7.3.2		12.4.2.4, Table 12.4
	Snow avalanche	12.4.2.4		12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level	12.4.2.5		12.4.2.5, Table 12.4
	Coastal flood	12.4.2.5		12.4.2.5, Table 12.4
	Coastal erosion	12.4.2.5		12.4.2.5, Table 12.4
	Marine heatwave	12.4.2.5		12.4.2.5, Table 12.4
	Ocean acidity	12.4		12.4, Table 12.4
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel B)

	Region	ASIA - EAST ASIA	ASIA - EAST ASIA	ASIA - EAST ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.C.Asia	E.C.Asia	E.C.Asia
	Accronym	ECA	ECA	ECA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.2.1		12.4.2.1, Table 12.4
	Extreme heat	12.4.2.1 11.3.2		12.4.2.1, Table 12.4
	Cold spell	12.4.2.1		12.4.2.1, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	12.4.2.2		12.4.2.2, Table 12.4
	River flood	12.4.2.2		12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	11.4.2, 12.4.2.2		11.4.5, 12.4.2.2, Table 12.4
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	8.3.1.6 12.4.2.2		12.4.2.2, Table 12.4
	Hydrological drought	12.4.2.2		12.4.2.2, Table 12.4
	Agricultural and ecological drought	12.4.2.2		12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone			
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	12.4.2.4		12.4.2.4
	Permafrost	12.4.2.4		12.4.2.4
	Lake, river and sea ice	12.4.2.4		12.4.2.4
	Heavy snowfall and ice storm			
	Hail	12.4.2.4		12.4.2.4
	Snow avalanche			
Coastal and Oceanic	Relative sea level			
	Coastal flood			
	Coastal erosion			
	Marine heatwave			
	Ocean acidity			
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel C)

	Region	ASIA - SOUTH ASIA	ASIA - SOUTH ASIA	ASIA - SOUTH ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Tibetan-Plateau	Tibetan-Plateau	Tibetan-Plateau
	Accronym	TIB	TIB	TIB
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.2.1 Box 10.4	Box10.4	12.4.2.1, Table 12.4, Box 10.4
	Extreme heat	12.4.2.1 11.3.2 Box 10.4		11.3.5 12.4.2.1, Table 12.4
	Cold spell	11.3.2 12.4.2.1 Box 10.4		11.3.5 12.4.2.1, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	12.4.2.2 Box 10.4		12.4.2.2
	River flood	12.4.2.2		
	Heavy precipitation and pluvial flood	11.4.2 Box 10.4		11.4.5 Box 10.4
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	12.4.2.2		11.6.5.1 12.4.2.2
	Hydrological drought	12.4.2.2		12.4.2.2, Table 12.4
	Agricultural and ecological drought	12.4.2.2		12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone			
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	9.5.1 9.5.3 12.4.2.4 Box 10.4 8.3.1.3 8.3.1.7 12.4.2.4		9.5.1 9.5.3 12.4.2.4 Box 10.4 8.4.1.7.1 12.4.2.4, Table 12.4.
	Permafrost	9.5.2 12.4.2.4 Box 10.4 12.4.2.4	Box10.4	9.5.2 12.4.2.4 Box 10.4 12.4.2.4, Table 12.4.
	Lake, river and sea ice			12.4.2.4, Table 12.4
	Heavy snowfall and ice storm			12.4.2.4, Table 12.4
	Hail			12.4.2.4, Table 12.4
	Snow avalanche			12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level			
	Coastal flood			
	Coastal erosion			
	Marine heatwave			
	Ocean acidity			
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel D)

	Region	ASIA - SOUTH ASIA	ASIA - SOUTH ASIA	ASIA - SOUTH ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.Asia	S.Asia	S.Asia
	Accronym	SAS	SAS	SAS
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas 1.1.2 Atlas 5.3.5.2 Atlas 5.3.5 10.6.2 10.6.3 10.6.10 12.4.2.1		Atlas 1.1.4 Atlas 5.3.5.4 10.6.3.6 10.6.3.7 10.6.3.10 12.4.2.1, Table 12.4, Table 11.7
	Extreme heat	Atlas 1.1.2 Atlas 5.3.5 Atlas 5.3.5.2 12.4.2.1 11.3.2		Table 11.5 10.6.3.9 12.4.2.1, Table 12.4, 11.3.5
	Cold spell	12.4.2.1		12.4.2.1, Table 12.4, Table 11.7
	Frost	12.4.2.1		12.4.2.1, Table 12.4, Table 11.7
Wet and Dry	Mean precipitation	Atlas 1.1.2 Atlas5.3.5.2 8.3.1.3 8.3.2.4 10.3.3.3.1 10.6.3.2 10.6.3.3 10.6.3.10 12.4.2.2	10.6.5 Atlas 1.1.2	Atlas 1.1.4 Atlas 5.3.5 Atlas 5.3.5.4 8.4.1.3.1 8.4.2.4 10.3.3.3.1 10.6.3.6 10.6.3.7 10.6.3.10 12.4.2.2, Table 12.4, 11.4.1
	River flood	8.2.3.2 12.4.2.2	11.5.4	12.4.2.2, Table 12.4, 11.5.5
	Heavy precipitation and pluvial flood	8.3.1.3 11.4.2 12.4.2.2	CH11.4.4 Box 11.4	11.4.1 11.4.5 11.5.5 12.4.2.2, Table 12.4, Table 11.8
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	12.4.2.2		11.6.5.1 12.4.2.2, Table 12.4
	Hydrological drought	8.3.1.6 11.6.2.5 12.4.2.2	10.6.3.5	11.6.5.3 12.4.2.2, Table 12.4
	Agricultural and ecological drought	8.3.1.6 12.4.2.2		12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	11.7.4 12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	11.7.3.2 12.4.2.3	11.7.3.4	12.4.2.3, Table 12.4
	Tropical cyclone			12.4.2.3, Table 12.4
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	9.5 9.5.3 12.4.2.4		9.5.1 9.5.3 12.4.2.4, Table 12.4
	Permafrost	9.5.2, 12.4.2.4		9.5.2, 12.4.2.4, Table 12.4
	Lake, river and sea ice	12.4.2.4		12.4.2.4, Table 12.4
	Heavy snowfall and ice storm	12.4.2.4		12.4.2.4, Table 12.4
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche	12.4.2.4		12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level	12.4.2.5		12.4.2.5, Table 12.4
	Coastal flood	12.4.2.5		12.4.2.5, Table 12.4
	Coastal erosion	12.4.2.5		12.4.2.5, Table 12.4
	Marine heatwave	12.4.2.5		12.4.2.5, Table 12.4
	Ocean acidity	12.4		12.4, Table 12.4
Other	Air pollution weather	12.4		10.6.3.6 12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		10.6.3.6 12.4, Table 12.4

Panel E)

	Region	ASIA - SOUTH EAST ASIA	ASIA - SOUTH EAST ASIA	ASIA - SOUTH EAST ASIA
	Region type (Land / Ocean)	Land-Ocean	Land-Ocean	Land-Ocean
	Sub-Region Name	S.E.Asia	S.E.Asia	S.E.Asia
	Accronym	SEA	SEA	SEA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas 3.1 Atlas 5.4.1 Atlas 5.4.2 12.4.2.1		Atlas 3.1 Atlas 5.4.1 Atlas 5.4.4 12.4.2.1, Table 12.4
	Extreme heat	Atlas5.4.2 11.3.2 12.4.2.1	11.3.4	11.3.5 12.4.2.1, Table 12.4
	Cold spell	12.4.2.1		11.3.5 12.4.2.1, Table 12.4
	Frost			
Wet and Dry	Mean precipitation	Atlas 3.1 Atlas 5.4.1 Atlas5.4.2 12.4.2.2		Atlas 3.1 Atlas 5.4.1 Atlas5.4.4 12.4.2.2, Table 12.4, 11.5.5
	River flood	12.4.2.2		8.4.1.5 12.4.2.2, Table 12.4, 11.5.5
	Heavy precipitation and pluvial flood	Atlas 5.4.2 12.4.2.2 11.4.2 11.5.2		8.4.1.5 12.4.2.2, Table 12.4, 11.4.5 11.5.4
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	12.4.2.2		12.4.2.2, Table 12.4
	Hydrological drought	12.4.2.2 11.6 11.6.2.4 11.6.2.5		12.4.2.2, Table 12.4, 11.6.5.4
	Agricultural and ecological drought	12.4.2.2		12.4.2.2, Table 12.4, BOX 11.4
	Fire weather	12.4.2.2 Box 11.4		12.4.2.2, Table 12.4, BOX 11.4
Wind	Mean wind speed	12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone	12.4.2.3	11.7.1.4	12.4.2.3, Table 12.4
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	9.5.1 9.5.3, 12.4.2.4		9.5.1 9.5.3, 12.4.2.4, Table 12.4
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.2.5		12.4.2.5, Table 12.4
	Coastal flood	12.4.2.5		12.4.2.5, Table 12.4
	Coastal erosion	12.4.2.5		12.4.2.5, Table 12.4
	Marine heatwave	12.4.2.5		12.4.2.5, Table 12.4
	Ocean acidity	12.4		12.4, Table 12.4
Other	Air pollution weather	2.2.5.3 12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel F)

	Region	ASIA - SOUTH WEST ASIA	ASIA - SOUTH WEST ASIA	ASIA - SOUTH WEST ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Arabian-Peninsula	Arabian-Peninsula	Arabian-Peninsula
	Accronym	ARP	ARP	ARP
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.5.5.2, 12.4.2.1		12.4.2.1, Table 12.4; Atlas.5.5.4
	Extreme heat	12.4.2.1, Table 11.7	Table 11.7	Table 11.7, 12.4.2.1, Table 12.4
	Cold spell	12.4.2.1, Table 11.7	Table 11.7	Table 11.7, 12.4.2.1, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	Atlas.5.5.2, 12.4.2.2		Atlas.5.5.4 12.4.2.2, Table 12.4;
	River flood	12.4.2.2, FAQ 8.2		12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	FAQ 8.2, Table 11.8, 12.4.2.2	Table 11.8	Table.11.8, 12.4.2.2, Table 12.4;
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Hydrological drought	Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Agricultural and ecological drought	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4;
Wind	Mean wind speed	11.7.4, 12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	11.7.4, 12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone	12.4.2.3		12.4.2.3, Table 12.4
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.2.5		12.4.2.5, Table 12.4;
	Coastal flood	12.4.2.5		12.4.2.5, Table 12.4;
	Coastal erosion	12.4.2.5		12.4.2.5, Table 12.4;
	Marine heatwave	12.4.2.5		12.4.2.5, Table 12.4;
	Ocean acidity	12.4		12.4, Table 12.4
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel G)

	Region	ASIA - SOUTH WEST ASIA	ASIA - SOUTH WEST ASIA	ASIA - SOUTH WEST ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	W.C.Asia	W.C.Asia	W.C.Asia
	Accronym	WCA	WCA	WCA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.5.5.2 12.4.2.1		Atlas.5.5.4, 12.4.2.1, Table 12.4;
	Extreme heat	Table 11.7, 12.4.2.1	Table 11.7	Table 11.7, 11.3.5, 12.4.2.1, Table 12.4
	Cold spell	Table 11.7, 12.4.2.1	Table 11.7	Table 11.7, 12.4.2.1, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	Atlas.5.5.2 12.4.2.2		Atlas.5.5.4 12.4.2.2, Table 12.4;
	River flood	12.4.2.2, FAQ 8.2		12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	FAQ 8.2, Table 11.8, 12.4.2.2	Table 11.8	12.4.2.2, Table 12.4
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	11.6.5.1, 12.4.2.2, Table 11.9, Table 12.4;
	Hydrological drought	8.3.1.6, Table 11.9, 12.4.2.2	Table 11.9	8.4.1.6, Table 11.9, 12.4.2.2, Table 12.4;
	Agricultural and ecological drought	8.2.3.3, FAQ 8.3, 8.3.1.6, Table 11.9, 12.4.2.2	Table 11.9	8.4.1.6, Table 11.9, 12.4.2.2, Table 12.4;
	Fire weather			12.4.2.2, Table 12.4
Wind	Mean wind speed	12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone			
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	9.5.1, 9.5.3, Atlas.5.5.2		9.5.1, 9.5.3, 12.4.2.4, Table 12.4
	Permafrost	9.5.2; 12.4.2.4		9.5.2; 12.4.2.4, Table 12.4;
	Lake, river and sea ice	12.4.2.4		12.4.2.4, Table 12.4
	Heavy snowfall and ice storm	12.4.2.4		12.4.2.4, Table 12.4
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche	12.4.2.4		12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level	12.4.2.5		12.4.2.5, Table 12.4;
	Coastal flood	12.4.2.5		12.4.2.5, Table 12.4;
	Coastal erosion	12.4.2.5		12.4.2.5, Table 12.4;
	Marine heatwave	12.4.2.5		12.4.2.5, Table 12.4;
	Ocean acidity	12.4		12.4, Table 12.4
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel H)

	Region	ASIA - NORTH ASIA	ASIA - NORTH ASIA	ASIA - NORTH ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	W.Siberia	W.Siberia	W.Siberia
	Accronym	WSB	WSB	WSB
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.5.2.2 12.4.2.1		Atlas.5.2.4 12.4.2.1, Table 12.4
	Extreme heat	Table 11.7, 12.4.2.1	Table 11.7	11.3.5, Table 11.7, 12.4.2.1, Table 12.4
	Cold spell	Table 11.7, 12.4.2.1	Table 11.7	Table 11.7, 12.4.2.2, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	Atlas.5.2.2, 12.4.2.2, 2.3.1.3.4, 8.3.1.3, 10.4.1.2, 10.4.2.4		Atlas.5.2.4 12.4.2.2, Table 12.4
	River flood	12.4.2.2, FAQ 8.2		11.5.5, 12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	8.3.1.3, FAQ 8.2, 11.4.2, Table 11.8, 12.4.2.2	Table 11.8	Table 11.8, 11.4.5, 12.4.2.2, Table 12.4
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Hydrological drought	Table 11.9, 12.4.2.2	Table 11.9	8.4.1.6, Table 11.9, 12.4.2.2, Table 12.4
	Agricultural and ecological drought	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	8.4.1.6, Table 11.9, 12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	2.3.1.4.4, 12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone			
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	2.3.2.2, 8.3.1.7.2, 9.5.1, 9.5.3, Atlas.5.2.2	3.4.2	9.5.1, 9.5.3, 12.4.2.4, Table 12.4
	Permafrost	9.5.2; 12.4.2.4		9.5.2; 12.4.2.4, Table 12.4;
	Lake, river and sea ice	12.4.2.4		12.4.2.4, Table 12.4
	Heavy snowfall and ice storm	12.4.2.4		12.4.2.4, Table 12.4
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche	12.4.2.4		12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level			
	Coastal flood			
	Coastal erosion			
	Marine heatwave			
	Ocean acidity			
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel I)

	Region	ASIA - NORTH ASIA	ASIA - NORTH ASIA	ASIA - NORTH ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.Siberia	E.Siberia	E.Siberia
	Accronym	ESB	ESB	ESB
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.5.2.2 12.4.2.1		Atlas.5.2.4 12.4.2.1, Table 12.4
	Extreme heat	Table 11.7, 12.4.2.1	Table 11.7	11.3.5, Table 11.7, 12.4.2.1, Table 12.4
	Cold spell	Table 11.7, 12.4.2.1	Table 11.7	Table 11.7, 12.4.2.2, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	Atlas.5.2.2, 12.4.2.2, 2.3.1.3.4, 8.3.1.3 10.4.1.2 10.4.2.4		Atlas.5.2.4 12.4.2.2, Table 12.4
	River flood	11.5.2, 12.4.2.2, FAQ8.2		11.5.5, 12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	8.3.1.3, 11.4.2, Table 11.8, 12.4.2.2, FAQ 8.2	Table 11.8	Table 11.8, 11.4.5, 12.4.2.2, Table 12.4
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Hydrological drought	Table 11.9, 12.4.2.2	Table 11.9	8.4.1.6, Table 11.9, 12.4.2.2, Table 12.4
	Agricultural and ecological drought	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	8.4.1.6, Table 11.9, 12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	2.3.1.4.4, 12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone			
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	2.3.2.2, 8.3.1.7.2, 9.5.1, 9.5.3, Atlas.5.2.2	3.4.2	9.5.1, 9.5.3, 12.4.2.4, Table 12.4
	Permafrost	9.5.2; 12.4.2.4		9.5.2; 12.4.2.4, Table 12.4;
	Lake, river and sea ice	12.4.2.4		12.4.2.4, Table 12.4
	Heavy snowfall and ice storm	12.4.2.4		12.4.2.4, Table 12.4
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche	12.4.2.4		12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level			
	Coastal flood			
	Coastal erosion			
	Marine heatwave			
	Ocean acidity			
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

Panel J)

	Region	ASIA - NORTH ASIA	ASIA - NORTH ASIA	ASIA - NORTH ASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Russian-Far-East	Russian-Far-East	Russian-Far-East
	Accronym	RFE	RFE	RFE
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.5.2.2 12.4.2.1		Atlas.5.2.4 12.4.2.1, Table 12.4
	Extreme heat	Table 11.7, 12.4.2.1	Table 11.7	11.3.5, Table 11.7, 12.4.2.1, Table 12.4
	Cold spell	Table 11.7, 12.4.2.1	Table 11.7	Table 11.7, 12.4.2.2, Table 12.4
	Frost	12.4.2.1		12.4.2.1, Table 12.4
Wet and Dry	Mean precipitation	Atlas.5.2.2, 12.4.2.2, 2.3.1.3.4, 8.3.1.3		Atlas.5.2.4 12.4.2.2, Table 12.4
	River flood	11.5.2, 12.4.2.2		11.5.5, 12.4.2.2, Table 12.4
	Heavy precipitation and pluvial flood	8.3.1.3, Table 11.8, 11.4.2, 12.4.2.2	Table 11.8	Table 11.8, 11.4.5, 12.4.2.2
	Landslide	12.4.2.2		12.4.2.2, Table 12.4
	Aridity	8.2.3.3, FAQ 8.3, Table 11.9, 11.6.5.1, 12.4.2.2	Table 11.9	11.6.5.1, Table 11.9, 12.4.2.2, Table 12.4
	Hydrological drought	Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Agricultural and ecological drought	8.2.3.3, FAQ 8.3, Table 11.9, 12.4.2.2	Table 11.9	Table 11.9, 12.4.2.2, Table 12.4
	Fire weather	12.4.2.2		12.4.2.2, Table 12.4
Wind	Mean wind speed	12.4.2.3		12.4.2.3, Table 12.4
	Severe wind storm	12.4.2.3		12.4.2.3, Table 12.4
	Tropical cyclone			
	Sand and dust storm	12.4.2.3		12.4.2.3, Table 12.4
Snow and Ice	Snow, glacier and ice sheet	8.3.1.7.2, 9.5.1, 9.5.3, Atlas.5.2.2		9.5.1, 9.5.3, 12.4.2.4
	Permafrost	2.3.2.5; 9.5.2; 12.4.2.4		9.5.2; 12.4.2.4, Table 12.4;
	Lake, river and sea ice	12.4.2.4		12.4.2.4, Table 12.4
	Heavy snowfall and ice storm	12.4.2.4		12.4.2.4, Table 12.4
	Hail	12.4.2.4		12.4.2.4, Table 12.4
	Snow avalanche	12.4.2.4		12.4.2.4, Table 12.4
Coastal and Oceanic	Relative sea level	12.4.2.5		12.4.2.5, Table 12.4;
	Coastal flood	12.4.2.5		12.4.2.5, Table 12.4;
	Coastal erosion	12.4.2.5		12.4.2.5, Table 12.4;
	Marine heatwave	12.4.2.5		12.4.2.5, Table 12.4;
	Ocean acidity	12.4		12.4, Table 12.4
Other	Air pollution weather	12.4		12.4, Table 12.4
	Atmospheric CO2 at surface	12.4		12.4, Table 12.4
	Radiation at surface	12.4		12.4, Table 12.4

[END TABLE 10.SM.2 HERE]

[START TABLE 10.SM.3 HERE]

Table 10.SM.3: Regional Traceback Matrix for Australasia. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: N.Australia (NAU), Panel B: C.Australia (CAU), Panel C: E.Australia (EAU), Panel D: S.Australia (SAU), Panel E: New-Zealand (NZ). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	AUSTRALASIA	AUSTRALASIA	AUSTRALASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.Australia	N.Australia	N.Australia
	Accronym	NAU	NAU	NAU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.3.1; Atlas.6.2		12.4.3.1; Table 12.5; Atlas.6.4; CH1.3.6
	Extreme heat	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Cold spell	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Frost	12.4.3.1		12.4.3.1; Table 12.5
Wet and Dry	Mean precipitation	12.4.3.2; Atlas.6.2		12.4.3.2; Table 12.5; Atlas.6.4
	River flood	Table 11.1; Table 11.6: 11.5.2; 12.4.3.2	Table 11.1; Table 11.6: 11.5.4	Table 11.2; Table 11.6: 11.5.5; 12.4.3.2; Table 12.5
	Heavy precipitation and pluvial flood	Table 11.1; Table 11.6: 11.4.2; 12.4.3.2	Table 11.1; Table 11.6: 11.4.4	Table 11.2; Table 11.6: 11.4.5; 12.4.3.2; Table 12.5
	Landslide			
	Aridity	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2
	Hydrological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2
	Agricultural and ecological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2
	Fire weather	12.4.3.2		12.4.3.2; Table 12.5
Wind	Mean wind speed	12.4.3.3		12.4.3.3; Table 12.5
	Severe wind storm	12.4.3.3		12.4.3.3; Table 12.5
	Tropical cyclone	12.4.3.3		12.4.3.3; Table 12.5
	Sand and dust storm	12.4.3.3		12.4.3.3; Table 12.5
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.3.5		12.4.3.5; Table 12.5
	Coastal flood	12.4.3.5		12.4.3.5; Table 12.5
	Coastal erosion	12.4.3.5		12.4.3.5; Table 12.5
	Marine heatwave	12.4.3.5		12.4.3.5; Table 12.5
	Ocean acidity	12.4		12.4, Table 12.5
Other	Air pollution weather	12.4		12.4, Table 12.5
	Atmospheric CO2 at surface	12.4		12.4, Table 12.5
	Radiation at surface	12.4		12.4, Table 12.5

Panel B)

	Region	AUSTRALASIA	AUSTRALASIA	AUSTRALASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	C.Australia	C.Australia	C.Australia
	Accronym	CAU	CAU	CAU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.3.1; Atlas.6.2		12.4.3.1; Table 12.5; Atlas.6.4; CH1.3.6
	Extreme heat	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Cold spell	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Frost	12.4.3.1		12.4.3.1; Table 12.5
Wet and Dry	Mean precipitation	12.4.3.2; Table 12.5; Atlas.6.2		12.4.3.2; Table 12.5; Atlas.6.4
	River flood	Table 11.1; Table 11.6: 11.5.2; 12.4.3.2	Table 11.1; Table 11.6: 11.5.4	Table 11.2; Table 11.6: 11.5.5; 12.4.3.2; Table 12.5
	Heavy precipitation and pluvial flood	Table 11.1; Table 11.6: 11.4.2; 12.4.3.2	Table 11.1; Table 11.6: 11.4.4	Table 11.2; Table 11.6: 11.4.5; 12.4.3.2; Table 12.5
	Landslide			
	Aridity	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Hydrological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Agricultural and ecological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Fire weather	12.4.3.2		12.4.3.2; Table 12.5
Wind	Mean wind speed	12.4.3.3		12.4.3.3; Table 12.5
	Severe wind storm	12.4.3.3		12.4.3.3; Table 12.5
	Tropical cyclone	12.4.3.3		12.4.3.3; Table 12.5
	Sand and dust storm	12.4.3.3		12.4.3.3; Table 12.5
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.3.5		12.4.3.5; Table 12.5
	Coastal flood	12.4.3.5		12.4.3.5; Table 12.5
	Coastal erosion	12.4.3.5		12.4.3.5; Table 12.5
	Marine heatwave	12.4.3.5		12.4.3.5; Table 12.5
	Ocean acidity	12.4		12.4, Table 12.5
Other	Air pollution weather	12.4		12.4, Table 12.5
	Atmospheric CO2 at surface	12.4		12.4, Table 12.5
	Radiation at surface	12.4		12.4, Table 12.5

Panel C)

	Region	AUSTRALASIA	AUSTRALASIA	AUSTRALASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.Australia	E.Australia	E.Australia
	Accronym	EAU	EAU	EAU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.3.1; Atlas.6.2		12.4.3.1; Table 12.5; Atlas.6.4; CH1.3.6
	Extreme heat	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Cold spell	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Frost	12.4.3.1		12.4.3.1; Table 12.5
Wet and Dry	Mean precipitation	12.4.3.2; Table 12.5; Atlas.6.2		12.4.3.2; Table 12.5; Atlas.6.4
	River flood	Table 11.1; Table 11.6: 11.5.2; 12.4.3.2	Table 11.1; Table 11.6: 11.5.4	Table 11.2; Table 11.6: 11.5.5; 12.4.3.2; Table 12.5
	Heavy precipitation and pluvial flood	Table 11.1; Table 11.6: 11.4.2; 12.4.3.2	Table 11.1; Table 11.6: 11.4.4	Table 11.2; Table 11.6: 11.4.5; 12.4.3.2; Table 12.5
	Landslide			
	Aridity	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Hydrological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Agricultural and ecological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Fire weather	12.4.3.2		12.4.3.2; Table 12.5
Wind	Mean wind speed	12.4.3.3		12.4.3.3; Table 12.5
	Severe wind storm	12.4.3.3		12.4.3.3; Table 12.5
	Tropical cyclone	12.4.3.3		12.4.3.3; Table 12.5
	Sand and dust storm	12.4.3.3		12.4.3.3; Table 12.5
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.3.4		12.4.3.4; Table 12.5
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.3.5		12.4.3.5; Table 12.5
	Coastal flood	12.4.3.5		12.4.3.5; Table 12.5
	Coastal erosion	12.4.3.5		12.4.3.5; Table 12.5
	Marine heatwave	12.4.3.5		12.4.3.5; Table 12.5
	Ocean acidity	12.4		12.4, Table 12.5
Other	Air pollution weather	12.4		12.4, Table 12.5
	Atmospheric CO2 at surface	12.4		12.4, Table 12.5
	Radiation at surface	12.4		12.4, Table 12.5

Panel D)

	Region	AUSTRALASIA	AUSTRALASIA	AUSTRALASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.Australia	S.Australia	S.Australia
	Accronym	SAU	SAU	SAU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.3.1; Atlas.6.2		12.4.3.1; Table 12.5; Atlas.6.4; CH1.3.6
	Extreme heat	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Cold spell	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Frost	12.4.3.1		12.4.3.1; Table 12.5
Wet and Dry	Mean precipitation	12.4.3.2; Table 12.5; Atlas.6.2		12.4.3.2; Table 12.5; Atlas.6.4
	River flood	Table 11.1; Table 11.6: 11.5.2; 12.4.3.2	Table 11.1; Table 11.6: 11.5.4	Table 11.2; Table 11.6: 11.5.5; 12.4.3.2; Table 12.5
	Heavy precipitation and pluvial flood	Table 11.1; Table 11.6: 11.4.2; 12.4.3.2	Table 11.1; Table 11.6: 11.4.4	Table 11.2; Table 11.6: 11.4.5; 12.4.3.2; Table 12.5
	Landslide			
	Aridity	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Hydrological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Agricultural and ecological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Fire weather	12.4.3.2		12.4.3.2; Table 12.5
Wind	Mean wind speed	12.4.3.3		12.4.3.3; Table 12.5
	Severe wind storm	12.4.3.3		12.4.3.3; Table 12.5
	Tropical cyclone	12.4.3.3		12.4.3.3; Table 12.5
	Sand and dust storm	12.4.3.3		12.4.3.3; Table 12.5
Snow and Ice	Snow, glacier and ice sheet	12.4.3.4		12.4.3.4; Table 12.5
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.3.4		12.4.3.4; Table 12.5
	Snow avalanche	12.4.3.4		12.4.3.4; Table 12.5
Coastal and Oceanic	Relative sea level	12.4.3.5		12.4.3.5; Table 12.5
	Coastal flood	12.4.3.5		12.4.3.5; Table 12.5
	Coastal erosion	12.4.3.5		12.4.3.5; Table 12.5
	Marine heatwave	12.4.3.5		12.4.3.5; Table 12.5
	Ocean acidity	12.4		12.4, Table 12.5
Other	Air pollution weather	12.4		12.4, Table 12.5
	Atmospheric CO2 at surface	12.4		12.4, Table 12.5
	Radiation at surface	12.4		12.4, Table 12.5

Panel E)

	Region	AUSTRALASIA	AUSTRALASIA	AUSTRALASIA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	New-Zealand	New-Zealand	New-Zealand
	Accronym	NZ	NZ	NZ
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.3.1; Atlas.6.2		12.4.3.1; Table 12.5; Atlas.6.4
	Extreme heat	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Cold spell	Table 11.1; Table 11.6: 11.3.2; 12.4.3.1	Table 11.1; Table 11.6: 11.3.4	Table 11.2; Table 11.6: 11.3.5; 12.4.3.1; Table 12.5
	Frost	12.4.3.1		12.4.3.1; Table 12.5
Wet and Dry	Mean precipitation	12.4.3.2; Table 12.5; Atlas.6.2		12.4.3.2; Table 12.5; Atlas.6.4
	River flood	Table 11.1; Table 11.6: 11.5.2; 12.4.3.2	Table 11.1; Table 11.6: 11.5.4	Table 11.2; Table 11.6: 11.5.5; 12.4.3.2; Table 12.5
	Heavy precipitation and pluvial flood	Table 11.1; Table 11.6: 11.4.2; 12.4.3.2	Table 11.1; Table 11.6: 11.4.4	Table 11.2; Table 11.6: 11.4.5; 12.4.3.2; Table 12.5
	Landslide	12.4.3.2		12.4.3.2; Table 12.5
	Aridity	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Hydrological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Agricultural and ecological drought	Table 11.1; Table 11.6: 11.6.2; 12.4.3.2	Table 11.1; Table 11.6: 11.6.4	Table 11.1; Table 11.6: 11.6.5; 12.4.3.2; Table 12.5
	Fire weather	12.4.3.2		12.4.3.2; Table 12.5
Wind	Mean wind speed	12.4.3.3		12.4.3.3; Table 12.5
	Severe wind storm	12.4.3.3		12.4.3.3; Table 12.5
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.3.4		12.4.3.4; Table 12.5
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm	12.4.3.4		12.4.3.4; Table 12.5
	Hail	12.4.3.4		12.4.3.4; Table 12.5
	Snow avalanche	12.4.3.4		12.4.3.4; Table 12.5
Coastal and Oceanic	Relative sea level	12.4.3.5		12.4.3.5; Table 12.5
	Coastal flood			12.4.3.5; Table 12.5
	Coastal erosion			12.4.3.5; Table 12.5
	Marine heatwave	12.4.3.5		12.4.3.5; Table 12.5
	Ocean acidity	12.4		12.4, Table 12.5
Other	Air pollution weather	12.4		12.4, Table 12.5
	Atmospheric CO2 at surface	12.4		12.4, Table 12.5
	Radiation at surface	12.4		12.4, Table 12.5

[END TABLE 10.SM.3 HERE]

[START TABLE 10.SM.4 HERE]

Table 10.SM.4: Regional Traceback Matrix for Central America. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: S.Central-America (SCA), Panel B: N.Central-America (NCA). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	CENTRAL-AMERICA	CENTRAL-AMERICA	CENTRAL-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.Central-America	S.Central-America	S.Central-America
	Accronym	SCA	SCA	SCA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1		12.4.4.1, Table 12.6
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost			12.4.4.1, Table 12.6
Wet and Dry	Mean precipitation	8.3.2.4.4; 12.4.4.2		8.4.1.3; 12.4.4.2, Table 12.6
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide	12.4.4.2		12.4.4.2, Table 12.6
	Aridity	8.3.1.6; 12.4.4.2	8.3.1.6;	8.4.1.6; 12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel B)

	Region	CENTRAL-AMERICA	CENTRAL-AMERICA	CENTRAL-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.Central-America	N.Central-America	N.Central-America
	Accronym	NCA	NCA	NCA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.6.1, Atlas.5.7.2		12.4.6.1, Table 12.8, Atlas.5.7.4
	Extreme heat	12.4.6.1		12.4.6.1, Table 12.8
	Cold spell	12.4.6.1		12.4.6.1, Table 12.8
	Frost	12.4.6.1		12.4.6.1, Table 12.8
Wet and Dry	Mean precipitation	12.4.6.2		12.4.6.2, Table 12.8, Atlas.5.7.4
	River flood	12.4.6.2		12.4.6.2, Table 12.8
	Heavy precipitation and pluvial flood	12.4.6.2		12.4.6.2, Table 12.8
	Landslide	12.4.6.2		12.4.6.2, Table 12.8
	Aridity	12.4.6.2		12.4.6.2, Table 12.8
	Hydrological drought	12.4.6.2		12.4.6.2, Table 12.8
	Agricultural and ecological drought	12.4.6.2		12.4.6.2, Table 12.8
	Fire weather	12.4.6.2		12.4.6.2, Table 12.8
Wind	Mean wind speed	12.4.6.3		12.4.6.3, Table 12.8
	Severe wind storm	12.4.6.3		12.4.6.3, Table 12.8
	Tropical cyclone	12.4.6.3		12.4.6.3, Table 12.8
	Sand and dust storm	12.4.6.3		12.4.6.3, Table 12.8
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail	12.4.6.4		12.4.6.4, Table 12.8
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.6.5		12.4.6.5, Table 12.8
	Coastal flood	12.4.6.5		12.4.6.5, Table 12.8
	Coastal erosion	12.4.6.5		12.4.6.5, Table 12.8
	Marine heatwave	12.4.6.5		12.4.6.5, Table 12.8
	Ocean acidity	12.4		12.4, Table 12.8
Other	Air pollution weather	12.4		12.4, Table 12.8
	Atmospheric CO2 at surface	12.4		12.4, Table 12.8
	Radiation at surface	12.4		12.4, Table 12.8

[END TABLE 10.SM.4 HERE]

[START TABLE 10.SM.5 HERE]

Table 10.SM.5: Regional Traceback Matrix for South America. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: N.W.South-America (NWS), Panel B: N.South-America (NSA), Panel C: N.E.South-America (NES), Panel D: South-American-Monsoon (SAM), Panel E: S.W.South-America SWS), Panel F: S.E.South-America (SES), Panel G: S.South-America (SSA). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.W.South-America	N.W.South-America	N.W.South-America
	Accronym	NWS	NWS	NWS
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2	Atlas7.2.2; CH1.4.2.2	12.4.4.1, Table 12.6; Atlas7.2.4
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost	12.4.4.1		12.4.4.1, Table 12.6
Wet and Dry	Mean precipitation	8.3.1.3; 12.4.4.2; Atlas7.2.2	Atlas7.2.2	12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide	12.4.4.2		12.4.4.2, Table 12.6
	Aridity	12.4.4.2		12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel B)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.South-America	N.South-America	N.South-America
	Accronym	NSA	NSA	NSA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2; CH1FAQ1.2	Atlas7.2.2; CH1.4.2.2	12.4.4.1, Table 12.6; Atlas7.2.4; CH1.4.3.2
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost			
Wet and Dry	Mean precipitation	12.4.4.2; Atlas7.2.2	Atlas7.2.2	12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide	12.4.4.2		12.4.4.2, Table 12.6
	Aridity	12.4.4.2		12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		8.4.1.7.1; 12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel C)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.E.South-America	N.E.South-America	N.E.South-America
	Accronym	NES	NES	NES
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2	Atlas7.2.2; CH1.4.2.2	12.4.4.1, Table 12.6; Atlas7.2.4
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost			
Wet and Dry	Mean precipitation	8.3.2.4.5; 12.4.4.2; Atlas7.2.2	Atlas7.2.2	8.4.1.3; 12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide			
	Aridity	12.4.4.2		12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel D)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	South-American-Monsoon	South-American-Monsoon	South-American-Monsoon
	Accronym	SAM	SAM	SAM
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2	Atlas7.2.2; CH1.4.2.2	12.4.4.1, Table 12.6; Atlas7.2.4
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost	12.4.4.1		12.4.4.1, Table 12.6
Wet and Dry	Mean precipitation	8.3.1.3; 8.3.2.4.5; 12.4.4.2; Atlas7.2.2	8.3.1.3; 8.4.1.5; Atlas7.2.2	Box 8.2; 8.4.2.5; 12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide			
	Aridity	12.4.4.2		8.4.1.6; 8.6.2.1; 12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel E)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.W.South-America	S.W.South-America	S.W.South-America
	Accronym	SWS	SWS	SWS
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2	Atlas7.2.2	12.4.4.1, Table 12.6; Atlas7.2.4
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost	12.4.4.1		12.4.4.1, Table 12.6
Wet and Dry	Mean precipitation	8.3.1.3; 12.4.4.2; Atlas7.2.2	8.3.1.3; Atlas7.2.2	12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide	12.4.4.2		12.4.4.2, Table 12.6
	Aridity	8.3.1.6; 12.4.4.2	8.3.1.6;	8.4.1.6; 12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm	12.4.4.3		12.4.4.3, Table 12.6
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel F)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.E.South-America	S.E.South-America	S.E.South-America
	Accronym	SES	SES	SES
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2	Atlas7.2.2	12.4.4.1, Table 12.6; Atlas7.2.4
	Extreme heat	CCB10.3; Table 11.13; 11.3.2; 12.4.4.1	CCB10.3; Table 11.13;	CCB10.3; Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost	12.4.4.1		12.4.4.1, Table 12.6
Wet and Dry	Mean precipitation	8.3.1.3; 8.3.2.4.5; 10.4.2.2; 12.4.4.2; Atlas7.2.2	8.3.1.3; 10.4.2.2; Atlas7.2.2	8.5.2.1; 12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide	12.4.4.2		12.4.4.2, Table 12.6
	Aridity	12.4.4.2; 12.4.4.2		12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm	12.4.4.3		12.4.4.3, Table 12.6
Snow and Ice	Snow, glacier and ice sheet	12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

Panel G)

	Region	SOUTH-AMERICA	SOUTH-AMERICA	SOUTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	S.South-America	S.South-America	S.South-America
	Accronym	SSA	SSA	SSA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.4.1; Atlas7.2.2	Atlas7.2.2	12.4.4.1, Table 12.6; Atlas7.2.4
	Extreme heat	Table 11.13; 11.3.2; 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Cold spell	Table 11.13; 11.3.2: 12.4.4.1	Table 11.13;	Table 11.13; 11.3.5; 12.4.4.1, Table 12.6
	Frost	12.4.4.1		12.4.4.1, Table 12.6
Wet and Dry	Mean precipitation	12.4.4.2; Atlas7.2.2	Atlas7.2.2	12.4.4.2, Table 12.6; Atlas7.2.4
	River flood	11.5.2; 12.4.4.2		11.5.5; 12.4.4.2, Table 12.6
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.4.2	Table 11.14;	Table 11.14; 11.4.5; 12.4.4.2, Table 12.6
	Landslide	12.4.4.2		12.4.4.2, Table 12.6
	Aridity	12.4.4.2		12.4.4.2, Table 12.6
	Hydrological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.4.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.4.2; Table 12.6
	Fire weather	12.4.4.2		12.4.4.2, Table 12.6
Wind	Mean wind speed	12.4.4.3		12.4.4.3, Table 12.6
	Severe wind storm	12.4.4.3		12.4.4.3, Table 12.6
	Tropical cyclone	12.4.4.3		12.4.4.3, Table 12.6
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	8.3.1.7.1; 12.4.4.4		12.4.4.4, Table 12.6
	Permafrost	12.4.4.4		12.4.4.4, Table 12.6
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.4.5		12.4.4.5, Table 12.6
	Coastal flood	12.4.4.5		12.4.4.5, Table 12.6
	Coastal erosion	12.4.4.5		12.4.4.5, Table 12.6
	Marine heatwave	12.4.4.5		12.4.4.5, Table 12.6
	Ocean acidity	12.4		12.4; Table 12.6
Other	Air pollution weather	12.4		12.4; Table 12.6
	Atmospheric CO2 at surface	12.4		12.4; Table 12.6
	Radiation at surface	12.4		12.4; Table 12.6

[END TABLE 10.SM.5 HERE]

[START TABLE 10.SM.6 HERE]

Table 10.SM.6: Regional Traceback Matrix for Europe. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: N.Europe (NEU), Panel B: West&Central-Europe (WCE), Panel C: E.Europe (EEU), Panel D: Mediterranean-Europe (MED). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	EUROPE	EUROPE	EUROPE
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.Europe	N.Europe	N.Europe
	Accronym	NEU	NEU	NEU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.8.2, 12.4.5.1	A.8.2; 1.4.2.2	12.4.5.1, Table 12.7; A.8.4
	Extreme heat	Table 11.8	Table 11.8	12.4.5.1, Table 12.7
	Cold spell	12.4.5.1		12.4.5.1, Table 12.7
	Frost	12.4.5.1		12.4.5.1, Table 12.7
Wet and Dry	Mean precipitation	A.8.2	A.8.2	12.4.5.2, Table 12.7, 8.4, A8.4
	River flood	12.4.5.2		12.4.5.2, Table 12.7
	Heavy precipitation and pluvial flood	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Landslide	12.4.5.2		12.4.5.2, Table 12.7
	Aridity	12.4.5.2		12.4.5.2, Table 12.7
	Hydrological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Agricultural and ecological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Fire weather	12.4.5.2		12.4.5.2, Table 12.7
Wind	Mean wind speed	12.4.5.3		12.4.5.3, Table 12.7
	Severe wind storm	12.4.5.3		12.4.5.3, Table 12.7
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.5.4 9.5.1 A.8.2	A.8.2	12.4.5.4, Table 12.7; A8.4
	Permafrost	12.4.5.4		12.4.5.4, Table 12.7
	Lake, river and sea ice			12.4.5.4, Table 12.7
	Heavy snowfall and ice storm			12.4.5.4, Table 12.7
	Hail			12.4.5.4, Table 12.7
	Snow avalanche			12.4.5.4, Table 12.7
Coastal and Oceanic	Relative sea level	12.4.5.5		12.4.5.5, Table 12.7
	Coastal flood	12.4.5.5		12.4.5.5, Table 12.7
	Coastal erosion	12.4.5.5		12.4.5.5, Table 12.7
	Marine heatwave	12.4.5.5		12.4.5.5, Table 12.7
	Ocean acidity	12.4		12.4, Table 12.7
Other	Air pollution weather	12.4		12.4, Table 12.7
	Atmospheric CO2 at surface	12.4		12.4, Table 12.7
	Radiation at surface	12.4	A.8.2	12.4, Table 12.7

Panel B)

	Region	EUROPE	EUROPE	EUROPE
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	West&Central-Europe	West&Central-Europe	West&Central-Europe
	Accronym	WCE	WCE	WCE
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.5.1; A.8.2	A.8.2; 1.4.2.2	12.4.5.1, Table 12.7; A.8.4
	Extreme heat	Table 11.8	Table 11.8	12.4.5.1, Table 12.7
	Cold spell	12.4.5.1		12.4.5.1, Table 12.7
	Frost	12.4.5.1		12.4.5.1, Table 12.7
Wet and Dry	Mean precipitation	A.8.2	A.8.2	12.4.5.2,8.4.1.3,A8.4
	River flood	12.4.5.2		12.4.5.2, Table 12.7
	Heavy precipitation and pluvial flood	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Landslide	12.4.5.2		12.4.5.2, Table 12.7
	Aridity	12.4.5.2		12.4.5.2, Table 12.7
	Hydrological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Agricultural and ecological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Fire weather	12.4.5.2		12.4.5.2, Table 12.7
Wind	Mean wind speed	12.4.5.3		12.4.5.3, Table 12.7
	Severe wind storm	12.4.5.3		12.4.5.3, Table 12.7
	Tropical cyclone			
	Sand and dust storm	12.4.5.3		12.4.5.3, Table 12.7
Snow and Ice	Snow, glacier and ice sheet	12.4.5.4 9.5.1 A.8.2	A.8.2	12.4.5.4, Table 12.7; A8.4
	Permafrost	12.4.5.4		12.4.5.4, Table 12.7
	Lake, river and sea ice			12.4.5.4, Table 12.7
	Heavy snowfall and ice storm			12.4.5.4, Table 12.7
	Hail			12.4.5.4, Table 12.7
	Snow avalanche			12.4.5.4, Table 12.7
Coastal and Oceanic	Relative sea level	12.4.5.5		12.4.5.5, Table 12.7
	Coastal flood	12.4.5.5		12.4.5.5, Table 12.7
	Coastal erosion	12.4.5.5		12.4.5.5, Table 12.7
	Marine heatwave	12.4.5.5		12.4.5.5, Table 12.7
	Ocean acidity	12.4		12.4, Table 12.7
Other	Air pollution weather	12.4		12.4, Table 12.7
	Atmospheric CO2 at surface	12.4		12.4, Table 12.7
	Radiation at surface	12.4	A.8.2	12.4, Table 12.7

Panel C)

	Region	EUROPE	EUROPE	EUROPE
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.Europe	E.Europe	E.Europe
	Accronym	EEU	EEU	EEU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	A.8.2	A.8.2	12.4.5.1, Table 12.7; A.8.4
	Extreme heat	Table 11.8	Table 11.8	12.4.5.1, Table 12.7
	Cold spell	12.4.5.1		12.4.5.1, Table 12.7
	Frost	12.4.5.1		12.4.5.1, Table 12.7
Wet and Dry	Mean precipitation	A.8.2	A.8.2	12.4.5.2, Table 12.7, 8.4, A8.4
	River flood	12.4.5.2		12.4.5.2, Table 12.7
	Heavy precipitation and pluvial flood	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Landslide	12.4.5.2		12.4.5.2, Table 12.7
	Aridity	12.4.5.2		12.4.5.2, Table 12.7
	Hydrological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Agricultural and ecological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Fire weather	12.4.5.2		12.4.5.2, Table 12.7
Wind	Mean wind speed	12.4.5.3		12.4.5.3, Table 12.7
	Severe wind storm	12.4.5.3		12.4.5.3, Table 12.7
	Tropical cyclone			
	Sand and dust storm	12.4.5.3		12.4.5.3, Table 12.7
Snow and Ice	Snow, glacier and ice sheet	12.4.5.4 9.5.1 A.8.2	A.8.2	12.4.5.4, Table 12.7; A8.4
	Permafrost			
	Lake, river and sea ice			12.4.5.4, Table 12.7
	Heavy snowfall and ice storm			12.4.5.4, Table 12.7
	Hail			12.4.5.4, Table 12.7
	Snow avalanche			12.4.5.4, Table 12.7
Coastal and Oceanic	Relative sea level			
	Coastal flood			
	Coastal erosion			
	Marine heatwave			
	Ocean acidity			
Other	Air pollution weather	12.4		12.4, Table 12.7
	Atmospheric CO2 at surface	12.4		12.4, Table 12.7
	Radiation at surface	12.4		12.4, Table 12.7

Panel D)

	Region	EUROPE	EUROPE	EUROPE
	Region type (Land / Ocean)	Land-Ocean	Land-Ocean	Land-Ocean
	Sub-Region Name	Mediterranean-Europe	Mediterranean-Europe	Mediterranean-Europe
	Accronym	[MED]	[MED]	[MED]
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	A.8.2	A.8.2	12.4.5.1, Table 12.7; A.8.4
	Extreme heat	Table 11.8	Table 11.8	12.4.5.1, Table 12.7
	Cold spell	12.4.5.1		12.4.5.1, Table 12.7
	Frost	12.4.5.1		12.4.5.1, Table 12.7
Wet and Dry	Mean precipitation	A.8.2	A.8.2	12.4.5.2, Table 12.7, 8.4, A8.4
	River flood	12.4.5.2		12.4.5.2, Table 12.7
	Heavy precipitation and pluvial flood	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Landslide	12.4.5.2		12.4.5.2, Table 12.7
	Aridity	12.4.5.2		12.4.5.2, Table 12.7
	Hydrological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Agricultural and ecological drought	Table 11.8	Table 11.8	12.4.5.2, Table 12.7
	Fire weather	12.4.5.2		12.4.5.2, Table 12.7
Wind	Mean wind speed	12.4.5.3		12.4.5.3, Table 12.7
	Severe wind storm	12.4.5.3		12.4.5.3, Table 12.7
	Tropical cyclone			
	Sand and dust storm	12.4.5.3		12.4.5.3, Table 12.7
Snow and Ice	Snow, glacier and ice sheet	12.4.5.4 9.5.1 A.8.2	A.8.2	12.4.5.4, Table 12.7; A8.4
	Permafrost	12.4.5.4		12.4.5.4, Table 12.7
	Lake, river and sea ice			12.4.5.4, Table 12.7
	Heavy snowfall and ice storm			12.4.5.4, Table 12.7
	Hail			12.4.5.4, Table 12.7
	Snow avalanche			12.4.5.4, Table 12.7
Coastal and Oceanic	Relative sea level	12.4.5.5		12.4.5.5, Table 12.7
	Coastal flood	12.4.5.5		12.4.5.5, Table 12.7
	Coastal erosion	12.4.5.5		12.4.5.5, Table 12.7
	Marine heatwave	12.4.5.5		12.4.5.5, Table 12.7
	Ocean acidity	12.4		12.4, Table 12.7
Other	Air pollution weather	12.4		12.4, Table 12.7
	Atmospheric CO2 at surface	12.4		12.4, Table 12.7
	Radiation at surface	12.4	A.8.2	12.4, Table 12.7

[END TABLE 10.SM.6 HERE]

[START TABLE 10.SM.7 HERE]

Table 10.SM.7: Regional Traceback Matrix for North America. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: N.W.North-America (NWN), Panel B: N.E.North-America (NEN), Panel C: W.North-America (WNA), Panel D: C.North-America (CNA), Panel E: E.North-America (ENA). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	NORTH-AMERICA	NORTH-AMERICA	NORTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.W.North-America	N.W.North-America	N.W.North-America
	Accronym	NWN	NWN	NWN
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.6.1, Atlas.5.7.2		12.4.6.1, Table 12.8, Atlas.5.7.4
	Extreme heat	12.4.6.1		12.4.6.1, Table 12.8
	Cold spell	12.4.6.1		12.4.6.1, Table 12.8
	Frost	12.4.6.1		12.4.6.1, Table 12.8
Wet and Dry	Mean precipitation	12.4.6.2		12.4.6.2, Table 12.8, Atlas.5.7.4
	River flood	12.4.6.2		12.4.6.2, Table 12.8
	Heavy precipitation and pluvial flood	12.4.6.2		12.4.6.2, Table 12.8
	Landslide	12.4.6.2		12.4.6.2, Table 12.8
	Aridity	12.4.6.2		12.4.6.2, Table 12.8
	Hydrological drought	12.4.6.2		12.4.6.2, Table 12.8
	Agricultural and ecological drought	12.4.6.2		12.4.6.2, Table 12.8
	Fire weather	12.4.6.2		12.4.6.2, Table 12.8
Wind	Mean wind speed	12.4.6.3		12.4.6.3, Table 12.8
	Severe wind storm	12.4.6.3		12.4.6.3, Table 12.8
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.6.4		12.4.6.4, Table 12.8, Atlas.5.7.4
	Permafrost	12.4.6.4		12.4.6.4, Table 12.8
	Lake, river and sea ice	12.4.6.4		12.4.6.4, Table 12.8
	Heavy snowfall and ice storm	12.4.6.4		12.4.6.4, Table 12.8
	Hail			
	Snow avalanche	12.4.6.4		12.4.6.4, Table 12.8
Coastal and Oceanic	Relative sea level	12.4.6.5		12.4.6.5, Table 12.8
	Coastal flood	12.4.6.5		12.4.6.5, Table 12.8
	Coastal erosion	12.4.6.5		12.4.6.5, Table 12.8
	Marine heatwave	12.4.6.5		12.4.6.5, Table 12.8
	Ocean acidity	12.4		12.4, Table 12.8
Other	Air pollution weather	12.4		12.4, Table 12.8
	Atmospheric CO2 at surface	12.4		12.4, Table 12.8
	Radiation at surface	12.4		12.4, Table 12.8

Panel B)

	Region	NORTH-AMERICA	NORTH-AMERICA	NORTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	N.E.North-America	N.E.North-America	N.E.North-America
	Accronym	NEN	NEN	NEN
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.6.1, Atlas.5.7.2		12.4.6.1, Table 12.8, Atlas.5.7.4
	Extreme heat	12.4.6.1		12.4.6.1, Table 12.8
	Cold spell	12.4.6.1		12.4.6.1, Table 12.8
	Frost	12.4.6.1		12.4.6.1, Table 12.8
Wet and Dry	Mean precipitation	12.4.6.2		12.4.6.2, Table 12.8, Atlas.5.7.4
	River flood	12.4.6.2		12.4.6.2, Table 12.8
	Heavy precipitation and pluvial flood	12.4.6.2		12.4.6.2, Table 12.8
	Landslide			
	Aridity	12.4.6.2		12.4.6.2, Table 12.8
	Hydrological drought	12.4.6.2		12.4.6.2, Table 12.8
	Agricultural and ecological drought	12.4.6.2		12.4.6.2, Table 12.8
	Fire weather	12.4.6.2		12.4.6.2, Table 12.8
Wind	Mean wind speed	12.4.6.3		12.4.6.3, Table 12.8
	Severe wind storm	12.4.6.3		12.4.6.3, Table 12.8
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.6.4		12.4.6.4, Table 12.8, Atlas.5.7.4
	Permafrost	12.4.6.4		12.4.6.4, Table 12.8
	Lake, river and sea ice	12.4.6.4		12.4.6.4, Table 12.8
	Heavy snowfall and ice storm	12.4.6.4		12.4.6.4, Table 12.8
	Hail			
	Snow avalanche	12.4.6.4		12.4.6.4, Table 12.8
Coastal and Oceanic	Relative sea level	12.4.6.5		12.4.6.5, Table 12.8
	Coastal flood	12.4.6.5		12.4.6.5, Table 12.8
	Coastal erosion	12.4.6.5		12.4.6.5, Table 12.8
	Marine heatwave	12.4.6.5		12.4.6.5, Table 12.8
	Ocean acidity	12.4		12.4, Table 12.8
Other	Air pollution weather	12.4		12.4, Table 12.8
	Atmospheric CO2 at surface	12.4		12.4, Table 12.8
	Radiation at surface	12.4		12.4, Table 12.8

Panel C)

	Region	NORTH-AMERICA	NORTH-AMERICA	NORTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	W.North-America	W.North-America	W.North-America
	Accronym	WNA	WNA	WNA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.6.1, Atlas.5.7.2	10.4.2.3; 1.4.2.2	12.4.6.1, Table 12.8, Atlas.5.7.4
	Extreme heat	12.4.6.1		12.4.6.1, Table 12.8
	Cold spell	12.4.6.1		12.4.6.1, Table 12.8
	Frost	12.4.6.1		12.4.6.1, Table 12.8
Wet and Dry	Mean precipitation	12.4.6.2	10.4.2.3	12.4.6.2, Table 12.8, Atlas.5.7.4
	River flood	12.4.6.2		12.4.6.2, Table 12.8
	Heavy precipitation and pluvial flood	12.4.6.2		12.4.6.2, Table 12.8
	Landslide	12.4.6.2		12.4.6.2, Table 12.8
	Aridity	12.4.6.2		12.4.6.2, Table 12.8
	Hydrological drought	12.4.6.2		12.4.6.2, Table 12.8
	Agricultural and ecological drought	12.4.6.2		12.4.6.2, Table 12.8
	Fire weather	12.4.6.2		12.4.6.2, Table 12.8
Wind	Mean wind speed	12.4.6.3		12.4.6.3, Table 12.8
	Severe wind storm	12.4.6.3		12.4.6.3, Table 12.8
	Tropical cyclone	12.4.6.3		12.4.6.3, Table 12.8
	Sand and dust storm	12.4.6.3		12.4.6.3, Table 12.8
Snow and Ice	Snow, glacier and ice sheet	12.4.6.4		12.4.6.4, Table 12.8, Atlas.5.7.4
	Permafrost			
	Lake, river and sea ice	12.4.6.4		12.4.6.4, Table 12.8
	Heavy snowfall and ice storm	12.4.6.4		12.4.6.4, Table 12.8
	Hail	12.4.6.4		12.4.6.4, Table 12.8
	Snow avalanche	12.4.6.4		12.4.6.4, Table 12.8
Coastal and Oceanic	Relative sea level	12.4.6.5		12.4.6.5, Table 12.8
	Coastal flood	12.4.6.5		12.4.6.5, Table 12.8
	Coastal erosion	12.4.6.5		12.4.6.5, Table 12.8
	Marine heatwave	12.4.6.5		12.4.6.5, Table 12.8
	Ocean acidity	12.4		12.4, Table 12.8
Other	Air pollution weather	12.4		12.4, Table 12.8
	Atmospheric CO2 at surface	12.4		12.4, Table 12.8
	Radiation at surface	12.4		12.4, Table 12.8

Panel D)

	Region	NORTH-AMERICA	NORTH-AMERICA	NORTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	C.North-America	C.North-America	C.North-America
	Accronym	CNA	CNA	CNA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.6.1, Atlas.5.7.2; CH1FAQ1.2	1.4.2.2	12.4.6.1, Table 12.8, Atlas.5.7.4; 1.3.6
	Extreme heat	12.4.6.1		12.4.6.1, Table 12.8
	Cold spell	12.4.6.1		12.4.6.1, Table 12.8
	Frost	12.4.6.1		12.4.6.1, Table 12.8
Wet and Dry	Mean precipitation	12.4.6.2		12.4.6.2, Table 12.8, Atlas.5.7.4
	River flood	12.4.6.2		12.4.6.2, Table 12.8
	Heavy precipitation and pluvial flood	12.4.6.2		12.4.6.2, Table 12.8
	Landslide			
	Aridity	12.4.6.2		12.4.6.2, Table 12.8
	Hydrological drought	12.4.6.2		12.4.6.2, Table 12.8
	Agricultural and ecological drought	12.4.6.2		12.4.6.2, Table 12.8
	Fire weather	12.4.6.2		12.4.6.2, Table 12.8
Wind	Mean wind speed	12.4.6.3		12.4.6.3, Table 12.8
	Severe wind storm	12.4.6.3		12.4.6.3, Table 12.8
	Tropical cyclone	12.4.6.3		12.4.6.3, Table 12.8
	Sand and dust storm	12.4.6.3		12.4.6.3, Table 12.8
Snow and Ice	Snow, glacier and ice sheet	12.4.6.4		12.4.6.4, Table 12.8, Atlas.5.7.4
	Permafrost			
	Lake, river and sea ice	12.4.6.4		12.4.6.4, Table 12.8
	Heavy snowfall and ice storm	12.4.6.4		12.4.6.4, Table 12.8
	Hail	12.4.6.4		12.4.6.4, Table 12.8
	Snow avalanche			
Coastal and Oceanic	Relative sea level	12.4.6.5		12.4.6.5, Table 12.8
	Coastal flood	12.4.6.5		12.4.6.5, Table 12.8
	Coastal erosion	12.4.6.5		12.4.6.5, Table 12.8
	Marine heatwave	12.4.6.5		12.4.6.5, Table 12.8
	Ocean acidity	12.4		12.4, Table 12.8
Other	Air pollution weather	12.4		12.4, Table 12.8
	Atmospheric CO2 at surface	12.4		12.4, Table 12.8
	Radiation at surface	12.4		12.4, Table 12.8

Panel E)

	Region	NORTH-AMERICA	NORTH-AMERICA	NORTH-AMERICA
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.North-America	E.North-America	E.North-America
	Accronym	ENA	ENA	ENA
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	**Mean air temperature**	12.4.6.1, Atlas.5.7.2		12.4.6.1, Table 12.8, Atlas.5.7.4
	Extreme heat	12.4.6.1		12.4.6.1, Table 12.8
	Cold spell	12.4.6.1		12.4.6.1, Table 12.8
	Frost	12.4.6.1		12.4.6.1, Table 12.8
Wet and Dry	**Mean precipitation**	12.4.6.2		12.4.6.2, Table 12.8, Atlas.5.7.4
	River flood	12.4.6.2		12.4.6.2, Table 12.8
	Heavy precipitation and pluvial flood	12.4.6.2		12.4.6.2, Table 12.8
	Landslide	12.4.6.2		12.4.6.2, Table 12.8
	Aridity	12.4.6.2		12.4.6.2, Table 12.8
	Hydrological drought	12.4.6.2		12.4.6.2, Table 12.8
	Agricultural and ecological drought	12.4.6.2		12.4.6.2, Table 12.8
	Fire weather	12.4.6.2		12.4.6.2, Table 12.8
Wind	**Mean wind speed**	12.4.6.3		12.4.6.3, Table 12.8
	Severe wind storm	12.4.6.3		12.4.6.3, Table 12.8
	Tropical cyclone	12.4.6.3		12.4.6.3, Table 12.8
	Sand and dust storm			
Snow and Ice	**Snow, glacier and ice sheet**	12.4.6.4		12.4.6.4, Table 12.8, Atlas.5.7.4
	Permafrost			
	Lake, river and sea ice	12.4.6.4		12.4.6.4, Table 12.8
	Heavy snowfall and ice storm	12.4.6.4		12.4.6.4, Table 12.8
	Hail	12.4.6.4		12.4.6.4, Table 12.8
	Snow avalanche	12.4.6.4		12.4.6.4, Table 12.8
Coastal and Oceanic	**Relative sea level**	12.4.6.5		12.4.6.5, Table 12.8
	Coastal flood	12.4.6.5		12.4.6.5, Table 12.8
	Coastal erosion	12.4.6.5		12.4.6.5, Table 12.8
	Marine heatwave	12.4.6.5		12.4.6.5, Table 12.8
	Ocean acidity	12.4		12.4, Table 12.8
Other	**Air pollution weather**	12.4		12.4, Table 12.8
	Atmospheric CO2 at surface	12.4		12.4, Table 12.8
	Radiation at surface	12.4		12.4, Table 12.8

[END TABLE 10.SM.7HERE]

[START TABLE 10.SM.8 HERE]

Table 10.SM.8: Regional Traceback Matrix for Polar. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: Russian-Arctic (RAR), Panel B: Greenland/Iceland (GIC), Panel C: Arctic N.W.North-America (aNWN), Panel D: Arctic N.E.North-America (aNEN), Panel E: Arctic N.Europe (aNEU), Panel F: E.Antarctica (EAN), Panel G: W.Antarctica (WAN). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	POLAR-ARCTIC	POLAR-ARCTIC	POLAR-ARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Russian-Arctic	Russian-Arctic	Russian-Arctic
	Accronym	RAR	RAR	RAR
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.11.2.2; 12.4.9.1	Atlas.11.2.3	Atlas.11.2.4; 12.4.9.1; Table 12.11; Fig. 4.22; 4.3.1; 4.5.1.
	Extreme heat	12.4.9.1		12.4.9.1, Table 12.11
	Cold spell	12.4.9.1	Atlas.11.2.3	12.4.9.1, Table 12.11
	Frost	12.4.9.1		12.4.9.1, Table 12.11
Wet and Dry	Mean precipitation	Atlas.11.2.2; 12.4.9.2	Atlas.11.2.3; 8.3.2.8	Atlas.11.2.4; 12.4.9.2; Table 12.11
	River flood	12.4.9.2	8.2.3	12.4.9.2, Table 12.11
	Heavy precipitation and pluvial flood	12.4.9.2	8.3.2.8	12.4.9.2, Table 12.11
	Landslide	12.4.9.2		12.4.9.2, Table 12.11
	Aridity	12.4.9.2		12.4.9.2, Table 12.11
	Hydrological drought	12.4.9.2		12.4.9.2, Table 12.11
	Agricultural and ecological drought	12.4.9.2		12.4.9.2, Table 12.11
	Fire weather	12.4.9.2		12.4.9.2, Table 12.11
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	Atlas.11.2.2; 12.4.9.4, 12.2.3.2.2, 12.2.3.2.3, 2.3.2.2, 2.3.2.3. 8.3.1.7.1., 8.3.1.7.2, 9.5.1.1.9.5.3.1.,Fig. 9.20	Atlas.11.2.3, 3.4.2, 3.4.3	Atlas.11.2.4; 12.4.9.4; Table 12.11, 8.4.1.7.1, 8.4.1.7.2, 9.5.1.3., 9.5.3.3., Fig 9.21, fig 9.23
	Permafrost	9.5.2.1; 12.4.9.4	9.5.2.1; 9.5.2.2	9.5.2.3; 12.4.9.4, Table 12.11
	Lake, river and sea ice	Atlas.11.2.2; 12.4.9.4; CCB1.1; CH1.3.1; CH1BOX1.2; CH1.4.2.1; CH1.5.3.1; CH1FAQ1.2, 2.3.2.1.1., 9.3.1.	Atlas.11.2.3, 3.4.1.	Atlas.11.2.4 12.4.9.4; Table 12.11 9.3.1
	Heavy snowfall and ice storm	12.4.9.4		12.4.9.4, Table 12.11
	Hail			
	Snow avalanche	12.4.9.4		12.4.9.4, Table 12.11
Coastal and Oceanic	Relative sea level	12.4.9.5		12.4.9.5, Table 12.11
	Coastal flood	12.4.9.5		12.4.9.5, Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5, Table 12.11
	Marine heatwave	12.4.9.5		12.4.9.5, Table 12.11
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather	12.4		12.4, Table 12.11
	Atmospheric CO2 at surface	12.4		12.4, Table 12.11

	Radiation at surface	12.4		12.4, Table 12.11

Panel B)

	Region	POLAR-ARCTIC	POLAR-ARCTIC	POLAR-ARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Greenland/Iceland	Greenland/Iceland	Greenland/Iceland
	Accronym	GIC	GIC	GIC
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.11.2.2; 12.4.9.1; CH1.2.1.2	Atlas.11.2.3	Atlas.11.2.4; 12.4.9.1; Table 12.11; Fig. 4.22; 4.3.1; 4.5.1.
	Extreme heat	12.4.9.1		12.4.9.1, Table 12.11
	Cold spell	12.4.9.1		12.4.9.1, Table 12.11
	Frost	12.4.9.1		12.4.9.1, Table 12.11
Wet and Dry	Mean precipitation	1.1.1.2; 1.1.2; 12.4.9.2	Atlas.11.2.3; 8.3.2.8	Atlas.11.2.4; 12.4.9.2; Table 12.11
	River flood	12.4.9.2	8.2.3.1	12.4.9.2, Table 12.11
	Heavy precipitation and pluvial flood	12.4.9.2	8.2.3.1; 8.3.2.8	12.4.9.2, Table 12.11
	Landslide	12.4.9.2		12.4.9.2, Table 12.11
	Aridity	12.4.9.2		12.4.9.2, Table 12.11
	Hydrological drought	12.4.9.2		12.4.9.2, Table 12.11
	Agricultural and ecological drought	12.4.9.2		12.4.9.2, Table 12.11
	Fire weather	12.4.9.2		12.4.9.2, Table 12.11
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	Atlas.11.2.2; 12.4.9.4, 12.2.3.2.4.1; CH1.3.1; CH1BOX1.2; CH1.5.1.1,2.3.2.2.,2.3.2.3.,2.3.2.4.1. 8.3.1.7.1, 8.3.1.7.2, 9.5.1.1, 9.5.3.1.Fig. 9.16, Fig. 9.20 Fig 9.23	Atlas.11.2.3, 3.4.2, 3.4.3; 8.2.3.1	Atlas.11.2.4; 12.4.9.4; Table 12.11; CH1BOX1.2; CH1FAQ1.1, 8.4.1.7.1, 8.4.1.7.2, 9.4.1.3, 9.4.1.4.,9.5.1.3.,9.5.3.3. Fig. 9.17, Fig 9.21
	Permafrost	12.4.9.4		12.4.9.4, Table 12.11
	Lake, river and sea ice	Atlas.11.2.2; 12.4.9.4, 2.3.2.1.1., 9.3.1.	Atlas.11.2.3,3.4.1.	12.1.1.4; 12.4.9.4; Table 12.11
	Heavy snowfall and ice storm	8.2.3; 12.4.9.4	8.2.3	12.4.9.4, Table 12.11
	Hail			
	Snow avalanche	12.4.9.4		12.4.9.4, Table 12.11
Coastal and Oceanic	Relative sea level	12.4.9.5; CH1.2.1.2; CH1.3.4		12.4.9.5; Table 12.11; CH1BOX1.2
	Coastal flood	12.4.9.5		12.4.9.5, Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5, Table 12.11
	Marine heatwave	12.4.9.5		12.4.9.5, Table 12.11
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather	12.4		12.4, Table 12.11
	Atmospheric CO2 at surface	12.4		12.4, Table 12.11
	Radiation at surface	12.4		12.4, Table 12.11

Panel C)

	Region	POLAR-ARCTIC	POLAR-ARCTIC	POLAR-ARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Arctic N.W.North-America	Arctic N.W.North-America	Arctic N.W.North-America
	Accronym	aNWN	aNWN	aNWN
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.9.1, Atlas.5.7.2; Atlas.9.2; Atlas.11.2.2		12.4.9.1, Table 12.11, Atlas.9.4;
	Extreme heat	12.4.9.1		12.4.9.1, Table 12.11
	Cold spell	12.4.9.1		12.4.9.1, Table 12.11
	Frost	12.4.9.1		12.4.9.1, Table 12.11
Wet and Dry	Mean precipitation	12.4.9.2; Atlas.9.2;	8.2.3.1; 8.3.2.8; 8.4	12.4.9.2, Table 12.11; Atlas.9.4; 8.4.2.8
	River flood	12.4.9.2	8.2.3.1	12.4.9.2, Table 12.11
	Heavy precipitation and pluvial flood	12.4.9.2	8.2.3.1; 8.3.2.8	12.4.9.2, Table 12.11
	Landslide	12.4.9.2		12.4.9.2, Table 12.11
	Aridity	12.4.9.2		12.4.9.2, Table 12.11
	Hydrological drought	12.4.9.2		12.4.9.2, Table 12.11
	Agricultural and ecological drought	12.4.9.2		12.4.9.2, Table 12.11
	Fire weather	12.4.9.2		12.4.9.2, Table 12.11
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.9.4; Atlas.9.2 2.3.2.2., 2.3.2.3, 8.3.1.7.1., 8.3.1.7.2.,9.5.1.1., 9.5.3.1.,Fig. 9.20, Fig 9.23	3.4.2, 3.4.3; 8.2.3.1	12.4.9.4, Table 12.11; Atlas.9.4, 8.4.1.7.1, 8.4.1.7.1, 9.5.1.3., 9.5.3.3. Fig. 9.21
	Permafrost	9.5.2.1; 12.4.9.4	8.2.3.1; 9.5.2.1; 9.5.2.2	9.5.2.3; 12.4.9.4, Table 12.11
	Lake, river and sea ice	12.4.9.4, 2.3.2.1.1., 9.3.1.	3.4.1.	12.4.9.4, Table 12.11
	Heavy snowfall and ice storm	12.4.9.4	8.2.3.1	12.4.9.4, Table 12.11
	Hail			
	Snow avalanche	12.4.9.4		12.4.9.4, Table 12.11
Coastal and Oceanic	Relative sea level	12.4.9.5		12.4.9.5, Table 12.11
	Coastal flood	12.4.9.5		12.4.9.5, Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5, Table 12.11
	Marine heatwave	12.4.9.5		12.4.9.5, Table 12.11
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather	12.4		12.4, Table 12.11
	Atmospheric CO2 at surface	12.4		12.4, Table 12.11
	Radiation at surface	12.4		12.4, Table 12.11

Panel D)

	Region	POLAR-ARCTIC	POLAR-ARCTIC	POLAR-ARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Arctic N.E.North-America	Arctic N.E.North-America	Arctic N.E.North-America
	Accronym	aNEN	aNEN	aNEN
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	12.4.9.1, Atlas.9.2; Atlas.11.2.2		12.4.9.1, Table 12.11, Atlas.9.4
	Extreme heat	12.4.9.1		12.4.9.1, Table 12.11
	Cold spell	12.4.9.1		12.4.9.1, Table 12.11
	Frost	12.4.9.1		12.4.9.1, Table 12.11
Wet and Dry	Mean precipitation	12.4.9.2; Atlas.9.2;	8.2.3.1; 8.3.2.8; 8.4.2.8	12.4.9.2, Table 12.11; Atlas.9.4; 8.4
	River flood	12.4.9.2	8.2.3.1	12.4.9.2, Table 12.11
	Heavy precipitation and pluvial flood	12.4.9.2	8.2.3.1; 8.3.2.8	12.4.9.2, Table 12.11
	Landslide			
	Aridity	12.4.9.2		12.4.9.2, Table 12.11
	Hydrological drought	12.4.9.2		12.4.9.2, Table 12.11
	Agricultural and ecological drought	12.4.9.2		12.4.9.2, Table 12.11
	Fire weather	12.4.9.2		12.4.9.2, Table 12.11
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	12.4.9.4; Atlas.9.2,2.3.2.2., 2.3.2.3, 8.3.1.7.1., 8.3.1.7.2.,9.5.1.1., 9.5.3.1.,Fig. 9.20, Fig 9.23	3.4.2, 3.4.3; 8.2.3.1	12.4.9.4, Table 12.11; Atlas.9.4, 8.4.1.7.1, 8.4.1.7.1, 9.5.1.3., 9.5.3.3. Fig. 9.21
	Permafrost	9.5.2.1; 12.4.9.4	8.2.3.1; 9.5.2.1; 9.5.2.2	9.5.2.3; 12.4.9.4, Table 12.11
	Lake, river and sea ice	12.4.9.4, 2.3.2.1.1., 9.3.1.	3.4.1.	12.4.9.4, Table 12.11
	Heavy snowfall and ice storm	12.4.9.4	8.2.3.1	12.4.9.4, Table 12.11
	Hail			
	Snow avalanche	12.4.9.4		12.4.9.4, Table 12.11
Coastal and Oceanic	Relative sea level	12.4.9.5		12.4.9.5, Table 12.11
	Coastal flood	12.4.9.5		12.4.9.5, Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5, Table 12.11
	Marine heatwave	12.4.9.5		12.4.9.5, Table 12.11
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather	12.4		12.4, Table 12.11
	Atmospheric CO2 at surface	12.4		12.4, Table 12.11
	Radiation at surface	12.4		12.4, Table 12.11

Panel E)

	Region	POLAR-ARCTIC	POLAR-ARCTIC	POLAR-ARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	Arctic N.Europe	Arctic N.Europe	Arctic N.Europe
	Accronym	aNEU	aNEU	aNEU
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	CH1.4.2.2; Atlas.8.2, 12.4.9.1	Atlas.8.2	12.4.9.1, Table 12.11; A.8.4
	Extreme heat	Table 11.8; 12.4.5.1, 12.4.9.1	Table 11.8	12.4.5.1, 12.4.9.1, Table 12.7, Table 12.11
	Cold spell	12.4.5.1, 12.4.9.1		12.4.5.1, 12.4.9.1, Table 12.7, Table 12.11
	Frost	12.4.5.1, 12.4.9.1		12.4.5.1, 12.4.9.1, Table 12.7, Table 12.11
Wet and Dry	Mean precipitation	Atlas.8.2; 12.4.5.2, 12.4.9.2	Atlas.8.2; 12.4.5.2, 12.4.9.2; 8.3.2.8; 8.4.2.8	12.4.5.2, 12.4.9.2, Table 12.7, Table 12.11; Atlas.8.4; 8.4
	River flood	12.4.5.2, 12.4.9.2		12.4.5.2, 12.4.9.2, Table 12.7, Table 12.11
	Heavy precipitation and pluvial flood	Table 11.8; 12.4.5.2, 12.4.9.2	Table 11.8; 8.3.2.8	12.4.5.2, 12.4.9.2, Table 12.7, Table 12.11
	Landslide	12.4.5.2, 12.4.9.2		12.4.5.2, 12.4.9.2
	Aridity	12.4.5.2, 12.4.9.2		12.4.5.2, 12.4.9.2
	Hydrological drought	Table 11.8; 12.4.5.2, 12.4.9.2	Table 11.8	12.4.5.2, 12.4.9.2, Table 12.7, Table 12.11
	Agricultural and ecological drought	Table 11.8; 12.4.5.2, 12.4.9.2	Table 11.8	12.4.5.2, 12.4.9.2, Table 12.7, Table 12.11
	Fire weather	12.4.5.2, 12.4.9.2		12.4.5.2, 12.4.9.2, Table 12.7, Table 12.11
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	Atlas.8.2; 12.4.5.4, 12.4.9.4, 2.3.2.2., 2.3.2.3, 8.3.1.7.1., 8.3.1.7.2.,9.5.1.1., 9.5.3.1.,Fig. 9.20, Fig 9.23	Atlas.8.2, 3.4.2, 3.4.3	12.4.9.4, Table 12.11; Atlas.8.4, 8.4.1.7.1, 8.4.1.7.1, 9.5.1.3., 9.5.3.3. Fig. 9.21
	Permafrost	9.5.2.1; 12.4.5.4, 12.4.9.4, 2.3.2.5	9.5.2.1; 9.5.2.2	9.5.2.3; 12.4.5.4, 12.4.9.4, Table 12.7, Table 12.11
	Lake, river and sea ice	12.4.5.4, 12.4.9.4, 2.3.2.1.1., 9.3.1.	3.4.1.	12.4.5.4, 12.4.9.4, Table 12.7, Table 12.11,
	Heavy snowfall and ice storm	12.4.5.4, 12.4.9.4		12.4.5.4, 12.4.9.4
	Hail	12.4.5.4, 12.4.9.4		12.4.5.4, 12.4.9.4, Table 12.7, Table 12.11
	Snow avalanche	12.4.5.4, 12.4.9.4		12.4.5.4, 12.4.9.4, Table 12.7, Table 12.11
Coastal and Oceanic	Relative sea level	12.4.9.5		12.4.9.5, Table 12.11
	Coastal flood	12.4.9.5		12.4.9.5, Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5, Table 12.11
	Marine heatwave	12.4.9.5		12.4.9.5, Table 12.11
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather	12.4		12.4, Table 12.11
	Atmospheric CO2 at surface	12.4		12.4, Table 12.11
	Radiation at surface	Atlas..8.2; 12.4.0	Atlas.8.2	12.4, Table 12.11

Panel F)

	Region	POLAR-ANTARCTIC	POLAR-ANTARCTIC	POLAR-ANTARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	E.Antarctica	E.Antarctica	E.Antarctica
	Accronym	EAN	EAN	EAN
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.11.1.2; 12.4.9.1	Atlas.11.1.2	Atlas.11.1.4; 12.4.9.1; Table 12.11; Fig. 4.22; 4.3.1; 4.5.1.
	Extreme heat	12.4.9.1		12.4.9.1, Table 12.11
	Cold spell	12.4.9.1		12.4.9.1, Table 12.11
	Frost	12.4.9.1		12.4.9.1, Table 12.11
Wet and Dry	Mean precipitation	Atlas.11.1.2; 12.4.9.2	Atlas.11.1.2; 8.3.2.8	Atlas.11.1.4; 12.4.9.2; Table 12.11
	River flood	NA		NA
	Heavy precipitation and pluvial flood	12.4.9.2	8.3.2.8	12.4.9.2; Table 12.11
	Landslide	12.4.9.2		12.4.9.2; Table 12.11
	Aridity	12.4.9.2		12.4.9.2; Table 12.11
	Hydrological drought	12.4.9.2		12.4.9.2; Table 12.11
	Agricultural and ecological drought	NA		NA
	Fire weather	NA		NA
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone	NA		
	Sand and dust storm	NA		
Snow and Ice	Snow, glacier and ice sheet	9.4.2.1, 9.5.1.1; 2.3.2.4.2; Atlas.11.1.2; 12.4.9.4, CH1.2.1.1; CH1.3.1; CH1BOX1.2,	9.4.2.1, 9.5.1.1; Atlas.11.1.2, 3.4.3.2	9.4.2.3, Atlas.11.1.4; 12.4.9.2; Table 12.11; CH1BOX1.2 9.4.2.5, 9.4.2.6. Fig. 9.18
	Permafrost	12.4.9.4		12.4.9.4, Table 12.11
	Lake, river and sea ice	12.4.9.4; CCB1.1; CH1BOX1.2,2.3.2.1.2., 9.3.2.	3.4.1.	12.4.9.4; Table 12.11; CH1FAQ1.2
	Heavy snowfall and ice storm	12.4.9.4		12.4.9.4, Table 12.11
	Hail			
	Snow avalanche	12.4.9.4		12.4.9.4, Table 12.11
Coastal and Oceanic	Relative sea level	9.6.1; 12.4.9.5	Box 9.1, 9.6.1	9.6.3; 12.4.9.5; Table 12.11; CH1BOX1.2
	Coastal flood	12.4.9.5		12.4.9.5; Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5; Table 12.11
	Marine heatwave	9.2; 12.4.9.5		
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather			
	Atmospheric CO2 at surface	CH1.2.1.2; 12,4		12.4, Table 12.11
	Radiation at surface	12.4		12.4, Table 12.11

Panel G)

	Region	POLAR-ANTARCTIC	POLAR-ANTARCTIC	POLAR-ANTARCTIC
	Region type (Land / Ocean)	Land	Land	Land
	Sub-Region Name	W.Antarctica	W.Antarctica	W.Antarctica
	Accronym	WAN	WAN	WAN
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.11.1.2; 12.4.9.1	Atlas.11.1.2	Atlas.11.1.4; 12.4.9.1; Table 12.11; Fig. 4.22; 4.3.1; 4.5.1.
	Extreme heat	12.4.9.1		12.4.9.1, Table 12.11
	Cold spell	12.4.9.1		12.4.9.1, Table 12.11
	Frost	12.4.9.1		12.4.9.1, Table 12.11
Wet and Dry	Mean precipitation	Atlas.11.1.2; 12.4.9.2	Atlas.11.1.2; 8.3.2.8	Atlas.11.1.4; 12.4.9.2; Table 12.11
	River flood			
	Heavy precipitation and pluvial flood	NA	8.3.2.8	NA
	Landslide	12.4.9.2		12.4.9.2; Table 12.11
	Aridity	12.4.9.2		12.4.9.2; Table 12.11
	Hydrological drought	12.4.9.2		12.4.9.2; Table 12.11
	Agricultural and ecological drought	12.4.9.2		12.4.9.2; Table 12.11
	Fire weather			
Wind	Mean wind speed	12.4.9.3		12.4.9.3, Table 12.11
	Severe wind storm	12.4.9.3		12.4.9.3, Table 12.11
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet	9.4.2.1, 9.5.1.1; Atlas.11.1.2; 12.4.9.4; CH1.2.1.1; CH1.3.1; CH1BOX1.2, 2.3.2.4.2;	9.4.2.1, 9.5.1.1; Atlas.11.1.2, 3.4.3.2.	9.4.2.5, 9.4.2.6, Atlas.11.1.4; 12.4.9.4; Table 12.11; CH1BOX1.2
	Permafrost	9.5.2.1; 12.4.9.4, 2.3.2.4.2	9.5.2.1; 9.5.2.2	9.5.2.3; 12.4.9.4; Table 12.11
	Lake, river and sea ice	9.5.2.3; 12.4.9.4; Table 12.11,2.3.2.1.2., 9.3.2.	3.4.1.	12.4.9.4; Table 12.11; CH1FAQ1.2
	Heavy snowfall and ice storm	12.4.9.4		12.4.9.4, Table 12.11
	Hail			
	Snow avalanche	12.4.9.4		12.4.9.4, Table 12.11
Coastal and Oceanic	Relative sea level	9.6.1; 12.4.9.5	Box 9.1, 9.6.1	9.6.3; 12.4.9.5; Table 12.11; CH1BOX1.2
	Coastal flood	12.4.9.5		12.4.9.5; Table 12.11
	Coastal erosion	12.4.9.5		12.4.9.5; Table 12.11
	Marine heatwave	9.2; 12.4.9.5		12.4.9.5; Table 12.11
	Ocean acidity	12.4		12.4, Table 12.11
Other	Air pollution weather			
	Atmospheric CO2 at surface	CH1.2.1.2; 12,4		12.4, Table 12.11
	Radiation at surface	12.4		12.4, Table 12.11

[START TABLE 10.SM.8 HERE]

[START TABLE 10.SM.9 HERE]

Table 10.SM.9: Regional Traceback Matrix for Small Islands. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: Caribbean (CAR), Panel B: Pacific Islands (EPO/SPO), Panel C: Western Indian Ocean Islands (EIO/SIO). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	SMALL ISLANDS	SMALL ISLANDS	SMALL ISLANDS
	Region type (Land / Ocean)	Land-Ocean	Land-Ocean	Land-Ocean
	Sub-Region Name	Caribbean	Caribbean	Caribbean
	Accronym	CAR	CAR	CAR
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1; 12.4.7.1		Atlas.10.4; 12.4.7.1, Table 12.9
	Extreme heat	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1; Table 11.13; 11.3.2; 12.4.7.1	Table 11.13	Table 11.13; 11.3.5; 12.4.7.1, Table 12.9
	Cold spell	Atlas.10.2; Table 11.13; 11.3.2	Table 11.13	Table 11.13; 11.3.5
	Frost			
Wet and Dry	Mean precipitation	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1; 12.4.7.2	Cross-chapter Box Atlas.2	Atlas.10.4; 12.4.7.2, Table 12.9
	River flood	11.5.2; 12.4.7.2		11.5.5; 12.4.7.2
	Heavy precipitation and pluvial flood	Table 11.14; 11.4.2; 12.4.7.2	Table 11.14	Table 11.14; 11.4.5; 12.4.7.2, Table 12.9
	Landslide	12.4.7.2		12.4.7.2, Table 12.9
	Aridity	Cross-chapter Box Atlas.2 Table 1; 12.4.7.2		12.4.7.2, Table 12.9
	Hydrological drought	Table 11.15; 11.6.2; 12.4.7.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.7.2, Table 12.9
	Agricultural and ecological drought	Table 11.15; 11.6.2; 12.4.7.2	Table 11.15; 11.6.4	Table 11.15; 11.6.5; 12.4.7.2, Table 12.9
	Fire weather	12.4.7.2		12.4.7.2, Table 12.9
Wind	Mean wind speed	12.4.7.3		12.4.7.3, Table 12.9
	Severe wind storm	12.4.7.3		12.4.7.3, Table 12.9
	Tropical cyclone	12.4.7.3		12.4.7.3, Table 12.9
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	Cross-chapter Box Atlas.2 Table 1; 12.4.7.5		12.4.7.5, Table 12.9
	Coastal flood	12.4.7.5		12.4.7.5, Table 12.9
	Coastal erosion	12.4.7.5		12.4.7.5, Table 12.9
	Marine heatwave	12.4.7.5		12.4.7.5, Table 12.9
	Ocean acidity	12.4		12.4; Table 12.9
Other	Air pollution weather	12.4		12.4; Table 12.9
	Atmospheric CO2 at surface	12.4		12.4; Table 12.9

	Radiation at surface	12.4		12.4; Table 12.9

Panel B)

	Region	SMALL ISLANDS	SMALL ISLANDS	SMALL ISLANDS
	Region type (Land / Ocean)	Land-Ocean	Land-Ocean	Land-Ocean
	Sub-Region Name	Pacific Islands	Pacific Islands	Pacific Islands
	Accronym	[EPO/SPO]	[EPO/SPO]	[EPO/SPO]
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	**Mean air temperature**	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1; 12.4.7.1		Atlas.10.4; 12.4.7.1, Table 12.9
	Extreme heat	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1; 11.3.2; 12.4.7.1		12.4.7.1, Table 12.9
	Cold spell	Atlas.10.2; 11.3.2		
	Frost			
Wet and Dry	**Mean precipitation**	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1; 12.4.7.2	Cross-chapter Box Atlas.2	Atlas.10.4; 12.4.7.2, Table 12.9
	River flood	11.5.2; 12.4.7.2		11.5.5; 12.4.7.2, Table 12.9
	Heavy precipitation and pluvial flood	11.4.2; 12.4.7.2		11.4.5; 12.4.7.2, Table 12.9
	Landslide	12.4.7.2		12.4.7.2, Table 12.9
	Aridity	Cross-chapter Box Atlas.2 Table 1; 12.4.7.2		12.4.7.2, Table 12.9
	Hydrological drought	12.4.7.2		12.4.7.2, Table 12.9
	Agricultural and ecological drought	12.4.7.2		12.4.7.2, Table 12.9
	Fire weather	12.4.7.2		12.4.7.2, Table 12.9
Wind	**Mean wind speed**	12.4.7.3		12.4.7.3, Table 12.9
	Severe wind storm	12.4.7.3		12.4.7.3, Table 12.9
	Tropical cyclone	Cross-chapter Box Atlas.2 Table 1; 12.4.7.3		12.4.7.3, Table 12.9
	Sand and dust storm			
Snow and Ice	**Snow, glacier and ice sheet**			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	**Relative sea level**	Cross-chapter Box Atlas.2 Table 1; 12.4.7.5; 1.3.1		12.4.7.5, Table 12.9
	Coastal flood	12.4.7.5		12.4.7.5, Table 12.9
	Coastal erosion	12.4.7.5		12.4.7.5, Table 12.9
	Marine heatwave	12.4.7.5		12.4.7.5, Table 12.9
	Ocean acidity	12.4		12.4, Table 12.9
Other	**Air pollution weather**	12.4		12.4, Table 12.9
	Atmospheric CO2 at surface	12.4		12.4, Table 12.9
	Radiation at surface	12.4		12.4, Table 12.9

Panel C)

	Region	SMALL ISLANDS	SMALL ISLANDS	SMALL ISLANDS
	Region type (Land / Ocean)	Land-Ocean	Land-Ocean	Land-Ocean
	Sub-Region Name	Western Indian Ocean Islands	Western Indian Ocean Islands	Western Indian Ocean Islands
	Accronym	[EIO/SIO]	[EIO/SIO]	[EIO/SIO]
	Data Type	Observational	Detection & Attribution	Projections
Heat and Cold	Mean air temperature	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1		Atlas.10.4
	Extreme heat			
	Cold spell			
	Frost			
Wet and Dry	Mean precipitation	Atlas.10.2; Cross-chapter Box Atlas.2 Table 1;		Atlas.10.4
	River flood			
	Heavy precipitation and pluvial flood			
	Landslide			
	Aridity			
	Hydrological drought			
	Agricultural and ecological drought			
	Fire weather			
Wind	Mean wind speed			
	Severe wind storm			
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet			
	Permafrost			
	Lake, river and sea ice			
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal and Oceanic	Relative sea level	Cross-chapter Box Atlas.2 Table 1; 1.3.1		
	Coastal flood			
	Coastal erosion			
	Marine heatwave			
	Ocean acidity			
Other	Air pollution weather			
	Atmospheric CO2 at surface			
	Radiation at surface			

[END TABLE 10.SM.9 HERE]

[START TABLE 10.SM.10 HERE]

Table 10.SM.10: Regional Traceback Matrix for Open Ocean Regions. Table shows chapter traceability of the regional assessment using observed trends, attribution of trends or events, and climate model projections, as described in Cross-Chapter Box 10.3. The Table is divided into separate panels that correspond to the WGI AR6 Reference Regions. African sub-regions are: Panel A: Arctic-Ocean (ARO), Panel B: N.Pacific-Ocean (NPO), Panel C: Equatorial.Pacific-Ocean (EPO), Panel D: S.Pacific-Ocean (SPO), Panel E: N.Atlantic-Ocean (NAO), Panel F: Equatorial.Atlantic-Ocean (EAO), Panel G: S.Atlantic-Ocean (SAO), Panel H: Arabian-Sea (ARS), Panel I: Bay-of-Bengal (BOB), Panel J: Equatorial.Indic-Ocean (EIO), Panel K: S.Indic-Ocean (SIO), Panel L: Southern-Ocean (SOO). Blank cells in the observations and projections columns corresponding to the "not broadly relevant" or "no evidence" category as described in the CID framework in Chapter 12. Blank cells in the detection and attribution columns correspond to no studies being available.

Panel A)

	Region	ARCTIC	ARCTIC	ARCTIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Arctic-Ocean	Arctic-Ocean	Arctic-Ocean
	Accronym	ARO	ARO	ARO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	**Mean ocean temperature**	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8, 12.4.9		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	2.3.2.1.1, 9.3.1, 2.3.2.1.1, 9.3.1, 12.4.8, 12.4.9	3.4.1.1,	4.3.2, 9.3.1, 4.3.2, 9.3.1, 12.4.8, Table 12.4.9, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8, 12.4.9		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel B)

	Region	PACIFIC	PACIFIC	PACIFIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	N.Pacific-Ocean	N.Pacific-Ocean	N.Pacific-Ocean
	Accronym	NPO	NPO	NPO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	**Mean ocean temperature**	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel C)

	Region	PACIFIC	PACIFIC	PACIFIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Equatorial.Pacific-Ocean	Equatorial.Pacific-Ocean	Equatorial.Pacific-Ocean
	Accronym	EPO	EPO	EPO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.2,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel D)

	Region	PACIFIC	PACIFIC	PACIFIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	S.Pacific-Ocean	S.Pacific-Ocean	S.Pacific-Ocean
	Accronym	SPO	SPO	SPO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel E)

	Region	ATLANTIC	ATLANTIC	ATLANTIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	N.Atlantic-Ocean	N.Atlantic-Ocean	N.Atlantic-Ocean
	Accronym	NAO	NAO	NAO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel F)

	Region	ATLANTIC	ATLANTIC	ATLANTIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Equatorial.Atlantic-Ocean	Equatorial.Atlantic-Ocean	Equatorial.Atlantic-Ocean
	Accronym	EAO	EAO	EAO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.2,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel G)

	Region	ATLANTIC	ATLANTIC	ATLANTIC
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	S.Atlantic-Ocean	S.Atlantic-Ocean	S.Atlantic-Ocean
	Accronym	SAO	SAO	SAO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel H)

	Region	INDIAN	INDIAN	INDIAN
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Arabian-Sea	Arabian-Sea	Arabian-Sea
	Accronym	ARS	ARS	ARS
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.2,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel I)

	Region	INDIAN	INDIAN	INDIAN
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Bay-of-Bengal	Bay-of-Bengal	Bay-of-Bengal
	Accronym	BOB	BOB	BOB
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.2,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel J)

	Region	INDIAN	INDIAN	INDIAN
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Equatorial.Indic-Ocean	Equatorial.Indic-Ocean	Equatorial.Indic-Ocean
	Accronym	EIO	EIO	EIO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.2,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel K)

	Region	INDIAN	INDIAN	INDIAN
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	S.Indic-Ocean	S.Indic-Ocean	S.Indic-Ocean
	Accronym	SIO	SIO	SIO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	, 12.4.8		, 12.4.8, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

Panel L)

	Region	SOUTHERN	SOUTHERN	SOUTHERN
	Region type (Land / Ocean)	Ocean	Ocean	Ocean
	Sub-Region Name	Southern-Ocean	Southern-Ocean	Southern-Ocean
	Accronym	SOO	SOO	SOO
	Data Type	Observational	Detection & Attribution	Projections
Open Oceans	Mean ocean temperature	2.3.3.1, 9.2.2.1, 12.4.8	3.5.1.1,	4.5.2.1,9.2.2.1, 12.4.8, Table 12.10
	Marine heatwave	BOX 9.2:, 12.4.8		BOX 9.2:, 12.4.8, Table 12.10
	Severe storm and waves	9.6.4.1,		9.6.4.2,
	Sea ice	2.3.2.1.2, 9.3.2, 2.3.2.1.2, 9.3.2, 12.4.8, 12.4.9	3.4.1.2,	9.3.2, 9.3.2, 12.4.8, 12.4.9, Table 12.10
	Subsea permafrost	5.4.9.1.3,		5.4.9.1.3,
	Ocean acidity	2.3.3.5,5.3, 12.4.8		4.5.2.2,5.3, 12.4.8, Table 12.10
	Dissolved oxygen	2.3.3.6, 12.4.8		5.3.3.2, 12.4.8, Table 12.10
	Ocean salinity	2.3.3.2,9.2.2.2, 12.4.8	3.5.2,	9.2.2.2, 12.4.8, Table 12.10

[END TABLE 10.SM.10 HERE]

10.SM.2 Data Table

[START TABLE 10.SM.11 HERE]

Table 10.SM.11: Input Data Table. Input datasets and code used to create chapter figures.

Figure number	Dataset / Code name	Type	Filename / Specificities	License type	Dataset / Code citation	Dataset / Code URL	Related publications / Software used	Notes
Figure 10.6	Figure 10.6 Code	Code	recipe_boxplot_Med.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10/		Requires working_cordex_2.2 ESMValCore branch
Figure 10.6	Figure 10.6 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.6	Figure 10.6 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.6 (a)	Berkeley Earth	Input	Land_and_Ocean_LatLong1.nc			http://berkeleyearth.lbl.gov/auto/Global/Gridded/Land_and_Ocean_LatLong1.nc	(Rohde et al., 2013)	land_source_history = "13-Jan-2020 17:22:52", ocean_source_history = "07-Jan-2020 10:46:06"
Figure 10.6 (a)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.	Open Governm		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/	(Harris et al., 2020)	

			tmp.dat.nc	ent Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		tmp/cru_ts4.04.1901.2019.tmp.dat.nc.gz		
Figure 10.6 (a)	HadCRUT4	Input	HadCRUT.4.6.0.0.median.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/temperature/HadCRUT.4.6.0.0.median.nc	(Morice et al., 2012)	
Figure 10.6 (a)	HadCRUT5	Input	HadCRUT.5.0.0.0.anomalies.ensemble_mean.nc and absolute_v5.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/v		https://crudata.uea.ac.uk/cru/data/temperature/HadCRUT.5.0.0.0.anomalies.ensemble_mean.nc	(Morice et al., 2021)	Absolute values build by adding the anomaly https://crudata.uea.ac.uk/cru/data/temperature/absolute_v5.nc

				ersion/3/				
Figure 10.6 (a)	E-OBS 0.1°	Input	tg_ens_mean_0.1deg_reg_v21.0e.nc			https://knmi-ecad-assets-prd.s3.amazonaws.com/ensembles/data/Grid_0.1deg_reg_ensemble/tg_ens_mean_0.1deg_reg_v21.0e.nc	(Cornes et al., 2018)	
Figure 10.6 (a)	E-OBS 0.25°	Input	tg_ens_mean_0.25deg_reg_v21.0e.nc			https://knmi-ecad-assets-prd.s3.amazonaws.com/ensembles/data/Grid_0.25deg_reg_ensemble/tg_ens_mean_0.25deg_reg_v21.0e.nc	(Cornes et al., 2018)	
Figure 10.6 (a)	WFDE5 v1.0	Input	Tair_WFDE5_CRU_[197901-201812]_v1.0.nc	The dataset is distributed under the Licence to Use Copernicus Products. The corrections applied are based upon CRU TS4.03, distributed under the Open Database License (OdbL)	https://doi.org/10.24381/cds.20d54e34	https://cds.climate.copernicus.eu/cdsapp#!/dataset/derived-near-surface-meteorological-variables?tab=overview	(Cucchi et al., 2020)	
Figure 10.6 (a)	ERA5	Input	tas_Amon_reanalysis_ERA5_197901-201912.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/ECMWF/IFS-Cy41r2/ERA5/mon/atmos/tas/tas_Amon_reanalysis_ERA5_197901-201912.nc	(Hersbach et al., 2020)	tracking_id = "face81a8-3ecc-4a72-b1af-a1a430405c7b"

Figure 10.6 (a)	ERA-Interim	Input	tas_Amon_reanalysis_ERA-Interim_197901-201908.nc	CC BY-SA 4.0		https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/ECMWF/IFS-Cy31r2/ERA-Interim/mon/atmos/tas/tas_Amon_reanalysis_ERA-Interim_197901-201908.nc	(Dee et al., 2011)	tracking_id = "0a105dae-21fd-4f6e-b8e9-0a0fada689d1"
Figure 10.6 (a)	CERA-20C	Input	tas_Amon_reanalysis_CERA-20C_190101-201012.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/ECMWF/IFS-Cy41r2/CERA-20C/mon/atmos/tas/tas_Amon_reanalysis_CERA-20C_190101-201012.nc	(Laloyaux et al., 2018)	tracking_id = "22f6cece-ad07-4444-a07d-7a91f12b1b6e"
Figure 10.6 (a)	JRA-25	Input	tas_Amon_reanalysis_JRA-25_197901-201312.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/JMA/JRA-25/JRA-25/mon/atmos/tas/tas_Amon_reanalysis_JRA-25_197901-201312.nc	(ONOGI et al., 2007)	tracking_id = "98441bb9-1b0f-4919-b6ee-fea8f886dd14"
Figure 10.6 (a)	JRA-55	Input	tas_Amon_reanalysis_JRA-55_195801-201912.nc	CC BY-SA 4.0		https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/JMA/JRA-55/JRA-55/mon/atmos/tas/tas_Amon_reanalysis_JRA-55_195801-201912.nc	(Kobayashi et al., 2015)	tracking_id = "9e276e16-79d7-46e5-a3da-39ecf1c2a871"
Figure 10.6 (a)	CFSR	Input	tas_Amon_reanalysis_CFSR_197901-201912.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/NOAA-NCEP/CFSR/CFSR/mon/atmos/tas/tas_Amon_reanalysis_CFSR_197901-201912.nc	(Saha et al., 2010)	tracking_id = "4ff071f5-37b4-4414-9ba1-d2eab7e24d0f"
Figure 10.6 (a)	MERRA	Input	tas_Amon_reanalysis_MERRA_197901-201602.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/NASA-GMAO/GEOS-5/MERRA/mon/atmos/tas/tas_Amon_reanalysis_MERRA_197901-201602.nc	(Rienecker et al., 2011)	tracking_id = "d742c24b-6ed0-41d0-a02a-dd7039f245b2"
Figure 10.6 (a)	MERRA2	Input	tas_Amon_reanalysis_MERRA2_198001-			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/NASA-GMAO/GEOS-5/MERRA2/mon/atmos/tas/tas_Amo	(Gelaro et al., 2017)	tracking_id = "e77fd4de-19c2-45ad-afe2-

			201912.nc			n_reanalysis_MERRA2_198001-201912.nc		ce3f6c1eb148"
Figure 10.6 (b)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.pre.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/pre/cru_ts4.04.1901.2019.pre.dat.nc.gz	(Harris et al., 2020)	Precipitation is conditioned on stn (nc file variable, number of stations contributing to each datum) being at least 1. Seasonal statistics requires 2 out of 3 seasons to be valid. Climate statistics requires 80% of data to be valid.
Figure 10.6 (b)	GPCC V2018 1.0°	Input	full_data_monthly_v2018_10.nc.gz	may be used without any restrictions provided that the source is acknowledged https://www.dwd.de/EN/service/copyright/copyright_	doi: 10.5676/DWD_GPCC/FD_M_V2018_100	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_10.nc.gz	(Schneider et al., 2018)	Precipitation is conditioned on numgauge (nc file variable, gauges per gridcell) being at least 1. Seasonal statistics requires 2 out of 3 seasons to be valid.

				node.html				
Figure 10.6 (b)	REGEN	Input	REGEN_AllStns_V1-2019_[1950 … 2016].nc and REGEN_AllStns_V1-2019_1950-2016_QualityMask.nc			http://dapds00.nci.org.au/thredds/fileServer/ks32/CLEX_Data/REGEN_AllStns/v1-2019/REGEN_AllStns_V1-2019_[1950 … 2016].nc	(Contractor et al., 2020)	Precipitation data is conditioned on the Quality Mask. Seasonal statistics requires 2 out of 3 seasons to be valid.
Figure 10.6 (b)	E-OBS 0.1°	Input	rr_ens_mean_0.1deg_reg_v21.0e.nc			https://knmi-ecad-assets-prd.s3.amazonaws.com/ensembles/data/Grid_0.1deg_reg_ensemble/rr_ens_mean_0.1deg_reg_v21.0e.nc	(Cornes et al., 2018)	
Figure 10.6 (b)	E-OBS 0.25°	Input	rr_ens_mean_0.25deg_reg_v21.0e.nc			https://knmi-ecad-assets-prd.s3.amazonaws.com/ensembles/data/Grid_0.25deg_reg_ensemble/rr_ens_mean_0.25deg_reg_v21.0e.nc	(Cornes et al., 2018)	
Figure 10.6 (b)	GHCN V2	Input	precip.mon.total.nc			ftp://ftp.cdc.noaa.gov/Datasets/ghcngridded/precip.mon.total.nc	(Jones and Moberg, 2003)	
Figure 10.6 (b)	WFDE5 v1.0	Input	Rainf_WFDE5_CRU+GPCC_[197901-201612]_v1.0.nc	The dataset is distributed under the Licence to Use Copernicus Products. The corrections applied are based	https://doi.org/10.24381/cds.20d54e34	https://cds.climate.copernicus.eu/cdsapp#!/dataset/derived-near-surface-meteorological-variables?tab=overview	(Cucchi et al., 2020)	

				upon CRU TS4.03, distributed under the Open Database License (OdbL)				
Figure 10.6 (b)	CFSR	Input	pr_Amon_reanalysis_CFSR_197901-201912.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/NOAA-NCEP/CFSR/CFSR/mon/atmos/pr/pr_Amon_reanalysis_CFSR_197901-201912.nc	(Saha et al., 2010)	tracking_id = "db487707-b207-4649-ac4b-3ed9942b869b"
Figure 10.6 (b)	ERA-Interim	Input	pr_Amon_reanalysis_ERA-Interim_197901-201908.nc	CC BY-SA 4.0		https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/ECMWF/IFS-Cy31r2/ERA-Interim/mon/atmos/pr/pr_Amon_reanalysis_ERA-Interim_197901-201908.nc	(Dee et al., 2011)	tracking_id = "6d7345ee-46d9-460d-b367-7a91644196a9"
Figure 10.6 (b)	ERA5	Input	pr_Amon_reanalysis_ERA5_197901-201912.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/ECMWF/IFS-Cy41r2/ERA5/mon/atmos/pr/pr_Amon_reanalysis_ERA5_197901-201912.nc	(Hersbach et al., 2020)	tracking_id = "54f6aaa0-00f1-468e-9d1d-f25b04bb9fb3"
Figure 10.6 (b)	JRA-55	Input	pr_Amon_reanalysis_JRA-55_195801-201912.nc	CC BY-SA 4.0		https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/JMA/JRA-55/JRA-55/mon/atmos/pr/pr_Amon_reanalysis_JRA-55_195801-201912.nc	(Kobayashi et al., 2015)	tracking_id = "d5394ca7-e30d-4724-8569-e56293cebfaf"
Figure 10.6 (b)	MERRA	Input	pr_Amon_reanalysis_MERRA_197901-201602.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/NASA-GMAO/GEOS-5/MERRA/mon/atmos/pr/pr_Amon_reanalysis_MERRA_197901-201602.nc	(Rienecker et al., 2011)	tracking_id = "eca6f8ec-36af-4a15-a5ed-606531c7c686"

Figure 10.6 (b)	MERRA2	Input	pr_Amon_reanalysis_MERRA2_198001-201912.nc			https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/NASA-GMAO/GEOS-5/MERRA2/mon/atmos/pr/pr_Amon_reanalysis_MERRA2_198001-201912.nc	(Gelaro et al., 2017)	tracking_id = "d204afb4-0503-47ee-9935-eb0d75dc31ac"
Figure 10.7	Figure 10.7 Code	Code						
Figure 10.7	ERA-Interim	Input	Daily data, Geopotential at 500hPa			https://apps.ecmwf.int/datasets/data/interim-full-daily/levtype=pl/	(Dee et al., 2011)	concatenated with ERA-40 (ERA-40: 1962–78, ERA-Interim: 1979–2011, see Schiemann et al., (2017)
Figure 10.7	ERA-40	Input	Daily data, Geopotential at 500hPa			https://apps.ecmwf.int/datasets/data/era40-daily/levtype=pl/	(Uppala et al., 2006)	concatenated with ERA-Interim (ERA-40: 1962–78, ERA-Interim: 1979–2011, see Schiemann et al. (2017)
Figure 10.8 (a)	GSMaP	Input				ftp://mtsat.cr.chiba-u.ac.jp/MTSAT-2/gridded_V2.0/quicklooks/201311/MTSAT2-145E-201311070357UTC-VIS.jpg	(Kubota et al., 2020)	(a) MTSAT-2 Visible Data (Haiyan match-up) (gridded), Nov 07, 2013 04:30 (UTC)
Figure 10.8 (b)	PAGASA	Input						(b) Guiuan radar, addapted from Takayabu et al. (2015)
Figure 10.8 (c)	Meso-ensemble forecast (60	Input	Member of WEPS (Weekly			https://apps.ecmwf.int/datasets/data/tigge/levtype=sfc/type=cf/	(Swinbank et al., 2016)	(c) meso-ensemble forecast (60

	km)		Ensemble Prediction System) operationally driven by JMA (Japan Meteorological Agency). Data is uploaded as a member of TIGGE (THORPEX Interactive Grand Global Ensemble).					km)
Figure 10.8 (d)	NHRCM (20 km)	Input						(d) NHRCM (20 km) model, addapted from Takayabu et al. (2015)
Figure 10.8 (e)	NHRCM (5 km)	Input						(e) NHRCM (5 km) model, Addapted from Takayabu et al. (2015)
Figure 10.8 (f)	WRF (1 km)	Input						(f) WRF (1 km) model, Addapted from Takayabu et al. (2015)
Figure 10.9	Figure 10.9 Code	Code	recipe_CoppolaAlps.			https://github.com/ESMValGroup/ESMValTool-		Requires working_corde

			yml			AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		x_2.2 ESMValCore branch
Figure 10.9	Figure 10.9 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory and CH10_additional_data/ECoppola_Alps directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.9	Figure 10.9 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.9 (a)	4 GCM mean (CMIP5) precipitation change	Input	GCM.nc			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10/CH10_additional_data/ECoppola_Alps/GCM.nc	GCM data from from Giorgi et al. (2016)	
Figure 10.9 (b)	6 RCM mean precipitation change	Input	RCM.nc			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10/CH10_additional_data/ECoppola_Alps/RCM.nc	RCM data from from Giorgi et al. (2016)	
Figure 10.10	Figure 10.10 Code	Code	recipe_Douglas_SES_DJF.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.10	Figure 10.10 Code	Code	diagnostic_IPCC_A			https://github.com/ESMValGroup/ESMValTool-		Requires working_corde

			R6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory and CH10_additional_data/Atlas_regions directory			AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		x_2.2 ESMValCore branch
Figure 10.10	Figure 10.10 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.10 (b)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.pre.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/pre/cru_ts4.04.1901.2019.pre.dat.nc.gz	(Harris et al., 2020)	Precipitation is conditioned on stn (nc file variable, number of stations contributing to each datum) being at least 1. Seasonal statistics requires 2 out of 3 seasons to be valid.
Figure 10.10 (b)	GPCC V2018 2.5°	Input	full_data_monthly_v2018_25.nc.gz	may be used without any restrictions provided that the source is	doi: 10.5676/DWD_GPCC/FD_M_V2018_250	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_25.nc.gz	(Schneider et al., 2018)	Precipitation is conditioned on numgauge (nc file variable, gauges per gridcell) being at least 1. Seasonal statistics

				acknowledged https://www.dwd.de/EN/service/copyright/copyright_node.html				requires 2 out of 3 seasons to be valid.
Figure 10.10	MPI-ESM metadata	Input				DM: Home/03 - Drafts/25 - FGD/Data Tables/Chapter 10/Model metadata files/Fig10-10_md_MPI-GE.csv		
CCB 10.2 Figure 1	reprint						Addapted from Maraun et al. (2017)	
Figure 10.11	Figure 10.11 Code	Code	recipe_Sahel.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.11	Figure 10.11 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory and CH10_additional_data/ATurner_Aerosols directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.11	Figure 10.11 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure	CRU TS	Input	cru_ts4.04.	Open		https://crudata.uea.ac.uk/cru/data/hrg/	(Harris et al., 2020)	Precipitation is

10.11 (a) (b) (e)	v4.04		1901.2019.pre.dat.nc	Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		cru_ts_4.04/cruts.2004151855.v4.04/pre/cru_ts4.04.1901.2019.pre.dat.nc.gz		conditioned on stn (nc file variable, number of stations contributing to each datum) being at least 1. Seasonal statistics requires 3 out of 4 seasons to be valid. Climate statistics requires 80% of data to be valid. Area statistics requires 80% of data to be valid. Trend calculations required at least 8 out of 10 years to be valid.
Figure 10.11 (e)	GPCC V2018 2.5°	Input	full_data_monthly_v2018_25.nc.gz	may be used without any restrictions provided that the source is acknowle	doi: 10.5676/DWD_GPCC/FD_M_V2018_250	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_25.nc.gz	(Schneider et al., 2018)	Precipitation is conditioned on numgauge (nc file variable, gauges per gridcell) being at least 1. Seasonal statistics requires 3 out

				dged https://www.dwd.de/EN/service/copyright/copyright_node.html				of 4 seasons to be valid. Climate statistics requires 80% of data to be valid. Area statistics requires 50% of data to be valid. Trend calculations required at least 7 out of 10 years to be valid.
Figure 10.11 (e)	CSIRO-Mk3-6-0	Input	pr_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[1..30]i1p1_185001-210012.nc			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.pr.html	(Jeffrey et al., 2013)	
Figure 10.11 (e)	d4PDF	Input	pr_1951-2014_run[001..100].grd	https://www.miroc-gcm.jp/~pub/d4PDF/img/d4PDF_Data_Policy_En_20180820.pdf		https://climate.mri-jma.go.jp/pub/d4pdf/HPB_1951-2014/pr/pr_1951-2014_run[001..100].grd	(Mizuta et al., 2017)	
Figure 10.11 (c)	HadGEM3-GC3.1 0.2x aerosol	Input				https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/	Model papers are: doi:10.1002/2017MS001115 and doi:10.1029/2018MS001370	

	scaling					diag_scripts/ar6_wgi_ch10/CH10_additional_data/ATurner_Aerosols/SMURPHS_r[1…5]_0p2_outJJAS.nc	The scaling experiment is described in Shonk et al. (2020)	
Figure 10.12	Figure 10.12 Code	Code	recipe_SESA.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.12	Figure 10.12 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle and colormaps/ directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.12	Figure 10.12 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.12 (b) (c) (d)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.pre.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/pre/cru_ts4.04.1901.2019.pre.dat.nc.gz	(Harris et al., 2020)	Precipitation is conditioned on stn (nc file variable, number of stations contributing to each datum) being at least 1. Seasonal statistics requires 2 out of 3 seasons to be valid. Area statistics requires 70% of data to be valid. Trend

								calculations required at least 8 out of 10 years to be valid.
Figure 10.12 (c) (d)	GPCC V2018 2.5°	Input	full_data_monthly_v2018_25.nc.gz	May be used without any restrictions provided that the source is acknowledged https://www.dwd.de/EN/service/copyright/copyright_node.html	doi: 10.5676/DWD_GPCC/FD_M_V2018_250	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_25.nc.gz	(Schneider et al., 2018)	Precipitation is conditioned on numgauge (nc file variable, gauges per gridcell) being at least 1. Seasonal statistics requires 2 out of 3 seasons to be valid. Area statistics requires 70% of data to be valid. Trend calculations required at least 8 out of 10 years to be valid.
Figure 10.12 (d)	CSIRO-Mk3-6-0	Input	pr_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[1..30]i1p1_185001-210012.nc			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.pr.html	(Jeffrey et al., 2013)	
Figure 10.12 (d)	d4PDF	Input	pr_1951-2014_run[001..100].grd	https://www.miroc-gcm.jp/~		https://climate.mri-jma.go.jp/pub/d4pdf/HPB_1951-2014/pr/pr_1951-2014_run[001..100].grd	(Mizuta et al., 2017)	

				pub/d4PDF/img/d4PDF_Data_Policy_En_20180820.pdf				
Figure 10.13	Figure 10.13 Code	Code	recipe_NAM.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.13	Figure 10.13 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , and colormaps/ directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.13	Figure 10.13 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.13 (a) (b) (c)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.pre.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/pre/cru_ts4.04.1901.2019.pre.dat.nc.gz	(Harris et al., 2020)	Precipitation is conditioned on stn (nc file variable, number of stations contributing to each datum) being at least 1. Annual statistics requires 10 out of 12 months to be valid. Trend

								calculations required at least 8 out of 10 years to be valid.
Figure 10.13 (a) (c)	GPCC V2018 1.0°	Input	full_data_monthly_v2018_10.nc.gz	may be used without any restrictions provided that the source is acknowledged https://www.dwd.de/EN/service/copyright/copyright_node.html	doi: 10.5676/DWD_GPCC/FD_M_V2018_100	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_10.nc.gz	(Schneider et al., 2018)	Precipitation is conditioned on numgauge (nc file variable, gauges per gridcell) being at least 1. Annual statistics requires 10 out of 12 months to be valid. Trend calculations required at least 6 out of 10 years to be valid.
Figure 10.13 (a) (c)	REGEN	Input	REGEN_AllStns_V1-2019_[1950 … 2016].nc and REGEN_AllStns_V1-2019_1950-2016_QualityMask.nc			http://dapds00.nci.org.au/thredds/fileServer/ks32/CLEX_Data/REGEN_AllStns/v1-2019/REGEN_AllStns_V1-2019_[1950 … 2016].nc	(Contractor et al., 2020)	Precipitation data is conditioned on the Quality Mask. Annual statistics requires 10 out of 12 months to be valid. Trend calculations required at least 8 out of 10 years to be

								valid.
Figure 10.13 (a) (c)	GPCP v2.3	Input	precip.mon.mean.nc			https://www.esrl.noaa.gov/psd/data/gridded/data.gpcp.html	(Huffman et al., 2009)	
Figure 10.13 (c)	CSIRO-Mk3-6-0	Input	pr_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[1..30]i1p1_185001-210012.nc			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.pr.html	(Jeffrey et al., 2013)	
Figure 10.13 (a), (c)	d4PDF	Input	pr_1951-2014_run[001..100].grd	https://www.miroc-gcm.jp/~pub/d4PDF/img/d4PDF_Data_Policy_En_20180820.pdf		https://climate.mri-jma.go.jp/pub/d4pdf/HPB_1951-2014/pr/pr_1951-2014_run[001..100].grd	(Mizuta et al., 2017)	
Figure 10.15 (b)	CSIRO-Mk3-6-0	Input	pr_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[1..30]i1p1_185001-210012.nc			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.pr.html	(Jeffrey et al., 2013)	
Figure 10.18	Figure 10.18 Code	Code	Cape-Town_case_study.py, ar6_wgi_ch10.mplstyle , colormaps/ directory and			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch

			CH10_additional_data/Cape_Town directory					
Figure 10.18 (c) (d)	CRU TS v4.03	Input	cru_ts4.03.1901.2018.pre.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://dap.ceda.ac.uk/badc/cru/data/cru_ts/cru_ts_4.03/data/pre/cru_ts4.03.1901.2018.pre.dat.nc.gz	(Harris et al., 2020)	
Figure 10.18 (c) (d)	GPCC V2018 0.5°	Input	full_data_monthly_v2018_25.nc.gz	may be used without any restrictions provided that the source is acknowledged https://www.dwd.de/EN/service/copyright/copyright_node.html	doi: 10.5676/DWD_GPCC/FD_M_V2018_050	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_05.nc.gz	(Schneider et al., 2018)	
Figure	Station data	Input	[NUWEB			Station data are, obtained directly		

10.18 (a) (b) (c) (d)			ERG, RUSTFONTEIN, TUSSENBEIDE, BOSKLOOF, ROBBEN_ISLAND, VRUGBAAR, BELLEVUE, RHEBOKSKRAAL, HOPEFIELD, DARLING_-_THE_TOWERS, TOUWSRIVIER, PIKETBERG-SAPD, ELANDSFONTEIN, MERTENHOF, REENEN, PUTS, VANRHYNSDORP, CALVINIA_BO-DOWNES, DE_HOOP, NUWERU			from SAWS, available upon request from climate@csag.uct.ac.za. Some station data that were used are available from: https://www.dws.gov.za/Hydrology/		

			S] stations					
Figure 10.18 (c) (d)	NCEP-NCAR	Input	slp.mon.mean.nc	CC BY-SA 4.0		ftp://ftp.cdc.noaa.gov/Datasets/ncep.reanalysis.derived/surface/slp.mon.mean.nc	(Kalnay et al., 1996)	
Figure 10.18 (c) (d)	ERA-20C	Input	Monthly mean sea level pressure from KNMI climate explorer			https://climexp.knmi.nl/selectfield_rea.cgi?id=someone@somewhere	(Poli et al., 2016)	
Figure 10.18 (c) (d)	20CR v3	Input	Monthly mean sea level pressure from KNMI climate explorer			https://climexp.knmi.nl/selectfield_rea.cgi?id=someone@somewhere	(Slivinski et al., 2019)	
Figure 10.18	8km CCAM metadata	Input	precipitation data				(Engelbrecht et al., 2011)	CSIR (the institution that generated data) does not provide access to these data.
Figure 10.19	Figure 10.19 Code	Code	recipe_IndianMonsoon.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.19	Figure 10.19 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch

			directory , CH10_additional_data/ATurner_SouthAsia directory and CH10_additional_data/Atlas_regions directory					
Figure 10.19	Figure 10.19 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.19 (b) (c) (d) (e)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.pre.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/pre/cru_ts4.04.1901.2019.pre.dat.nc.gz	(Harris et al., 2020)	Precipitation is conditioned on stn (nc file variable, number of stations contributing to each datum) being at least 1. Seasonal statistics requires 3 out of 4 seasons to be valid. Climate statistics requires 80% of data to be valid. Area statistics requires 80% of data to be valid. Trend

								calculations required at least 8 out of 10 years to be valid.
Figure 10.19 (d) (e)	GPCC V2018 2.5°	Input	full_data_monthly_v2018_25.nc.gz	may be used without any restrictions provided that the source is acknowledged https://www.dwd.de/EN/service/copyright/copyright_node.html	doi: 10.5676/DWD_GPCC/FD_M_V2018_250	https://opendata.dwd.de/climate_environment/GPCC/full_data_2018/full_data_monthly_v2018_25.nc.gz	(Schneider et al., 2018)	Precipitation is conditioned on numgauge (nc file variable, gauges per gridcell) being at least 1. Seasonal statistics requires 3 out of 4 seasons to be valid. Area statistics requires 80% of data to be valid. Trend calculations required at least 8 out of 10 years to be valid.
Figure 10.19 (d) (e)	REGEN	Input	REGEN_AllStns_V1-2019_[1950 … 2016].nc and REGEN_AllStns_V1-2019_1950-2016_QualityMask.nc			http://dapds00.nci.org.au/thredds/fileServer/ks32/CLEX_Data/REGEN_AllStns/v1-2019/REGEN_AllStns_V1-2019_[1950 … 2016].nc	(Contractor et al., 2020)	Precipitation data is conditioned on the Quality Mask. Seasonal statistics requires 3 out of 4 seasons to be valid. Area statistics requires 80%

								of data to be valid. Trend calculations required at least 8 out of 10 years to be valid.
Figure 10.19 (a) (d) (e)	APHRO-MA V1101 0.5°	Input	APHRO_MA_050deg_V1101.1951-2007.nc.gz.tar			http://aphrodite.st.hirosaki-u.ac.jp/download/	(Yatagai et al., 2012)	Variables precip ((d) and (e))and rstn (a). Seasonal statistics requires 3 out of 4 seasons to be valid. Area statistics requires 80% of data to be valid. Trend calculations required at least 8 out of 10 years to be valid.
Figure 10.19 (d)	IITM	Input	iitm-regionrf_all_india.csv			ftp://www.tropmet.res.in/pub/data/rain/iitm-regionrf.txt	(Parthasarathy et al., 1994)	ALL-INDIA RAINFALL (1871-2016), 30 SUBDIVISIONS AREA, column JJAS
Figure 10.19 (e)	CSIRO-Mk3-6-0	Input	pr_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.pr.html	(Jeffrey et al., 2013)	

			1..30]i1p1_185001-210012.nc					
Figure 10.19 (e)	d4PDF	Input	pr_1951-2014_run[001..100].grd	https://www.miroc-gcm.jp/~pub/d4PDF/img/d4PDF_Data_Policy_En_20180820.pdf		https://climate.mri-jma.go.jp/pub/d4pdf/HPB_1951-2014/pr/pr_1951-2014_run[001..100].grd	(Mizuta et al., 2017)	
Figure 10.20	Figure 10.20 Code	Code	recipe_Mediterranean.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.20	Figure 10.20 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory, CH10_additional_data/Mediterranean_station_info directory and CH10_additional_data/GvdSchrier_pdfs			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch

			directory					
Figure 10.20	Figure 10.20 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.20 (b)	E-OBS station information tg	Input	stations_info_tg_v21.0e.txt			https://knmi-ecad-assets-prd.s3.amazonaws.com/ensembles/data/stations_info_tg_v21.0e.txt	(Cornes et al., 2018)	
Figure 10.20 (b)	Donat et al. 2014 station information	Input	As indicated in Table 1 of Donat et al. (2014)				(Donat et al., 2014)	
Figure 10.20 (c) (d) (e) (f) (g)	Berkeley Earth	Input	Land_and_Ocean_LatLong1.nc			http://berkeleyearth.lbl.gov/auto/Global/Gridded/Land_and_Ocean_LatLong1.nc	(Rohde et al., 2013)	land_source_history = "13-Jan-2020 17:22:52", ocean_source_history = "07-Jan-2020 10:46:06"
Figure 10.20 (e) (f)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.tmp.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/tmp/cru_ts4.04.1901.2019.tmp.dat.nc.gz	(Harris et al., 2020)	
Figure 10.20 (e) (f)	HadCRUT5	Input	HadCRUT.5.0.0.0.anomalies.ensemble_mean.nc and	Open Government Licence http://ww		https://crudata.uea.ac.uk/cru/data/temperature/HadCRUT.5.0.0.0.anomalies.ensemble_mean.nc	(Morice et al., 2021)	Absolute values build by adding the anomaly https://crudata.

			absolute_v5.nc	w.nationalarchives.gov.uk/doc/open-government-licence/version/3/				uea.ac.uk/cru/data/temperature/absolute_v5.nc
Figure 10.20 (c)	NOAA Global Temp v5	Input	NOAAGlobalTemp_v5.0.0_gridded_s188001_e202102_c20210308T133310.nc			https://www.ncei.noaa.gov/data/noaa-global-surface-temperature/v5/access/gridded/NOAAGlobalTemp_v5.0.0_gridded_s188001_e202102_c20210308T133310.nc	(Zhang et al., 2019)	
Figure 10.20 (c)	CRUTEM4	Input	CRUTEM.4.6.0.0.anomalies.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/temperature/CRUTEM.4.6.0.0.anomalies.nc	(Jones et al., 2012)	
Figure 10.20 (c)	GISTEMP version 4	Input	gistemp250_GHCNv4.nc			https://data.giss.nasa.gov/pub/gistemp/gistemp250_GHCNv4.nc.gz	(Lenssen et al., 2019)	
Figure 10.20 (f)	CSIRO-Mk3-6-0	Input	tas_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.tas.html	(Jeffrey et al., 2013)	

			1..30]i1p1_185001-210012.nc					
Figure 10.20 (f)	d4PDF	Input	tas_1951-2014_run[001..100].grd	https://www.miroc-gcm.jp/~pub/d4PDF/img/d4PDF_Data_Policy_En_20180820.pdf		https://climate.mri-jma.go.jp/pub/d4pdf/HPB_1951-2014/tas/tas_1951-2014_run[001..100].grd	(Mizuta et al., 2017)	
Figure 10.21	Figure 10.21 Code	Code	recipe_Mediterranean.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.21	Figure 10.21 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle and colormaps/ directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Figure 10.21	Figure 10.21 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Figure 10.21 (b)	CSIRO-Mk3-6-0	Input	tas_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[1..30]i1p1_185001-210012.nc			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.tas.html	(Jeffrey et al., 2013)	
Box 10.3	Box 10.3	Code	recipe_Urb			https://github.com/ESMValGroup/ES		Requires

Figure 1	Figure 1 Code		anBox.yml			MValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		working_cordex_2.2 ESMValCore branch
Box 10.3 Figure 1	Box 10.3 Figure 1 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory and CH10_additional_data/Urban_Box_data directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
Box 10.3 Figure 1	Box 10.3 Figure 1 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
Box 10.3 Figure 1 (a), (c)	Urban Warming data	Input	cities.csv			https://github.com/ESMValGroup/ESMValTool-AR6/blob/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10/CH10_additional_data/Urban_Box_data/cities.csv	(Hamdi et al., 2020)	
Box 10.3 Figure 1 (a)	Urban Warming data	Input	countries.csv			https://github.com/ESMValGroup/ESMValTool-AR6/blob/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10/CH10_additional_data/Urban_Box_data/countries.csv	(Hamdi et al., 2020)	
Box 10.3 Figure 1 (b)	Tokyo and Choshi (Japan) temperature evolution	Input	Tokyo_Choshi_annual.csv			https://github.com/ESMValGroup/ESMValTool-AR6/blob/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10/CH10_additional_data/Urban_Box_data/Tokyo	Tokyo and Choshi station Japan Meteorological Agency (JMA)	

						_Choshi_annual.csv		
Box 10.3 Figure 1 (a), (c)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.tmp.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/tmp/cru_ts4.04.1901.2019.tmp.dat.nc.gz	(Harris et al., 2020)	
Box 10.3 Figure 1 (c)	Berkeley Earth	Input	Land_and_Ocean_LatLong1.nc			http://berkeleyearth.lbl.gov/auto/Global/Gridded/Land_and_Ocean_LatLong1.nc	(Rohde et al., 2013)	land_source_history = "13-Jan-2020 17:22:52", ocean_source_history = "07-Jan-2020 10:46:06"
Box 10.3 Figure 1 (c)	HadCRUT5	Input	HadCRUT.5.0.0.0.anomalies.ensemble_mean.nc and absolute_v5.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/temperature/HadCRUT.5.0.0.0.anomalies.ensemble_mean.nc	(Morice et al., 2021)	Absolute values build by adding the anomaly https://crudata.uea.ac.uk/cru/data/temperature/absolute_v5.nc
Box 10.3 Figure 1 (c)	Cowtan Way	Input	had4sst4_krig_v2_0_			https://www-users.york.ac.uk/~kdc3/papers/covera	(Cowtan and Way, 2014)	

			0.nc			ge2013/had4sst4_krig_v2_0_0.nc		
Box 10.3 Figure 1 (c)	GISTEMP version 4	Input	gistemp250_GHCNv4.nc			https://data.giss.nasa.gov/pub/gistemp/gistemp250_GHCNv4.nc.gz	(Lenssen et al., 2019)	
CCB 10.4 Figure 1	CCB 10.4 Figure 1 Code	Code	recipe_HKH.yml			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/recipes/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
CCB 10.4 Figure 1	CCB 10.4 Figure 1 Code	Code	diagnostic_IPCC_AR6_CH10.py , ar6_wgi_ch10.mplstyle , colormaps/ directory , CH10_additional_data/Atlas_regions directory and CH10_additional_data/HKH_shape directory			https://github.com/ESMValGroup/ESMValTool-AR6/tree/ar6_chapter_10/esmvaltool/diag_scripts/ar6_wgi_ch10		Requires working_cordex_2.2 ESMValCore branch
CCB 10.4 Figure 1	CCB 10.4 Figure 1 Code	Code				https://github.com/ESMValGroup/ESMValCore/tree/working_cordex_2.2		
CCB 10.4 Figure 1 (a) (b) (c)	Berkeley Earth	Input	Land_and_Ocean_LatLong1.nc			http://berkeleyearth.lbl.gov/auto/Global/Gridded/Land_and_Ocean_LatLong1.nc	(Rohde et al., 2013)	land_source_history = "13-Jan-2020 17:22:52", ocean_source_history = "07-Jan-2020

								10:46:06"
CCB 10.4 Figure 1 (a) (b) (c)	CRU TS v4.04	Input	cru_ts4.04.1901.2019.tmp.dat.nc	Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/		https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.04/cruts.2004151855.v4.04/tmp/cru_ts4.04.1901.2019.tmp.dat.nc.gz	(Harris et al., 2020)	
CCB 10.4 Figure 1 (a) (b) (c)	APHRO-MA V1808 0.5°	Input	APHRO_MA_TAVE_050deg_V1808.nc			http://aphrodite.st.hirosaki-u.ac.jp/download/	(Yasutomi et al., 2011)	
CCB 10.4 Figure 1 (a) (b) (c)	JRA-55	Input	tas_Amon_reanalysis_JRA-55_195801-201912.nc	CC BY-SA 4.0		https://esgf.nccs.nasa.gov/thredds/fileServer/CREATE-IP/reanalysis/JMA/JRA-55/JRA-55/mon/atmos/tas/tas_Amon_reanalysis_JRA-55_195801-201912.nc	(Kobayashi et al., 2015)	tracking_id = "9e276e16-79d7-46e5-a3da-39ecf1c2a871"
CCB 10.4 Figure 1 (d)	CSIRO-Mk3-6-0	Input	tas_Amon_CSIRO-Mk3-6-0_historical_rcp85_r[1..30]i1p1_185001-210012.nc			https://www.earthsystemgrid.org/dataset/ucar.cgd.ccsm4.CLIVAR_LE.csiro_mk36_lens_new.atm.proc.monthly_ave.tas.html	(Jeffrey et al., 2013)	
CCB 10.4 Figure 1 (d)	d4PDF	Input	tas_1951-2014_run[001..100].grd	https://www.miroc-gcm.jp/~pub/d4PDF/img/d4PDF_		https://climate.mri-jma.go.jp/pub/d4pdf/HPB_1951-2014/tas/tas_1951-2014_run[001..100].grd	(Mizuta et al., 2017)	

				Data_Policy_En_20180820.pdf				
FAQ 10.1, Figure 2	paper	Input					(Hamdi et al., 2020)	

[END TABLE 10.SM.11 HERE]

References

Contractor, S., Donat, M. G., Alexander, L. V., Ziese, M., Meyer-Christoffer, A., Schneider, U., et al. (2020). Rainfall Estimates on a Gridded Network (REGEN) – a global land-based gridded dataset of daily precipitation from 1950 to 2016. *Hydrol. Earth Syst. Sci.* 24, 919–943. doi:10.5194/hess-24-919-2020.

Cornes, R. C., van der Schrier, G., van den Besselaar, E. J. M., and Jones, P. D. (2018). An Ensemble Version of the E-OBS Temperature and Precipitation Data Sets. *J. Geophys. Res. Atmos.* 123, 9391–9409. doi:10.1029/2017JD028200.

Cowtan, K., and Way, R. G. (2014). Coverage bias in the HadCRUT4 temperature series and its impact on recent temperature trends. *Q. J. R. Meteorol. Soc.* 140, 1935–1944. doi:10.1002/qj.2297.

Cucchi, M., Weedon, G. P., Amici, A., Bellouin, N., Lange, S., Müller Schmied, H., et al. (2020). WFDE5: bias-adjusted ERA5 reanalysis data for impact studies. *Earth Syst. Sci. Data* 12, 2097–2120. doi:10.5194/essd-12-2097-2020.

Dee, D. P., Uppala, S. M., Simmons, A. J., Berrisford, P., Poli, P., Kobayashi, S., et al. (2011). The ERA-Interim reanalysis: Configuration and performance of the data assimilation system. *Q. J. R. Meteorol. Soc.* 137, 553–597. doi:10.1002/qj.828.

Donat, M. G., Peterson, T. C., Brunet, M., King, A. D., Almazroui, M., Kolli, R. K., et al. (2014). Changes in extreme temperature and precipitation in the Arab region: long-term trends and variability related to ENSO and NAO. *Int. J. Climatol.* 34, 581–592. doi:10.1002/joc.3707.

Engelbrecht, F. A., Landman, W. A., Engelbrecht, C. J., Landman, S., Bopape, M. M., Roux, B., et al. (2011). Multi-scale climate modelling over Southern Africa using a variable-resolution global model. *Water SA* 37. doi:10.4314/wsa.v37i5.2.

Gelaro, R., McCarty, W., Suárez, M. J., Todling, R., Molod, A., Takacs, L., et al. (2017). The Modern-Era Retrospective Analysis for Research and Applications, Version 2 (MERRA-2). *J. Clim.* 30, 5419–5454. doi:10.1175/JCLI-D-16-0758.1.

Giorgi, F., Torma, C., Coppola, E., Ban, N., Schär, C., and Somot, S. (2016). Enhanced summer convective rainfall at Alpine high elevations in response to climate warming. *Nat. Geosci.* 9, 584–589. doi:10.1038/ngeo2761.

Hamdi, R., Kusaka, H., Doan, Q.-V., Cai, P., He, H., Luo, G., et al. (2020). The State-of-the-Art of Urban Climate Change Modeling and Observations. *Earth Syst. Environ.* 4, 631–646. doi:10.1007/s41748-020-00193-3.

Harris, I., Osborn, T. J., Jones, P., and Lister, D. (2020). Version 4 of the CRU TS monthly high-resolution gridded multivariate climate dataset. *Sci. Data* 7, 109. doi:10.1038/s41597-020-0453-3.

Hersbach, H., Bell, B., Berrisford, P., Hirahara, S., Horányi, A., Muñoz-Sabater, J., et al. (2020). The ERA5 global reanalysis. *Q. J. R. Meteorol. Soc.* 146, 1999–2049. doi:10.1002/qj.3803.

Huffman, G. J., Adler, R. F., Bolvin, D. T., and Gu, G. (2009). Improving the global precipitation record: GPCP Version 2.1. *Geophys. Res. Lett.* 36, L17808. doi:10.1029/2009GL040000.

Jeffrey, S., Rotstayn, L., Collier, M., Dravitzki, S., Hamalainen, C., Moeseneder, C., et al. (2013). Australia's CMIP5 submission using the CSIRO-Mk3.6 model. *Aust. Meteorol. Oceanogr. J.* 63, 1–14. doi:10.22499/2.6301.001.

Jones, P. D., Lister, D. H., Osborn, T. J., Harpham, C., Salmon, M., and Morice, C. P. (2012). Hemispheric and large-scale land-surface air temperature variations: An extensive revision and an update to 2010. *J. Geophys. Res. Atmos.* 117. doi:10.1029/2011JD017139.

Jones, P. D., and Moberg, A. (2003). Hemispheric and Large-Scale Surface Air Temperature Variations: An Extensive Revision and an Update to 2001. *J. Clim.* 16, 206–223. doi:10.1175/1520-0442(2003)016<0206:HALSSA>2.0.CO;2.

Kalnay, E., Kanamitsu, M., Kistler, R., Collins, W., Deaven, D., Gandin, L., et al. (1996). The NCEP/NCAR 40-Year Reanalysis Project. *Bull. Am. Meteorol. Soc.* 77, 437–471. doi:10.1175/1520-0477(1996)077<0437:TNYRP>2.0.CO;2.

Kobayashi, S., Ota, Y., Harada, Y., Ebita, A., Moriya, M., Onoda, H., et al. (2015). The JRA-55 Reanalysis: General Specifications and Basic Characteristics. *J. Meteorol. Soc. Japan. Ser. II* 93, 5–48. doi:10.2151/jmsj.2015-001.

Kubota, T., Aonashi, K., Ushio, T., Shige, S., Takayabu, Y. N., Kachi, M., et al. (2020). "Global Satellite Mapping of Precipitation (GSMaP) Products in the GPM Era," in, eds. V. Levizzani, C. Kidd, D. B. Kirschbaum, C. D. Kummerow, K. Nakamura, and F. J. Turk (Cham: Springer International Publishing), 355–373. doi:10.1007/978-3-030-24568-9_20.

Laloyaux, P., de Boisseson, E., Balmaseda, M., Bidlot, J.-R., Broennimann, S., Buizza, R., et al. (2018). CERA-20C: A Coupled Reanalysis of the Twentieth Century. *J. Adv. Model. Earth Syst.* 10, 1172–1195. doi:10.1029/2018MS001273.

Lenssen, N. J. L., Schmidt, G. A., Hansen, J. E., Menne, M. J., Persin, A., Ruedy, R., et al. (2019). Improvements in the GISTEMP Uncertainty Model. *J. Geophys. Res. Atmos.* doi:10.1029/2018JD029522.

Maraun, D., Shepherd, T. G., Widmann, M., Zappa, G., Walton, D., Gutiérrez, J. M., et al. (2017). Towards process-informed bias correction of climate change simulations. *Nat. Clim. Chang.* 7, 664–773. doi:10.1038/nclimate3418.

Mizuta, R., Murata, A., Ishii, M., Shiogama, H., Hibino, K., Mori, N., et al. (2017). Over 5,000 Years of Ensemble Future Climate Simulations by 60-km Global and 20-km Regional Atmospheric Models. *Bull. Am. Meteorol. Soc.* 98, 1383–1398. doi:10.1175/BAMS-D-16-0099.1.

Morice, C. P., Kennedy, J. J., Rayner, N. A., and Jones, P. D. (2012). Quantifying uncertainties in global and regional temperature change using an ensemble of observational estimates: The HadCRUT4 data set. *J. Geophys. Res. Atmos.* 117. doi:10.1029/2011JD017187.

Morice, C. P., Kennedy, J. J., Rayner, N. A., Winn, J. P., Hogan, E., Killick, R. E., et al. (2021). An Updated Assessment of Near-Surface Temperature Change From 1850: The HadCRUT5 Data Set. *J. Geophys. Res. Atmos.* 126. doi:10.1029/2019JD032361.

ONOGI, K., TSUTSUI, J., KOIDE, H., SAKAMOTO, M., KOBAYASHI, S., HATSUSHIKA, H., et al. (2007). The JRA-25 Reanalysis. *J. Meteorol. Soc. Japan. Ser. II* 85, 369–432. doi:10.2151/jmsj.85.369.

Parthasarathy, B., Munot, A. A., and Kothawale, D. R. (1994). All-India monthly and seasonal rainfall series: 1871–1993. *Theor. Appl. Climatol.* 49, 217–224. doi:10.1007/BF00867461.

Poli, P., Hersbach, H., Dee, D. P., Berrisford, P., Simmons, A. J., Vitart, F., et al. (2016). ERA-20C: An Atmospheric Reanalysis of the Twentieth Century. *J. Clim.* 29, 4083–4097. doi:10.1175/JCLI-D-15-0556.1.

Rienecker, M. M., Suarez, M. J., Gelaro, R., Todling, R., Bacmeister, J., Liu, E., et al. (2011). MERRA: NASA's Modern-Era Retrospective Analysis for Research and Applications. *J. Clim.* 24, 3624–3648. doi:10.1175/JCLI-D-11-00015.1.

Rohde, R., Muller, R., Jacobsen, R., Muller, E., Perlmutter, S., Rosenfeld, A., et al. (2013). A New Estimate of the Average Earth Surface Land Temperature Spanning 1753 to 2011. *Geoinformatics Geostatistics An Overv.* 1. doi:10.4172/2327-4581.1000101.

Saha, S., Moorthi, S., Pan, H.-L., Wu, X., Wang, J., Nadiga, S., et al. (2010). The NCEP Climate Forecast System Reanalysis. *Bull. Am. Meteorol. Soc.* 91, 1015–1058. doi:10.1175/2010BAMS3001.1.

Schiemann, R., Demory, M.-E., Shaffrey, L. C., Strachan, J., Vidale, P. L., Mizielinski, M. S., et al. (2017). The Resolution Sensitivity of Northern Hemisphere Blocking in Four 25-km Atmospheric Global Circulation Models. *J. Clim.* 30, 337–358. doi:10.1175/JCLI-D-16-0100.1.

Schneider, U., Becker, A., Finger, P., Meyer-Christoffer, A., and Ziese, M. (2018). GPCC Full Data Monthly Product Version 2018 at 1.0°: Monthly Land-Surface Precipitation from Rain-Gauges built on GTS-based and Historical Data. doi:10.5676/DWD_GPCC/FD_M_V2018_100.

Shonk, J. K. P., Turner, A. G., Chevuturi, A., Wilcox, L. J., Dittus, A. J., and Hawkins, E. (2020). Uncertainty in aerosol radiative forcing impacts the simulated global monsoon in the 20th century. *Atmos. Chem. Phys.* 20, 14903–14915. doi:10.5194/acp-20-14903-2020.

Slivinski, L. C., Compo, G. P., Whitaker, J. S., Sardeshmukh, P. D., Giese, B. S., McColl, C., et al. (2019). Towards a more reliable historical reanalysis: Improvements for version 3 of the Twentieth Century Reanalysis system. *Q. J. R. Meteorol. Soc.* 145, 2876–2908. doi:10.1002/qj.3598.

Swinbank, R., Kyouda, M., Buchanan, P., Froude, L., Hamill, T. M., Hewson, T. D., et al. (2016). The TIGGE Project and Its Achievements. *Bull. Am. Meteorol. Soc.* 97, 49–67. doi:10.1175/BAMS-D-13-00191.1.

Takayabu, I., Hibino, K., Sasaki, H., Shiogama, H., Mori, N., Shibutani, Y., et al. (2015). Climate change effects on the worst-case storm surge: a case study of Typhoon Haiyan. *Environ. Res. Lett.* 10, 064011. doi:10.1088/1748-9326/10/6/064011.

Uppala, S. M., KÅllberg, P. W., Simmons, A. J., Andrae, U., Bechtold, V. D. C., Fiorino, M., et al. (2006). The ERA-40 re-analysis. *Q. J. R. Meteorol. Soc.* 131, 2961–3012. doi:10.1256/qj.04.176.

Yasutomi, N., Hamada, A., and Yatagai, A. (2011). Development of a Long-term Daily Gridded Temperature Dataset and Its Application to Rain/Snow Discrimination of Daily Precipitation. Available at: http://hydro.iis.u-tokyo.ac.jp/GAME-T.

Yatagai, A., Kamiguchi, K., Arakawa, O., Hamada, A., Yasutomi, N., and Kitoh, A. (2012). APHRODITE: Constructing a Long-Term Daily Gridded Precipitation Dataset for Asia Based on a Dense Network of Rain Gauges. *Bull. Am. Meteorol. Soc.* 93, 1401–1415. doi:10.1175/BAMS-D-11-00122.1.

Zhang, H.-M., Lawrimore, J., Huang, B., Menne, M., Yin, X., Sánchez-Lugo, A., et al. (2019). Updated Temperature Data Give a Sharper View of Climate Trends. *Eos (Washington. DC).* 100. doi:10.1029/2019EO128229.