UNDP Climate Change Country Profiles

Sierra Leone

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General Climate

Sierra Leone is located in western Africa on the Atlantic Coast. At latitudes of 7 to 10˚N, Sierra Leone has a tropical climate which is strongly influenced by the West African Monsoon. Sierra Leone has one wet season between May and October, peaking between July and September. This rainfall season is largely controlled by the movement of the tropical rain belt (also known as the Inter-Tropical Conversion Zone, ITCZ), which oscillates between the northern and southern tropics over the course of a year, affecting Sierra Leone when it is in its northern position. When the ITCZ is in this northern position, the dominant wind direction in regions south of the ITCZ is south-westerly, blowing moist air from the Atlantic onto the continent. This pattern is referred to as the West African Monsoon, and causes exceptionally high rainfalls on the coastline of western Africa in the wet season. Monthly rainfall in coastal Sierra Leone can exceed 1000mm, but decrease rapidly inland to around 300mm per month in the far west. In the winter, the dominant wind direction is reversed, the dry and dusty 'Harmattan' winds blow from the Sahara desert.

The seasonal rainfall in this region varies considerably on inter-annual and inter-decadal timescales, due in part to variations in the movements and intensity of the ITCZ, and also to variations in timing and intensity of the West African Monsoon. The most well documented cause of these variations is the El Niño Southern Oscillation (ENSO). El Niño events are associated with drier conditions in West Africa.

Temperatures in Sierra Leone are lowest in the wettest season, JAS, at 22-25˚C, and around 25-27˚C during the rest of the year.

Recent Climate Trends

Temperature

- Mean annual temperature has increased by 0.8˚C since 1960, an average rate of 0.18˚C per decade.

- There are insufficient daily data available to determine trends in daily temperature extremes for all seasons. Available data do, however, indicate significantly increasing trends in the frequency of 'hot'[1] nights.
    - The average number of 'hot' nights per year increased by 38 (an additional 10.3% of nights[2]) between 1960 and 2003.

Precipitation

- Mean annual rainfall over Sierra Leone has decreased since 1960, but it is difficult to determine whether this is part of a long term trend because of the variable nature of rainfall in this region. The rainfall record is punctuated by wetter and drier periods; the 60s and late 70s were particularly wet, whilst the early 70s and 80s were very dry. Rainfalls in 2005 and 2006 have been very low.
- There are insufficient daily rainfall observations available from which to determine changes in extremes indices of daily rainfall.

GCM Projections of Future Climate

Temperature

- The mean annual temperature is projected to increase by 1.0 to 2.6˚C by the 2060s, and 1.5 to 4.6˚C by the 2090s. The range of projections by the 2090s under any one emissions scenario is 1.0- 2.0˚C.
- The projected rate of warming is most rapid in the northern inland regions of western Africa than the coastal regions.

- All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in current climate.
    - Annually, projections indicate that 'hot' days will occur on 26-63% of days by the 2060s, and 37-84% of days by the 2090s. Days considered 'hot' by current climate standards for their season are may increase most rapidly in JAS, but the range between model projections is large, occurring on 50-99% of days of the season by the 2090s.
    - Nights that are considered 'hot' for the annual climate of 1970-99 are projected to occur on 41-79% of nights by the 2060s and 54-92% of nights by the 2090s. Nights

[1] 'Hot' day or 'hot' night is defined by the temperature exceeded on 10% of days or nights in current climate of that region and season.
[2] The increase in frequency over the 43-year period between 1960 and 2003 is estimated based on the decadal trend quoted in the summary table.

that are considered hot for each season by 1970-99 standards are projected to increase most rapidly in JAS, occurring on 72-100% of nights in every season by the 2090s.

- Projected increases in hot days and nights are more rapid in the coastal regions of West Africa than inland.

- All projections indicate decreases in the frequency of days and nights that are considered 'cold'[3] in current climate. Cold days and nights occur on less than 2% of days by the 2090s and do not occur at all by the 2090s in any projections under the highest emissions scenario (A2).

Precipitation

- Projections of mean annual rainfall averaged over the country from different models in the ensemble project a wide range of changes in precipitation for Sierra Leone, but tend towards over all increases, particularly in JAS and OND. Rainfall in JAS is projected to change by -27 to +29% by the 2090s, and -19 to +33% in OND.

- The proportion of total annual rainfall that falls in heavy[4] events tends towards increases in the ensemble projections. Seasonally, this varies between tendencies to decrease in JFM and to increases in JAS and OND.
- 1- and 5-day rainfall maxima in projections all tend towards increases, particularly in JAS. The range of changes in projections from the model ensemble covers both increases and decreases in all seasons.

[3] 'Cold' days or 'cold' nights are defined as the temperature below which 10% of days or nights are recorded in current climate of that region or season.

[4] A 'Heavy' event is defined as a daily rainfall total which exceeds the threshold that is exceeded on 5% of rainy days in current the climate of that region and season.

Other Regional Climate Change Information

- Model simulations of precipitation changes for the Sahelian and Guinea coast regions of Africa are strongly divergent and most models fail to reproduce realistic inter-annual and inter-decadal rainfall variability in the Sahel in 20th century simulations. Our understanding of the processes causing tropical rainfall is insufficient to allow a prediction of the direction of change with any certainty. The IPCC identify this as an area requiring further research to understand the variety of model responses in this region (Christensen *et al*., 2007).
- Model simulations show wide disagreements in projected changes in the amplitude of future El Niño events. West African climate can be strongly influenced by ENSO, thus contributing to uncertainty in climate projections for this region.
- The coastal regions of Sierra Leone may be vulnerable to sea-level rise. Sea-level in this region is projected by climate models to rise by the following levels[5] by the 2090s, relative to 1980-1999 sea-level:
    - 0.13 to 0.43m under SRES B1
    - 0.16 to 0.53m under SRES A1B
    - 0.18 to 0.56m under SRES A2

- For further information on climate projections for Africa, see Christensen *et al*. (2007) IPCC Working Group I Report: '*The Physical Science Basis'*, Chapter 11 *(Regional Climate projections*): Section 11.2 *(Africa*).

[5] Taken from the IPCC Working group I (*The Physical Science Basis*): Chapter 10 (Global Climate Projections) (Meehl *et al*., 2007). Regional sea-level projections are estimated by applying regional adjustments (Fig 10.32, p813) to projected global mean sea-level rise from 14 AR4 models.

Data Summary

	Observed Mean 1970-99	Observed Trend 1960-2006		Projected changes by the 2030s			Projected changes by the 2060s			Projected changes by the 2090s		
				Min	Median	Max	Min	Median	Max	Min	Median	Max
						Temperature						
	(˚C)	(change in ˚C per decade)			Change in ˚C			Change in ˚C			Change in ˚C	
			A2	0.9	**1.1**	1.4	1.8	**2.2**	2.6	2.9	**3.6**	4.6
Annual	25.7	0.18*	*A1B*	0.8	**1.2**	1.5	1.6	**2.2**	2.6	2.2	**2.9**	4.1
			B1	0.6	**1.0**	1.2	1.0	**1.6**	1.9	1.5	**1.9**	2.5
			A2	0.8	**1.1**	1.5	1.8	**2.3**	2.7	2.8	**3.7**	5.0
JFM	26.7	0.19*	*A1B*	0.8	**1.2**	1.6	1.7	**2.3**	2.7	2.1	**3.0**	4.2
			B1	0.5	**1.0**	1.2	1.1	**1.7**	2.1	1.4	**1.9**	2.6
			A2	0.7	**1.2**	1.5	1.6	**2.3**	2.9	2.7	**3.8**	4.9
AMJ	26.4	0.16*	*A1B*	0.6	**1.3**	1.6	1.7	**2.2**	2.9	1.7	**3.1**	4.8
			B1	0.7	**1.0**	1.4	1.1	**1.6**	2.4	1.4	**2.0**	3.1
			A2	0.9	**1.0**	1.3	1.7	**2.1**	2.5	2.9	**3.4**	4.3
JAS	24.3	0.16*	*A1B*	0.7	**1.1**	1.5	1.5	**2.0**	2.6	2.3	**2.7**	3.9
			B1	0.4	**0.9**	1.2	0.7	**1.4**	2.0	1.3	**1.7**	2.3
			A2	0.9	**1.2**	1.4	1.8	**2.3**	2.6	3.0	**3.7**	4.7
OND	25.2	0.20*	*A1B*	0.9	**1.2**	1.5	1.5	**2.2**	2.5	2.3	**2.8**	4.0
			B1	0.5	**1.0**	1.2	1.0	**1.6**	1.9	1.4	**1.9**	2.4
						Precipitation						
	(mm per month)	(change in mm per decade)			Change in mm per month			Change in mm per month			Change in mm per month	
			A2	-15	**0**	21	-21	**4**	28	-31	**3**	31
Annual	197.8	-6.9*	*A1B*	-12	**0**	23	-20	**0**	26	-29	**5**	18
			B1	-10	**4**	21	-15	**4**	30	-21	**3**	31
			A2	-15	**-1**	13	-8	**-1**	19	-13	**-4**	21
JFM	21.5	-0.9	*A1B*	-7	**-2**	8	-13	**-2**	23	-12	**-4**	11
			B1	-8	**0**	20	-9	**-1**	13	-9	**0**	19
			A2	-28	**-1**	37	-37	**-3**	42	-62	**-3**	70
AMJ	201.5	-12.0*	*A1B*	-31	**-5**	31	-38	**2**	57	-52	**-6**	43
			B1	-22	**0**	40	-44	**1**	57	-38	**0**	48
			A2	-23	**5**	28	-35	**14**	53	-63	**7**	64
JAS	435.0	-9.6*	*A1B*	-25	**5**	43	-40	**11**	48	-67	**26**	55
			B1	-21	**8**	55	-33	**10**	55	-40	**17**	57
			A2	-16	**-2**	21	-14	**0**	26	-19	**4**	27
OND	132.5	-5.4*	*A1B*	-9	**-1**	10	-21	**1**	24	-13	**3**	25
			B1	-9	**0**	7	-8	**0**	19	-8	**0**	18
						Precipitation (%)						
	(mm per month)	(change in % per decade)			% Change			% Change			% Change	
			A2	-12	**0**	14	-17	**3**	19	-30	**1**	24
Annual	197.8	-3.5*	*A1B*	-10	**0**	15	-17	**0**	17	-29	**2**	14
			B1	-10	**3**	14	-13	**2**	20	-18	**2**	29
			A2	-26	**-8**	49	-40	**-8**	46	-40	**-12**	46
JFM	21.5	-4.2	*A1B*	-22	**-8**	18	-37	**-8**	50	-37	**-13**	24
			B1	-23	**-2**	44	-31	**-8**	29	-28	**-3**	61
			A2	-34	**-1**	34	-44	**-1**	62	-56	**-5**	77
AMJ	201.5	-6.0*	*A1B*	-28	**-2**	28	-45	**1**	37	-62	**-6**	37
			B1	-24	**0**	35	-34	**2**	47	-45	**0**	97
			A2	-9	**2**	9	-15	**5**	18	-27	**3**	29
JAS	435.0	-2.2*	*A1B*	-10	**1**	13	-17	**5**	16	-28	**9**	19
			B1	-9	**3**	13	-14	**4**	14	-17	**7**	20
			A2	-12	**-2**	21	-21	**1**	22	-18	**5**	33
OND	132.5	-4.1*	*A1B*	-14	**-1**	9	-15	**1**	17	-19	**4**	18
			B1	-14	**0**	8	-12	**0**	15	-12	**1**	21

	Observed Mean 1970-99	Observed Trend 1960-2006		Projected changes by the 2030s			Projected changes by the 2060s			Projected changes by the 2090s		
				Min	Median	Max	Min	Median	Max	Min	Median	Max
	% Frequency	Change in frequency per decade					Future % frequency			Future % frequency		
Frequency of Hot Days (TX90p)												
			A2	****	****	****	38	**42**	63	56	**66**	84
Annual	****	****	*A1B*	****	****	****	36	**44**	63	48	**56**	81
			B1	****	****	****	26	**34**	54	37	**41**	65
			A2	****	****	****	52	**64**	74	70	**83**	94
JFM	8.0	(-0.84)	*A1B*	****	****	****	57	**61**	72	66	**79**	92
(DJF)			*B1*	****	****	****	35	**48**	63	50	**63**	77
			A2	****	****	****	45	**55**	81	68	**73**	96
AMJ	****	****	*A1B*	****	****	****	41	**53**	83	63	**68**	95
(MAM)			*B1*	****	****	****	32	**43**	73	46	**49**	85
			A2	****	****	****	44	**71**	91	75	**87**	99
JAS	****	****	*A1B*	****	****	****	56	**70**	92	69	**83**	98
(JJA)			*B1*	****	****	****	33	**55**	84	50	**63**	91
			A2	****	****	****	47	**63**	91	63	**85**	99
OND	****	****	*A1B*	****	****	****	46	**61**	91	57	**76**	98
(SON)			*B1*	****	****	****	39	**47**	81	45	**58**	91
Frequency of Hot Nights (TN90p)												
			A2	****	****	****	45	**63**	79	79	**85**	92
Annual	11.9	2.44*	*A1B*	****	****	****	41	**66**	79	73	**82**	88
			B1	****	****	****	41	**49**	71	54	**60**	80
			A2	****	****	****	51	**69**	83	75	**79**	92
JFM	****	****	*A1B*	****	****	****	56	**68**	78	70	**75**	89
(DJF)			*B1*	****	****	****	44	**54**	72	52	**67**	83
			A2	****	****	****	66	**77**	92	93	**98**	98
AMJ	****	****	*A1B*	****	****	****	61	**78**	90	88	**92**	96
(MAM)			*B1*	****	****	****	42	**60**	81	60	**73**	89
			A2	****	****	****	74	**91**	98	93	**99**	100
JAS	****	****	*A1B*	****	****	****	76	**91**	98	88	**98**	99
(JJA)			*B1*	****	****	****	54	**70**	84	72	**89**	94
			A2	****	****	****	58	**70**	88	79	**87**	96
OND	****	****	*A1B*	****	****	****	63	**71**	87	71	**84**	94
(SON)			*B1*	****	****	****	49	**59**	82	55	**71**	88
Frequency of Cold Days (TX10p)												
			A2	****	****	****	0	**1**	2	0	**0**	0
Annual	****	****	*A1B*	****	****	****	0	**1**	2	0	**0**	1
			B1	****	****	****	0	**1**	3	0	**1**	2
			A2	****	****	****	0	**0**	0	0	**0**	0
JFM	****	****	*A1B*	****	****	****	0	**0**	1	0	**0**	1
(DJF)			*B1*	****	****	****	0	**1**	3	0	**0**	1
			A2	****	****	****	0	**0**	2	0	**0**	0
AMJ	****	****	*A1B*	****	****	****	0	**1**	1	0	**0**	1
(MAM)			*B1*	****	****	****	0	**1**	2	0	**1**	2
			A2	****	****	****	0	**0**	1	0	**0**	0
JAS	****	****	*A1B*	****	****	****	0	**0**	1	0	**0**	0
(JJA)			*B1*	****	****	****	0	**0**	3	0	**0**	2
			A2	****	****	****	0	**0**	1	0	**0**	0
OND	****	****	*A1B*	****	****	****	0	**1**	1	0	**0**	1
(SON)			*B1*	****	****	****	0	**1**	3	0	**1**	1
Frequency of Cold Nights (TN10p)												
			A2	****	****	****	0	**0**	2	0	**0**	0
Annual	****	****	*A1B*	****	****	****	0	**1**	2	0	**0**	1
			B1	****	****	****	0	**1**	3	0	**0**	2
			A2	****	****	****	0	**0**	2	0	**0**	0
JFM	****	****	*A1B*	****	****	****	0	**0**	2	0	**0**	1
(DJF)			*B1*	****	****	****	0	**1**	3	0	**0**	2
			A2	****	****	****	0	**0**	1	0	**0**	0
AMJ	****	****	*A1B*	****	****	****	0	**0**	0	0	**0**	0
(MAM)			*B1*	****	****	****	0	**0**	1	0	**0**	1
			A2	****	****	****	0	**0**	1	0	**0**	0
JAS	****	****	*A1B*	****	****	****	0	**0**	2	0	**0**	1
(JJA)			*B1*	****	****	****	0	**0**	1	0	**0**	2
			A2	****	****	****	0	**0**	2	0	**0**	0
OND	11.0	(0.69)	*A1B*	****	****	****	0	**0**	1	0	**0**	1
(SON)			*B1*	****	****	****	0	**1**	2	0	**0**	2

	Observed Mean 1970-99	Observed Trend 1960-2006		Projected changes by the 2030s			Projected changes by the 2060s			Projected changes by the 2090s		
				Min	*Median*	*Max*	*Min*	*Median*	*Max*	*Min*	*Median*	*Max*
% total rainfall falling in Heavy Events (R95pct)												
	%	*Change in % per decade*					*Change in %*			*Change in %*		
			A2	****	****	****	-9	**3**	8	-11	**4**	11
Annual	****	****	*A1B*	****	****	****	-7	**4**	8	-13	**5**	12
			B1	****	****	****	-6	**3**	8	-10	**4**	11
			A2	****	****	****	-15	**-4**	6	-24	**-6**	9
JFM	****	****	*A1B*	****	****	****	-14	**-3**	13	-21	**-4**	9
			B1	****	****	****	-13	**-2**	7	-13	**-2**	15
			A2	****	****	****	-13	**1**	12	-19	**2**	14
AMJ	****	****	*A1B*	****	****	****	-15	**2**	13	-22	**0**	10
			B1	****	****	****	-12	**3**	6	-16	**2**	14
			A2	****	****	****	-7	**4**	8	-8	**6**	16
JAS	****	****	*A1B*	****	****	****	-8	**3**	12	-9	**6**	19
			B1	****	****	****	-6	**4**	12	-7	**4**	17
			A2	****	****	****	-4	**0**	5	-8	**2**	10
OND	****	****	*A1B*	****	****	****	-4	**1**	6	-5	**3**	10
			B1	****	****	****	-4	**1**	8	-4	**1**	9
Maximum 1-day rainfall (RX1day)												
	mm	*Change in mm per decade*					*Change in mm*			*Change in mm*		
			A2	****	****	****	-6	**4**	33	-7	**10**	72
Annual	****	****	*A1B*	****	****	****	-7	**3**	49	-9	**4**	73
			B1	****	****	****	-9	**2**	21	-8	**3**	54
			A2	****	****	****	-1	**0**	0	-2	**0**	1
JFM	****	****	*A1B*	****	****	****	-1	**0**	3	-2	**0**	2
			B1	****	****	****	-1	**0**	1	-1	**0**	1
			A2	****	****	****	-6	**1**	14	-5	**0**	51
AMJ	****	****	*A1B*	****	****	****	-5	**0**	37	-8	**0**	33
			B1	****	****	****	-4	**0**	8	-6	**0**	30
			A2	****	****	****	-5	**4**	37	-7	**8**	57
JAS	****	****	*A1B*	****	****	****	-8	**4**	38	-9	**8**	68
			B1	****	****	****	-7	**1**	23	-8	**2**	43
			A2	****	****	****	-5	**0**	6	-3	**1**	14
OND	****	****	*A1B*	****	****	****	-4	**0**	6	-2	**1**	13
			B1	****	****	****	-3	**0**	9	-4	**1**	11
Maximum 5-day Rainfall (RX5day)												
	mm	*Change in mm per decade*					*Change in mm*			*Change in mm*		
			A2	****	****	****	-14	**8**	36	-17	**17**	72
Annual	****	****	*A1B*	****	****	****	-15	**9**	64	-21	**10**	85
			B1	****	****	****	-19	**5**	31	-17	**7**	58
			A2	****	****	****	-6	**-1**	1	-5	**-1**	8
JFM	****	****	*A1B*	****	****	****	-2	**-1**	12	-6	**-1**	6
			B1	****	****	****	-4	**0**	7	-6	**0**	6
			A2	****	****	****	-15	**0**	19	-16	**-1**	67
AMJ	****	****	*A1B*	****	****	****	-18	**0**	54	-22	**-1**	43
			B1	****	****	****	-11	**0**	8	-15	**0**	39
			A2	****	****	****	-13	**8**	36	-17	**13**	48
JAS	****	****	*A1B*	****	****	****	-16	**8**	44	-22	**12**	86
			B1	****	****	****	-17	**6**	28	-17	**7**	44
			A2	****	****	****	-10	**0**	9	-5	**3**	24
OND	****	****	*A1B*	****	****	****	-5	**0**	8	-5	**4**	16
			B1	****	****	****	-6	**1**	16	-3	**0**	15

* indicates trend is statistically significant at 95% confidence

**** indicates data are not available

Bracketed trend values for extremes indices indicate values for the closest seasons that data is available. See documentation.

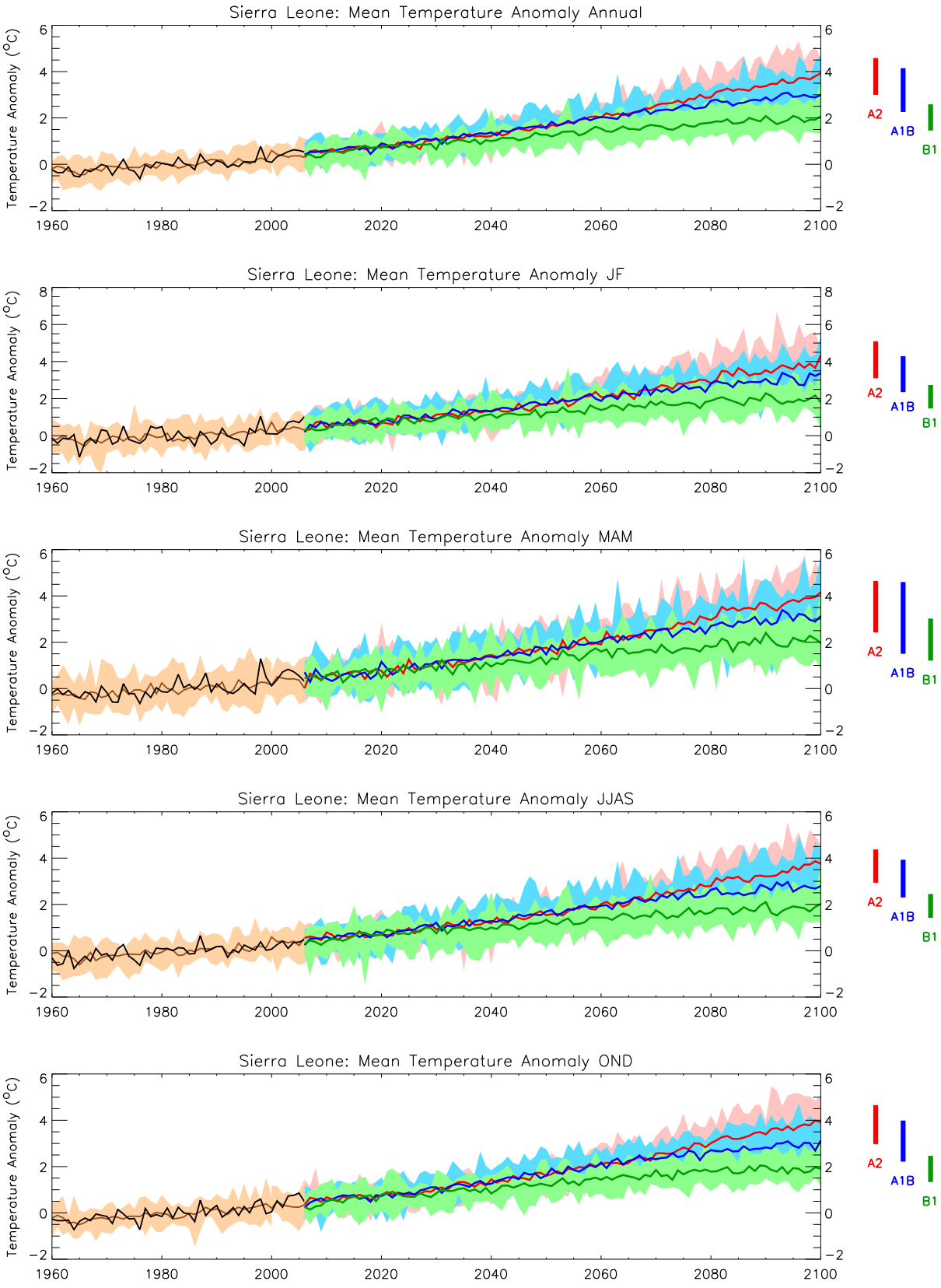

Figure 1: Trends in annual and seasonal mean temperature for the recent past and projected future. All values shown are anomalies, relative to the 1970-1999 mean climate. Black curves show the mean of observed data from 1960 to 2006, Brown curves show the median (solid line) and range (shading) of model simulations of recent climate across an ensemble of 15 models. Coloured lines from 2006 onwards show the median (solid line) and range (shading) of the ensemble projections of climate under three emissions scenarios. Coloured bars on the right-hand side of the projections summarise the range of mean 2090-2100 climates simulated by the 15 models for each emissions scenario.

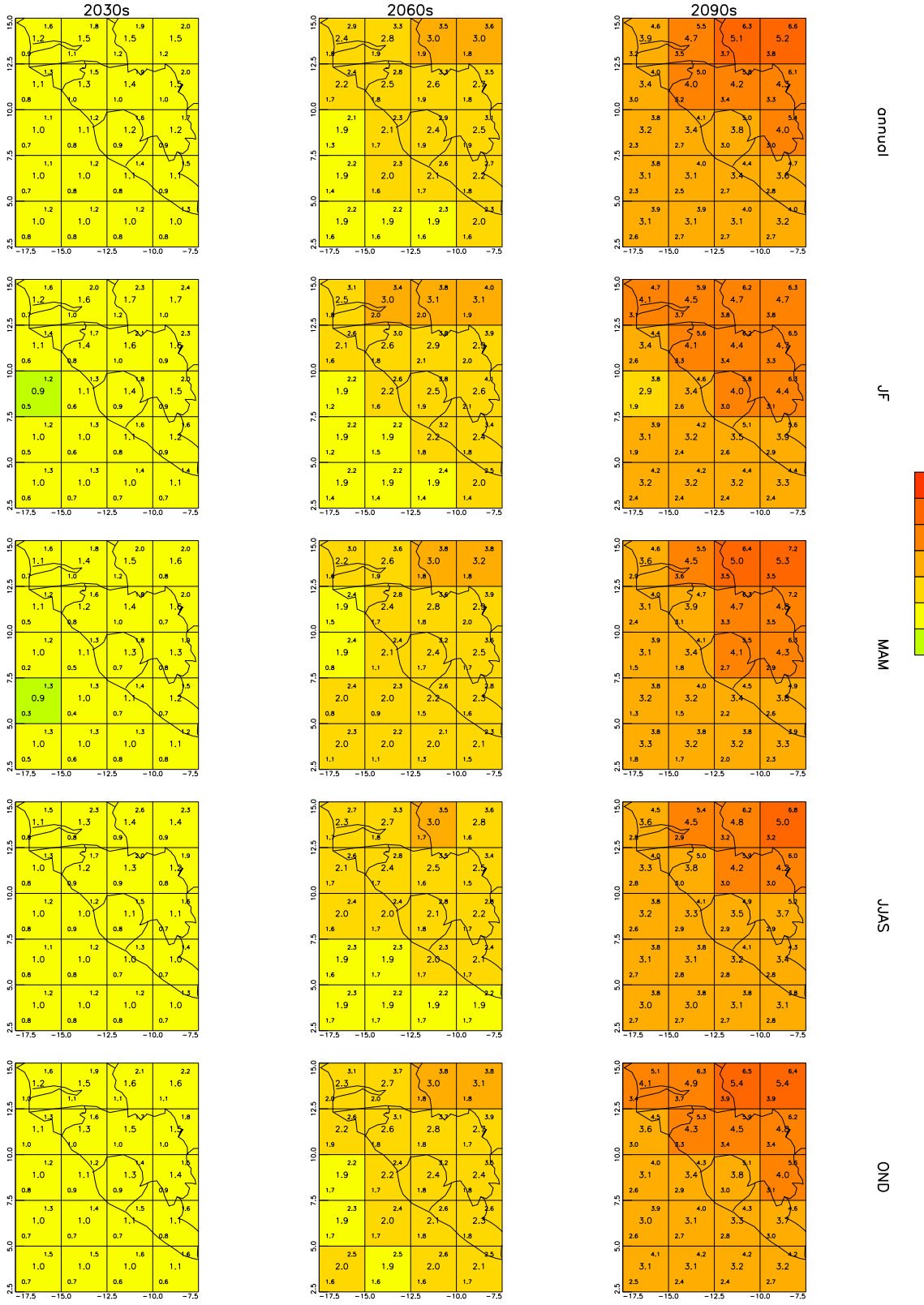

Figure 2: Spatial patterns of projected change in mean annual and seasonal temperature for 10-year periods in the future under the SRES A2 scenario. All values are anomalies relative to the mean climate of 1970-1999. In each grid box, the central value gives the ensemble median and the values in the upper and lower corners give the ensemble maximum and minimum.

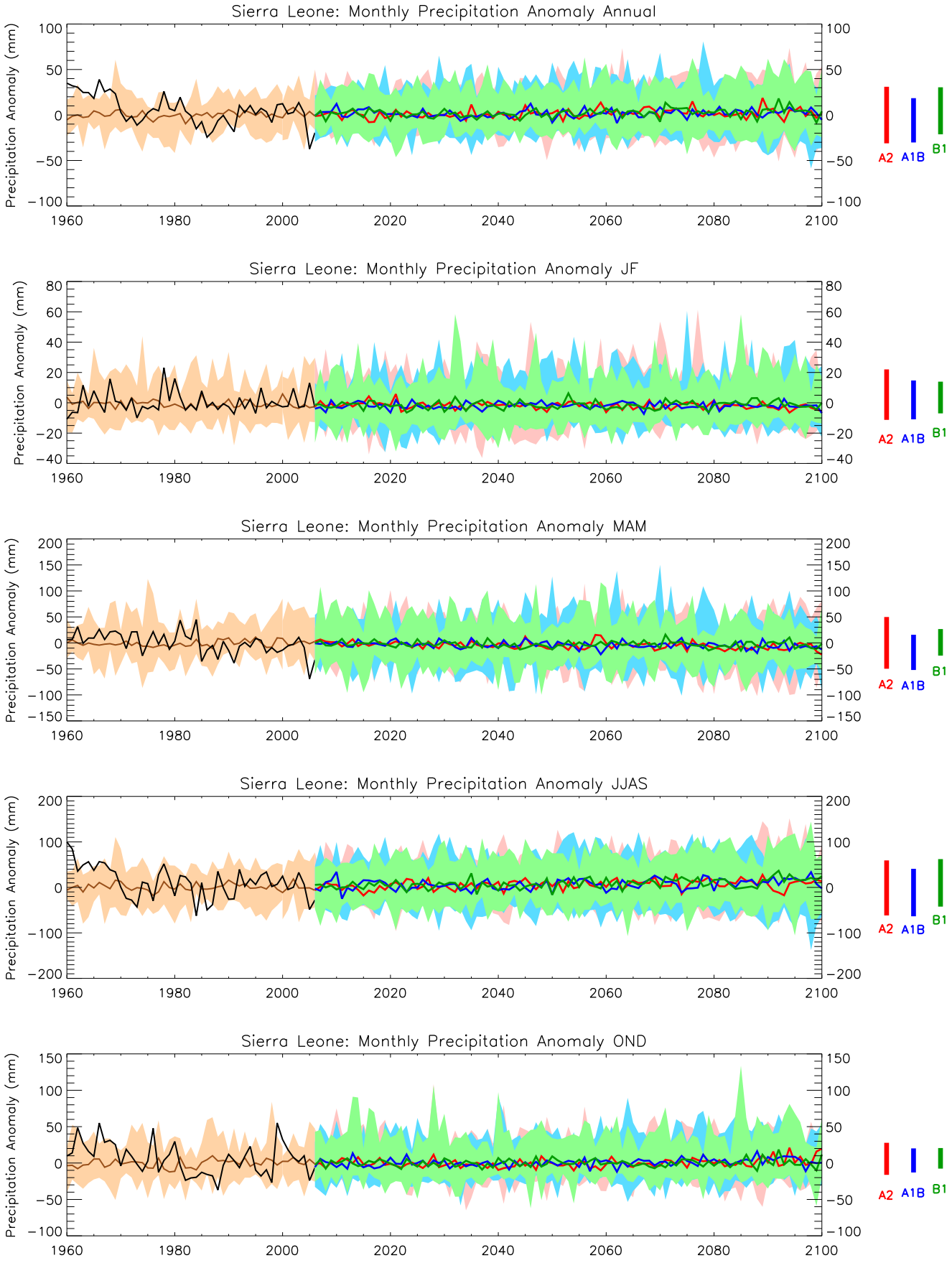

Figure 3: Trends in monthly precipitation for the recent past and projected future. All values shown are anomalies, relative to the 1970-1999 mean climate. See Figure 1 for details.

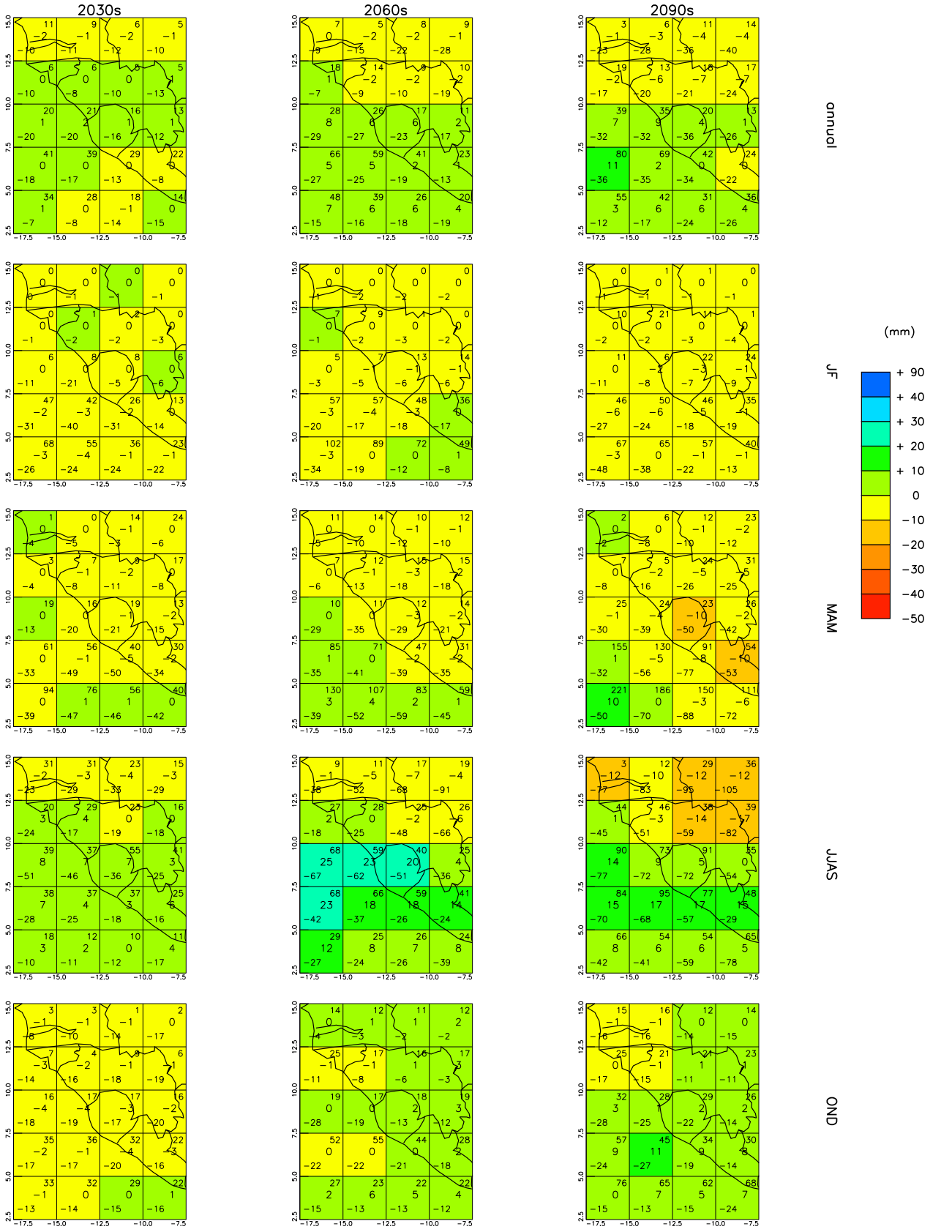

Figure 4: Spatial patterns of projected change in monthly precipitation for 10-year periods in the future under the SRES A2 scenario. All values are anomalies relative to the mean climate of 1970-1999.See Figure 2 for details.

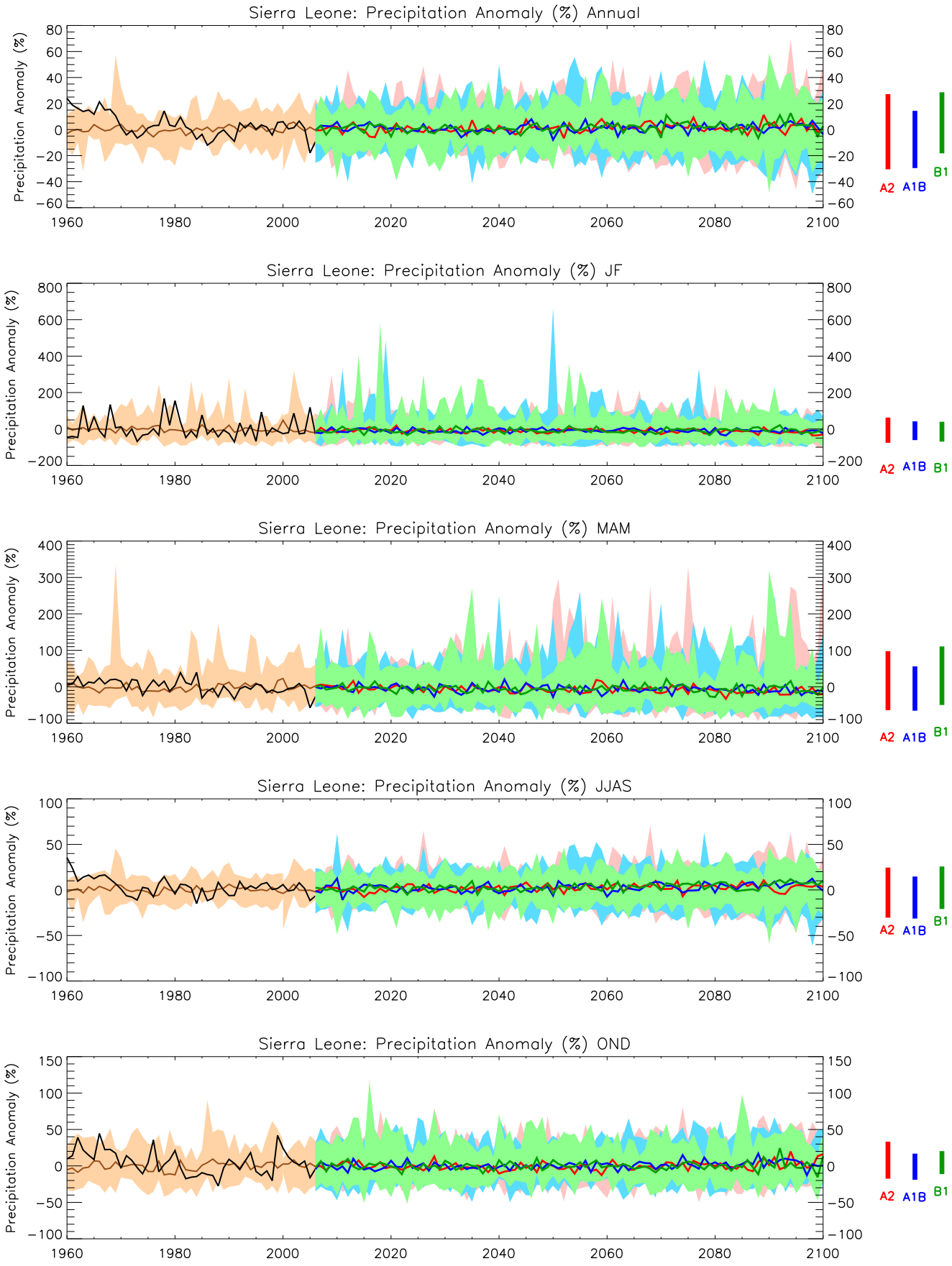

Figure 5: Trends in monthly precipitation for the recent past and projected future. All values shown are percentage anomalies, relative to the 1970-1999 mean climate. See Figure 1 for details.

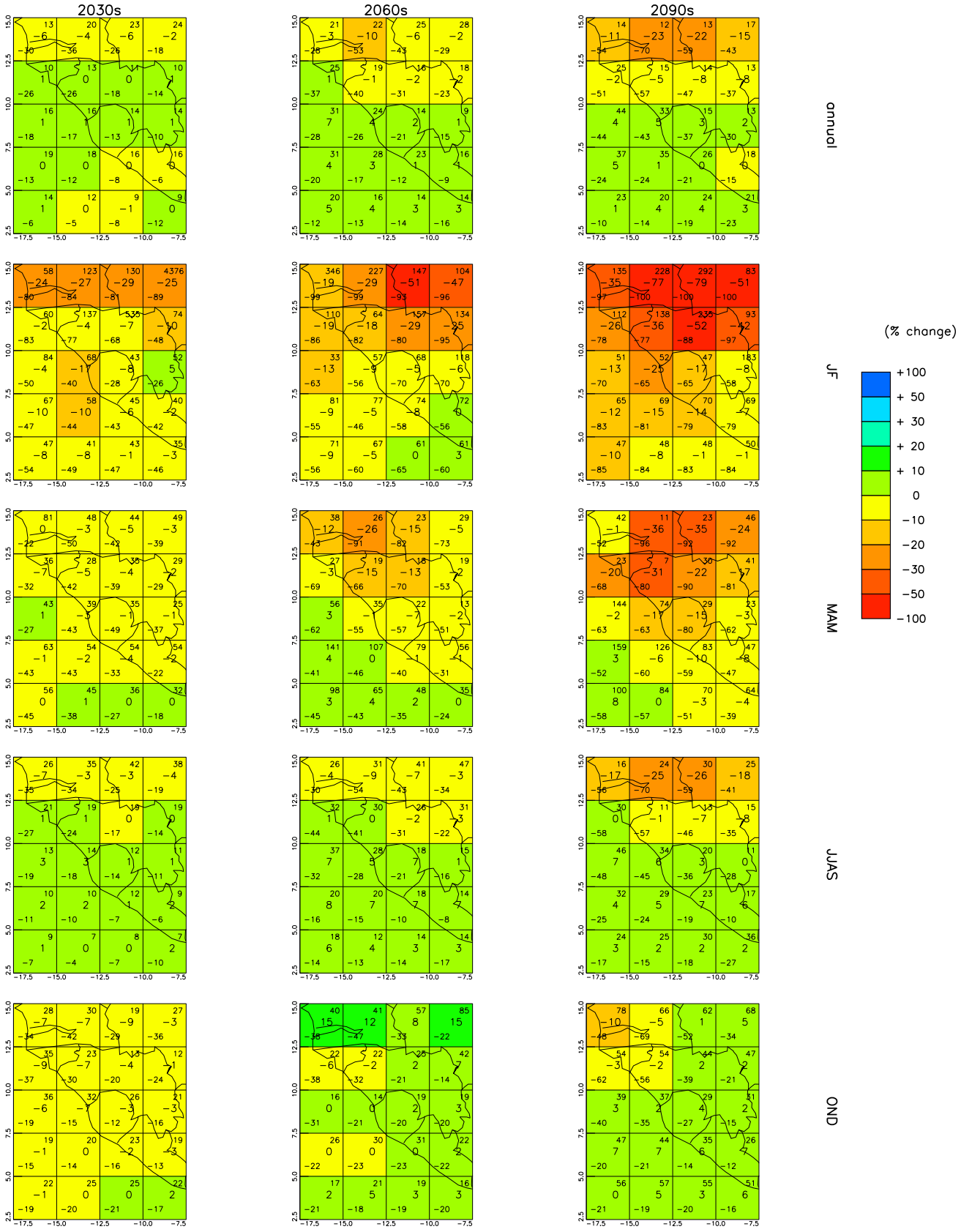

Figure 6: Spatial patterns of projected change in monthly precipitation for 10-year periods in the future under the SRES A2 scenario. All values are percentage anomalies relative to the mean climate of 1970-1999.See Figure 2 for details.

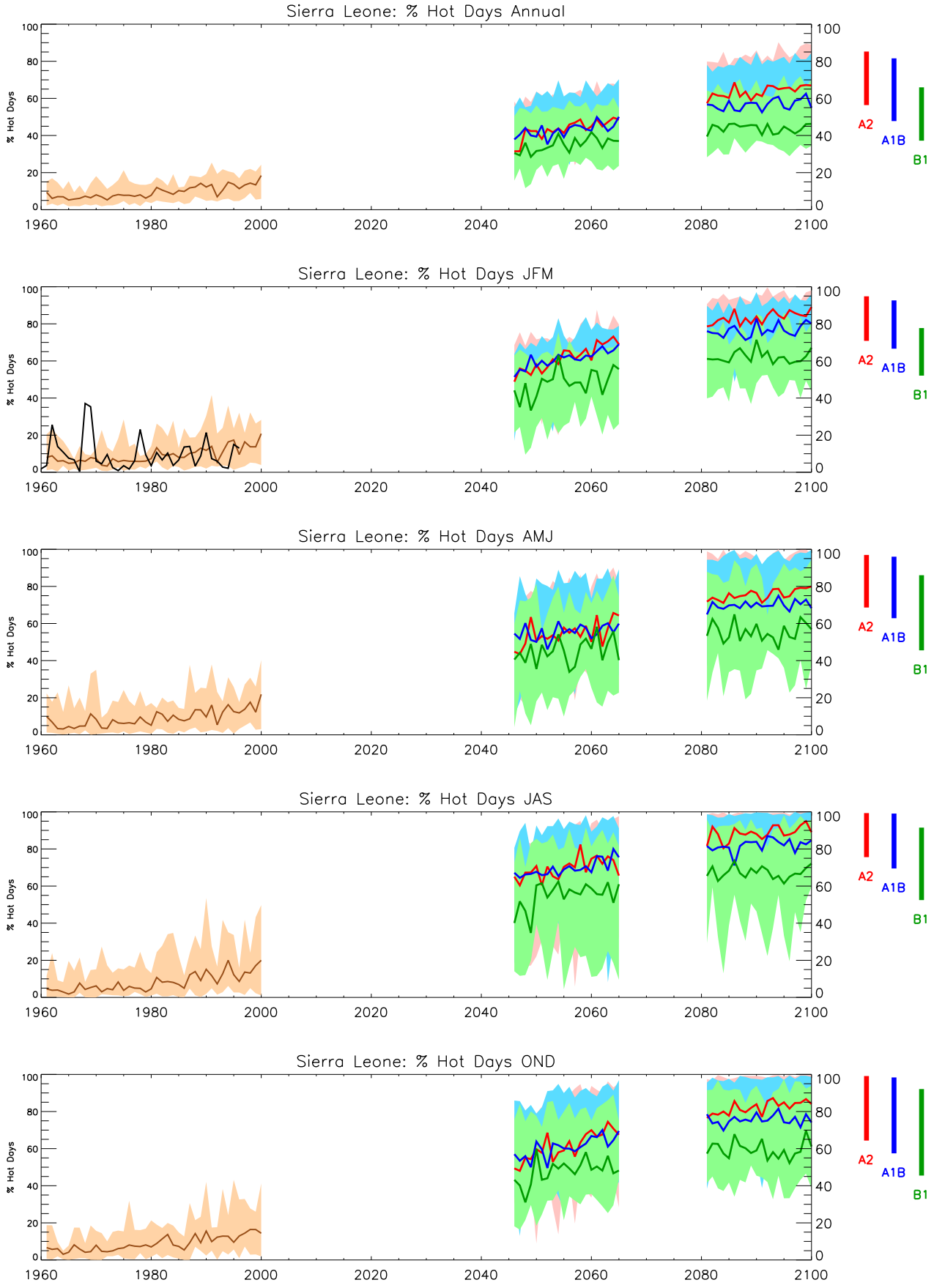

Figure 7: Trends in Hot-day frequency for the recent past and projected future. See Figure 1 for details.

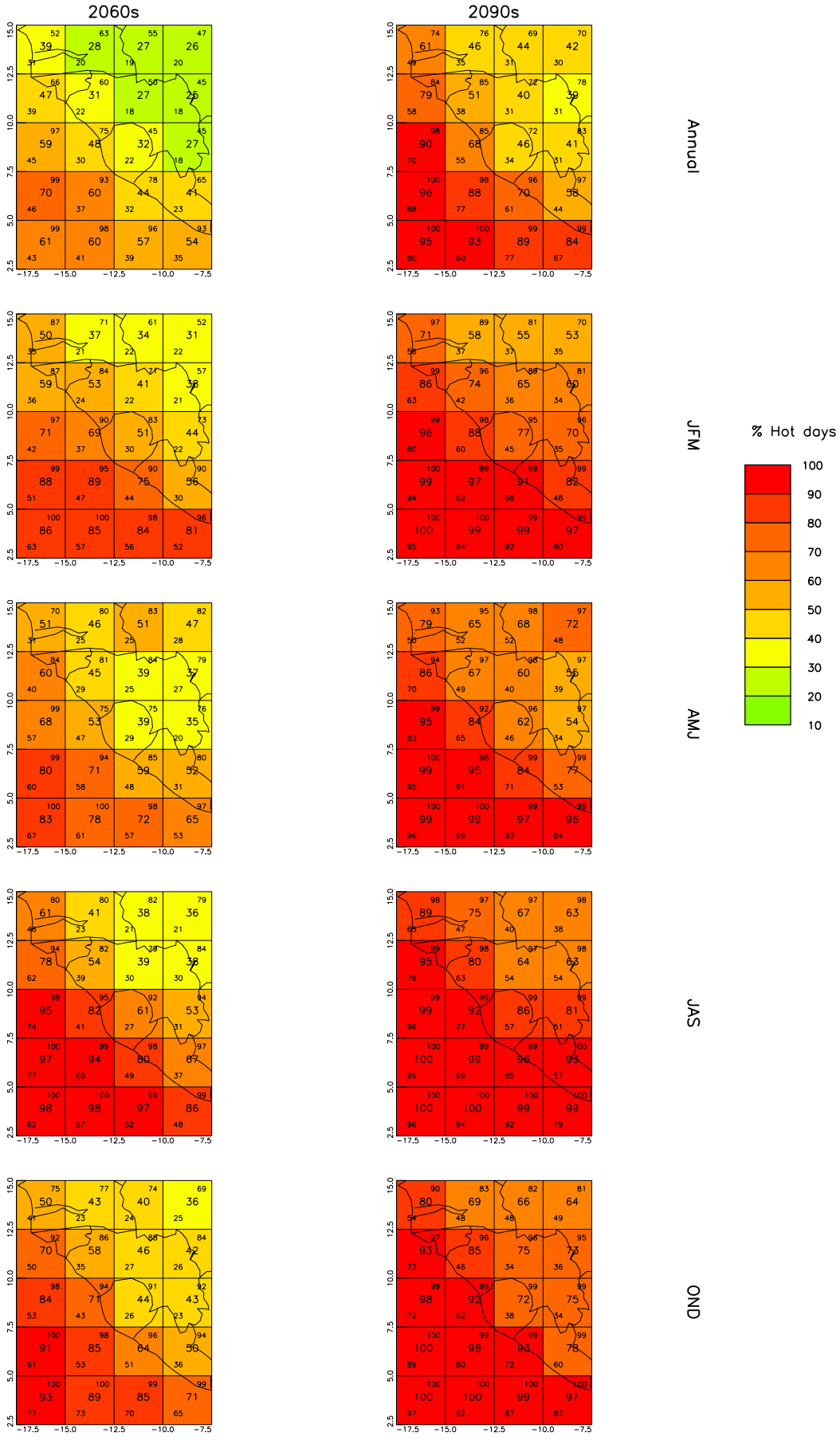

Figure 8: Spatial patterns of projected change in Hot-day frequency for 10-year periods in the future under the SRES A2 scenario. See Figure 2 for details.

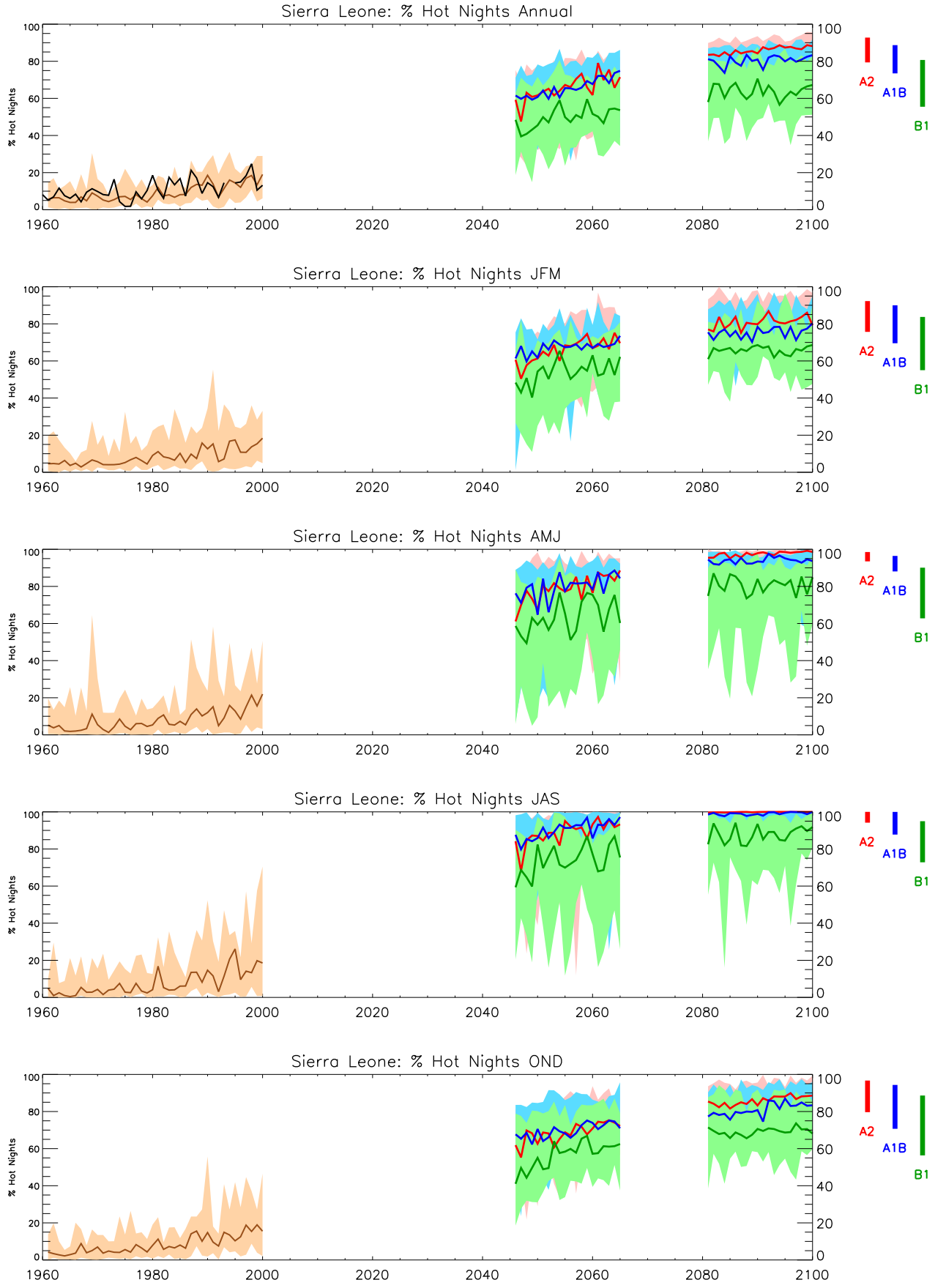

Figure 9: Trends in hot-night frequency for the recent past and projected future. See Figure 1 for details.

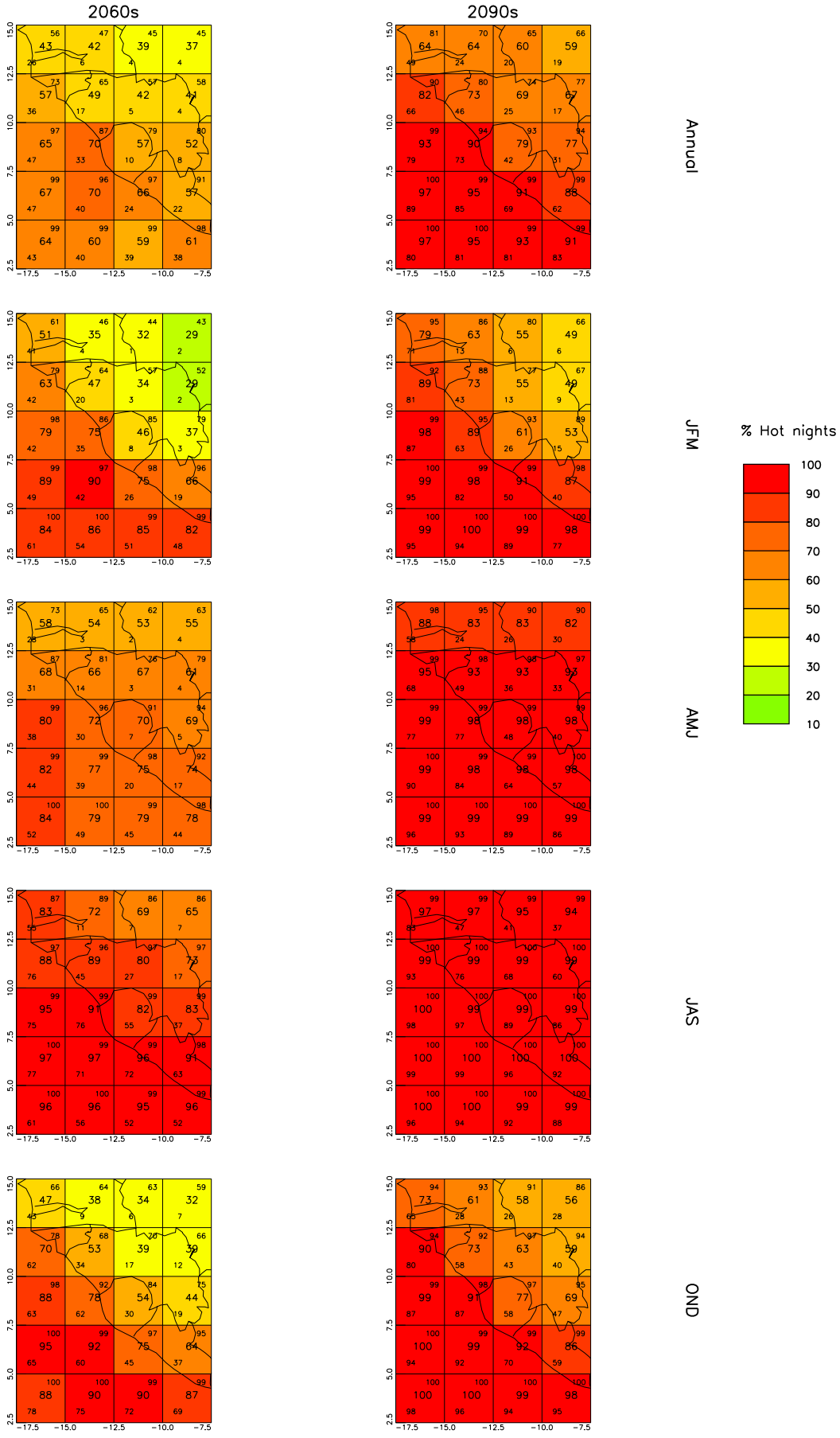

Figure 10: Spatial patterns of projected change in hot-night frequency for 10-year periods in the future under the SRES A2 scenario. See Figure 2 for details.

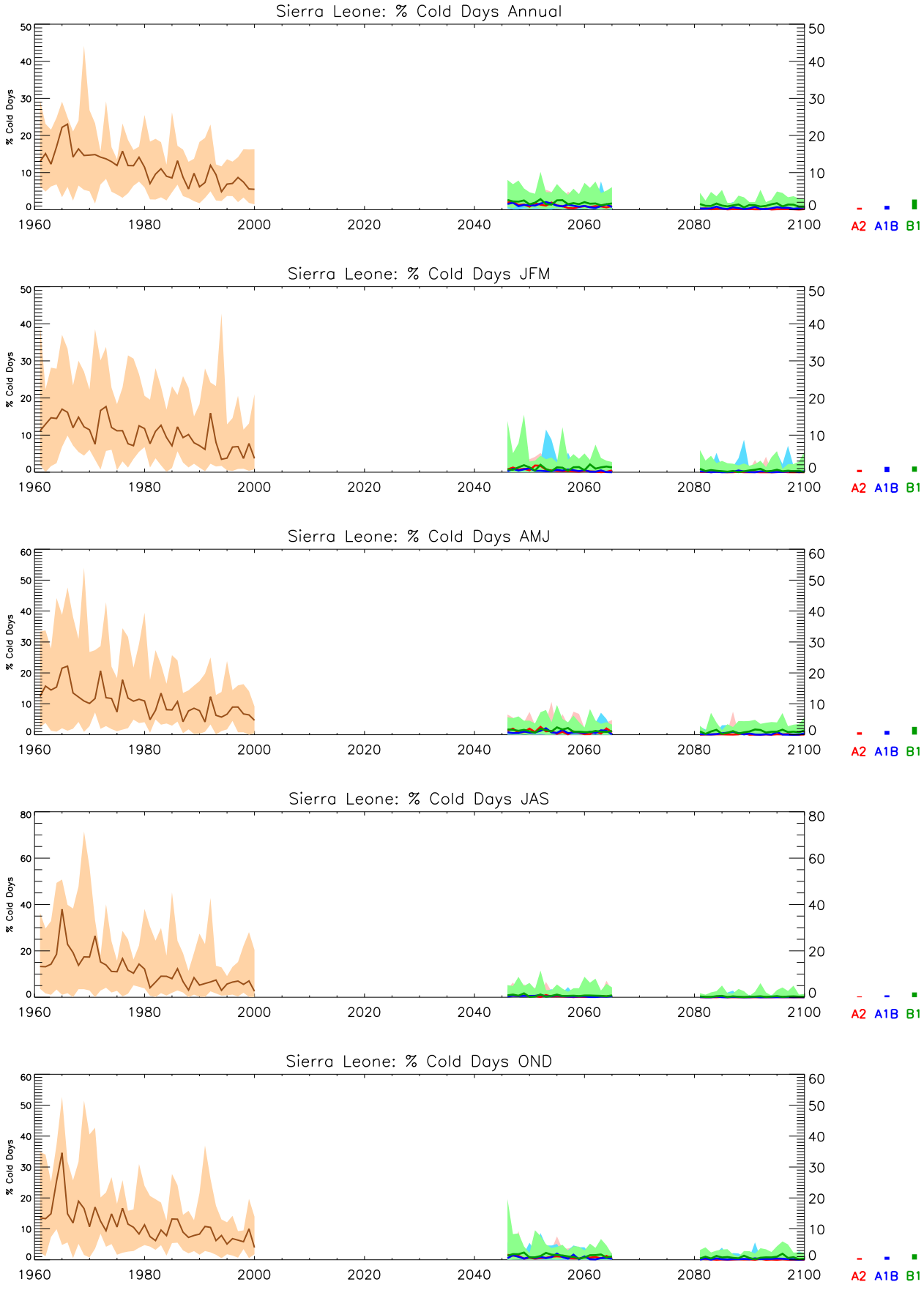

Figure 11: Trends in cold-day frequency for the recent past and projected future. See Figure 1 for details.

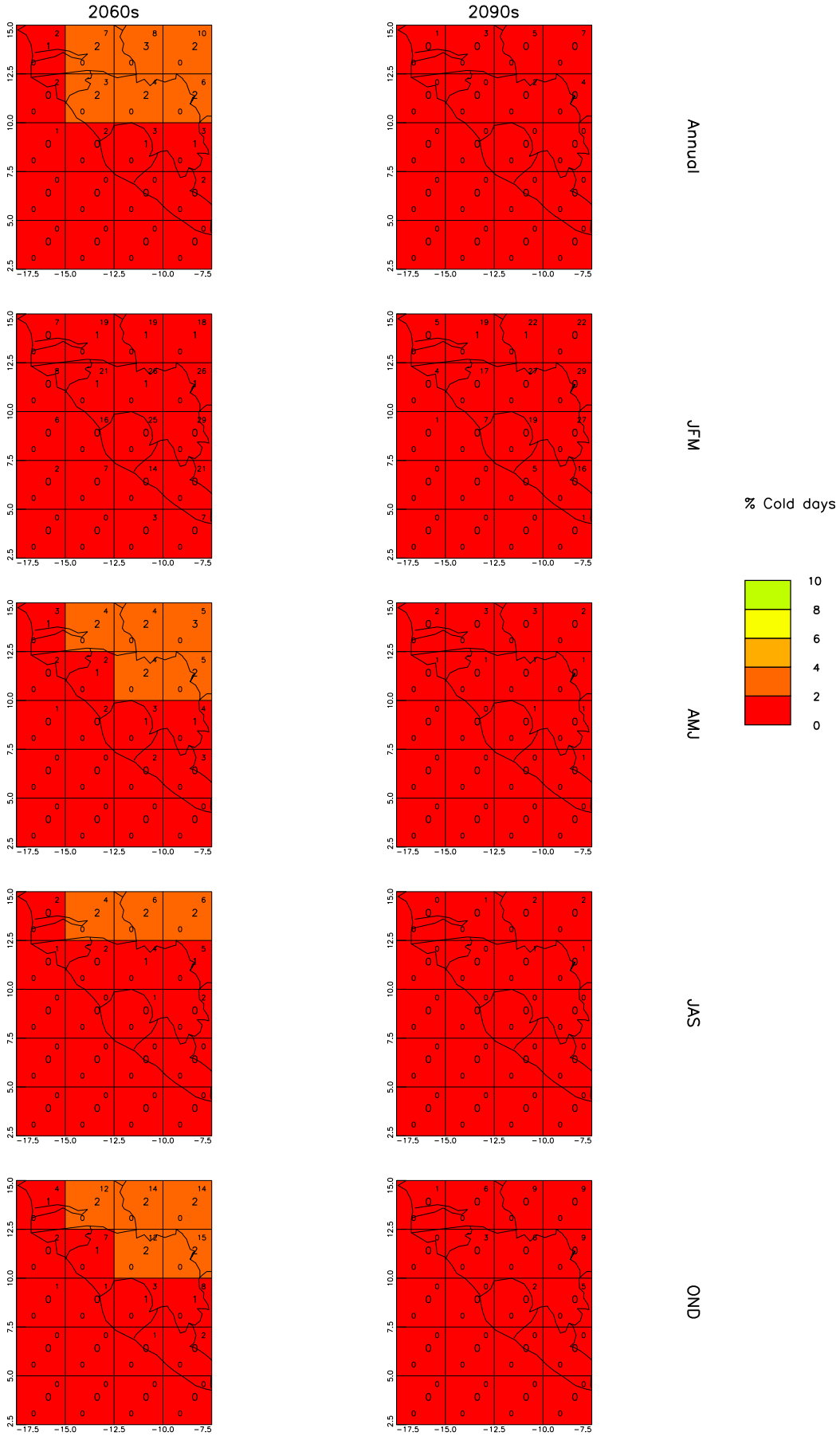

Figure 12: Spatial patterns of projected change in cold-day frequency for 10-year periods in the future under the SRES A2 scenario. See Figure 2 for details.

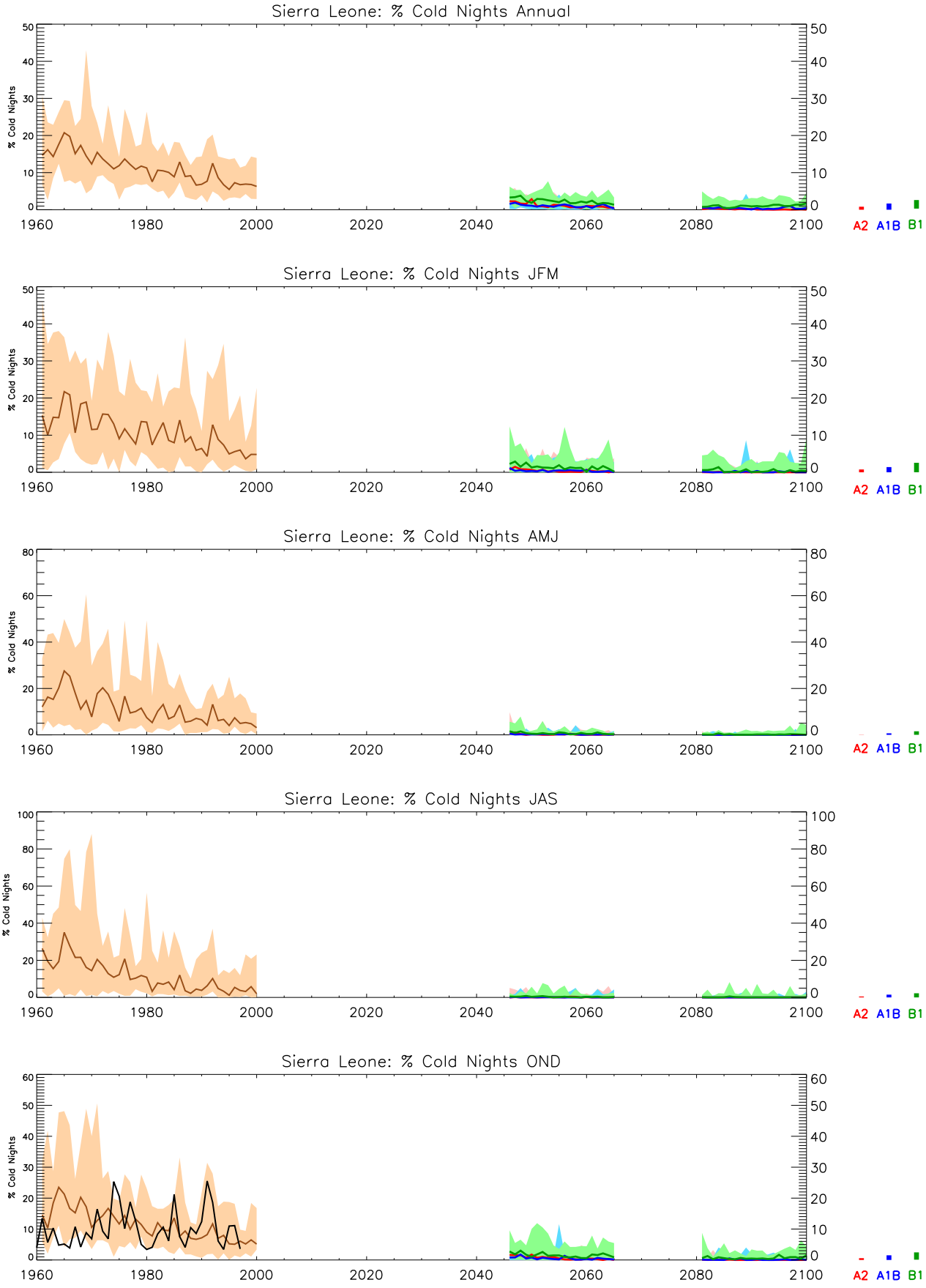

Figure 13: Trends in cold-night frequency for the recent past and projected future. See Figure 1 for details.

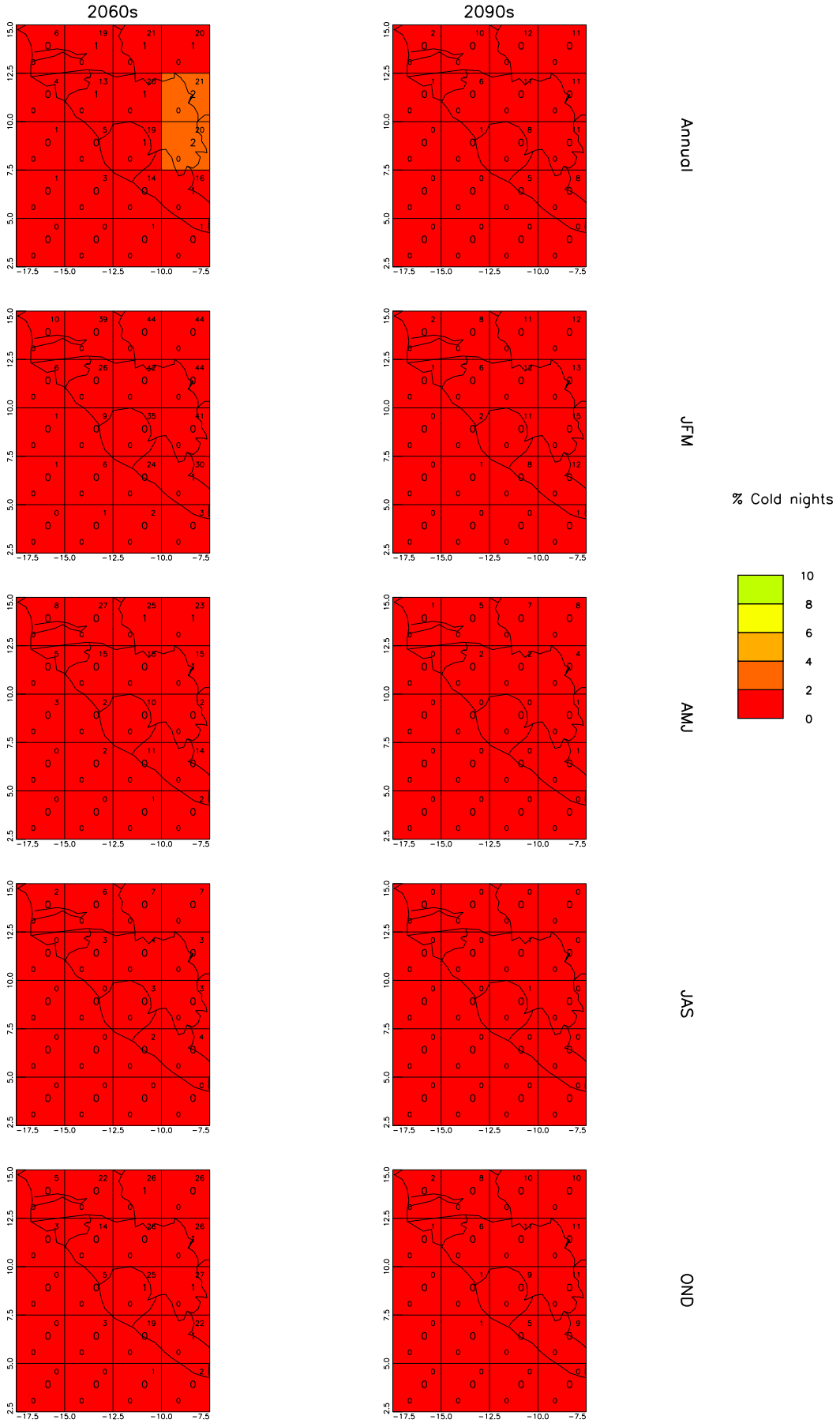

Figure 14: Spatial patterns of projected change in cold-night frequency for 10-year periods in the future under the SRES A2 scenario. See Figure 2 for details.

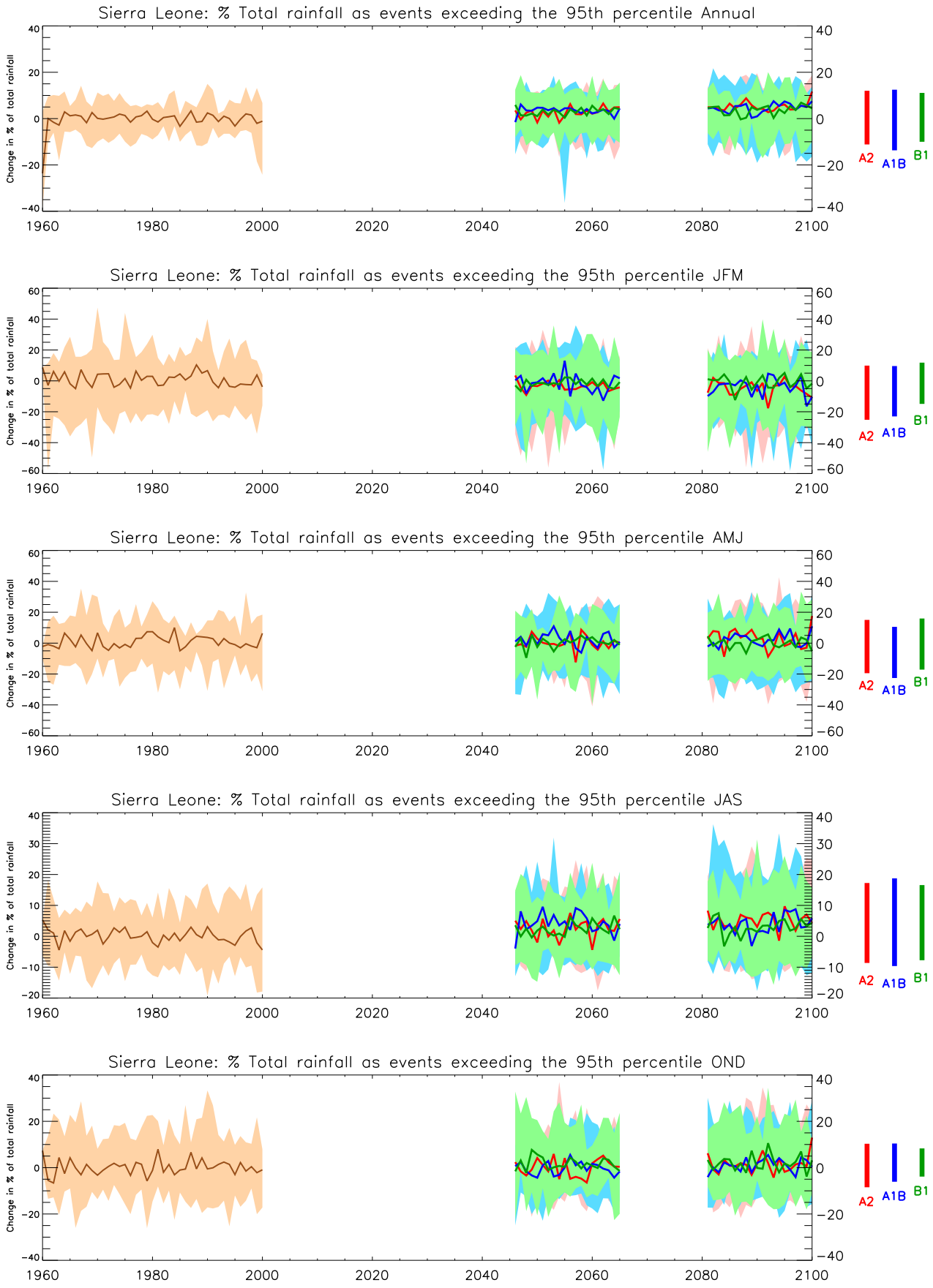

Figure 15: Trends in the proportion of precipitation falling in 'heavy' events for the recent past and projected future. All values shown are anomalies, relative to the 1970-1999 mean climate. See Figure 1 for details.

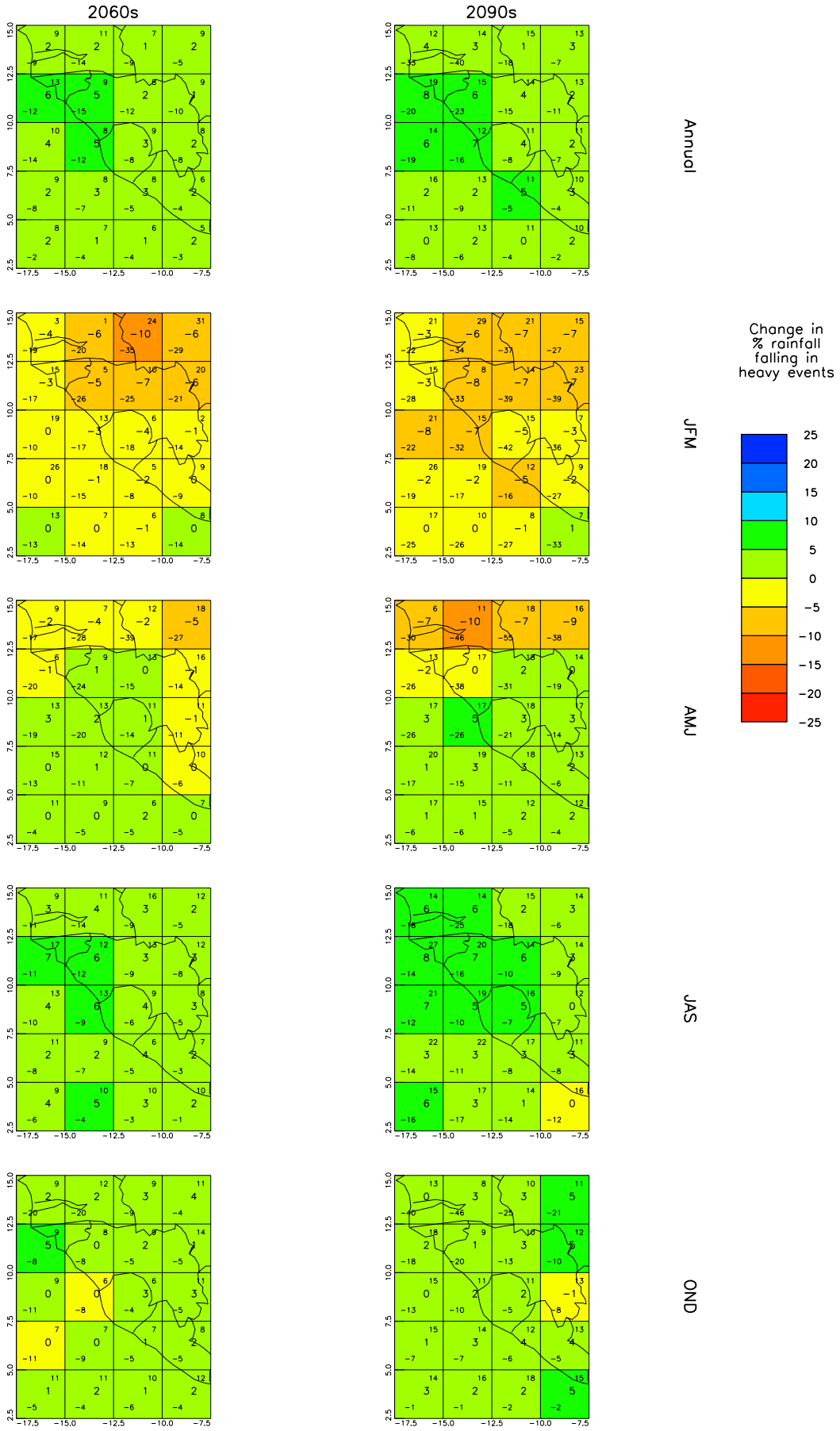

Figure 16: Spatial patterns of projected change in the proportion of precipitation falling in 'heavy' events for 10-year periods in the future under the SRES A2 scenario. All values are anomalies relative to the mean climate of 1970-1999. See Figure 2 for details.

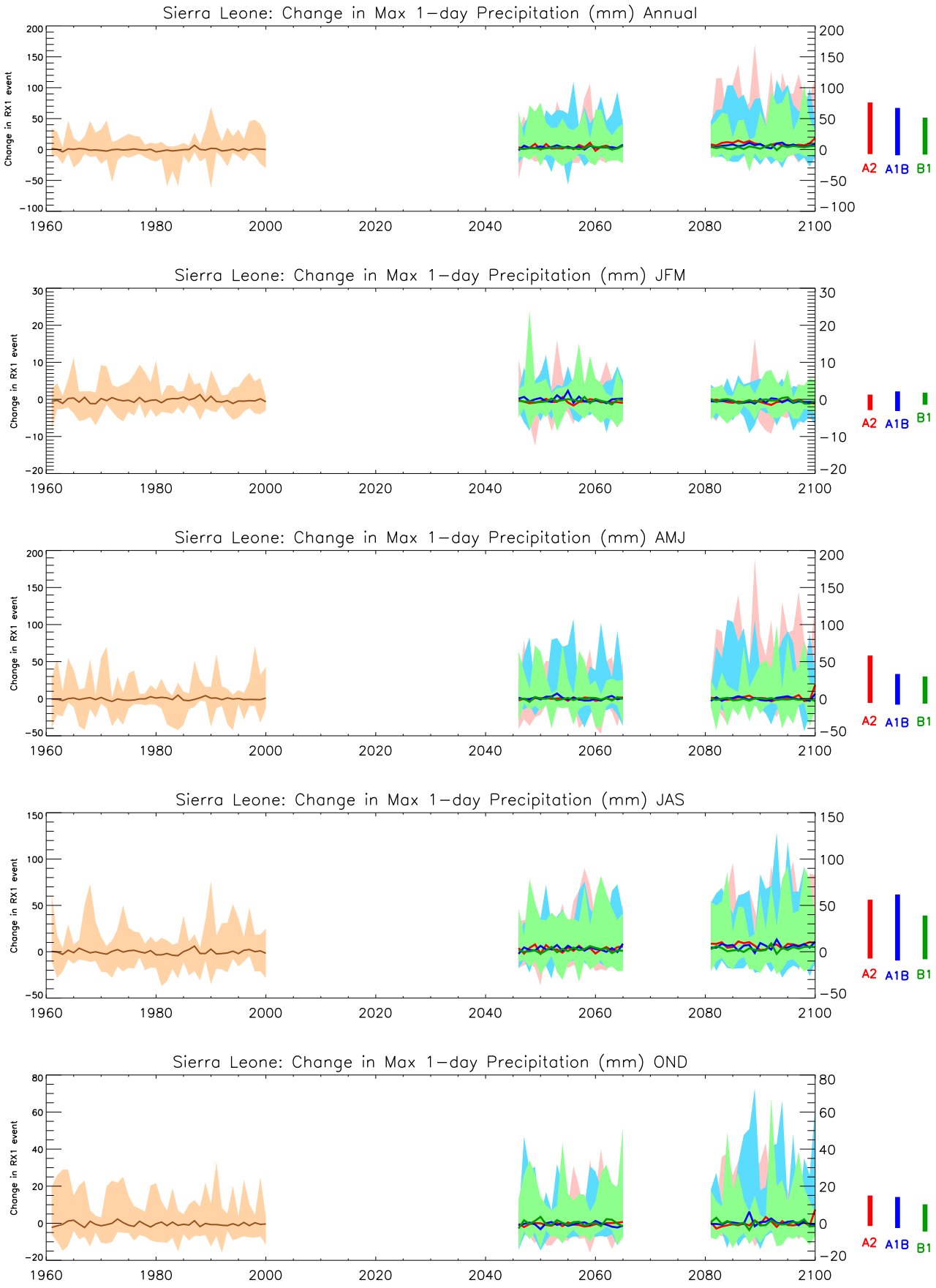

Figure 17: Trends in maximum 1-day rainfall for the recent past and projected future. All values shown are anomalies, relative to the 1970-1999 mean climate. See Figure 1 for details.

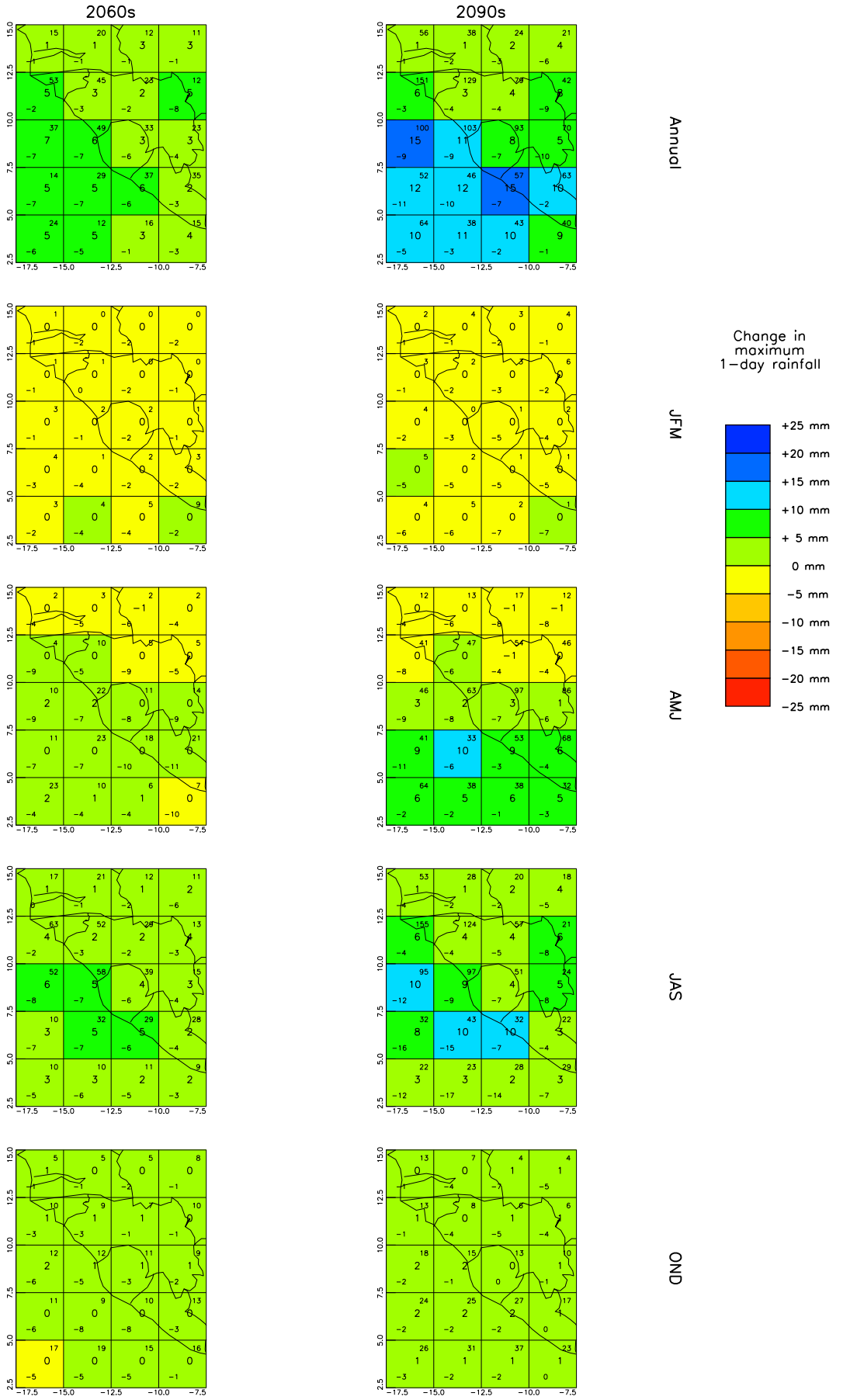

Figure 18: Spatial patterns of maximum 1-day rainfall for 10-year periods in the future under the SRES A2 scenario. All values are anomalies relative to the mean climate of 1970-1999. See Figure 2 for details.

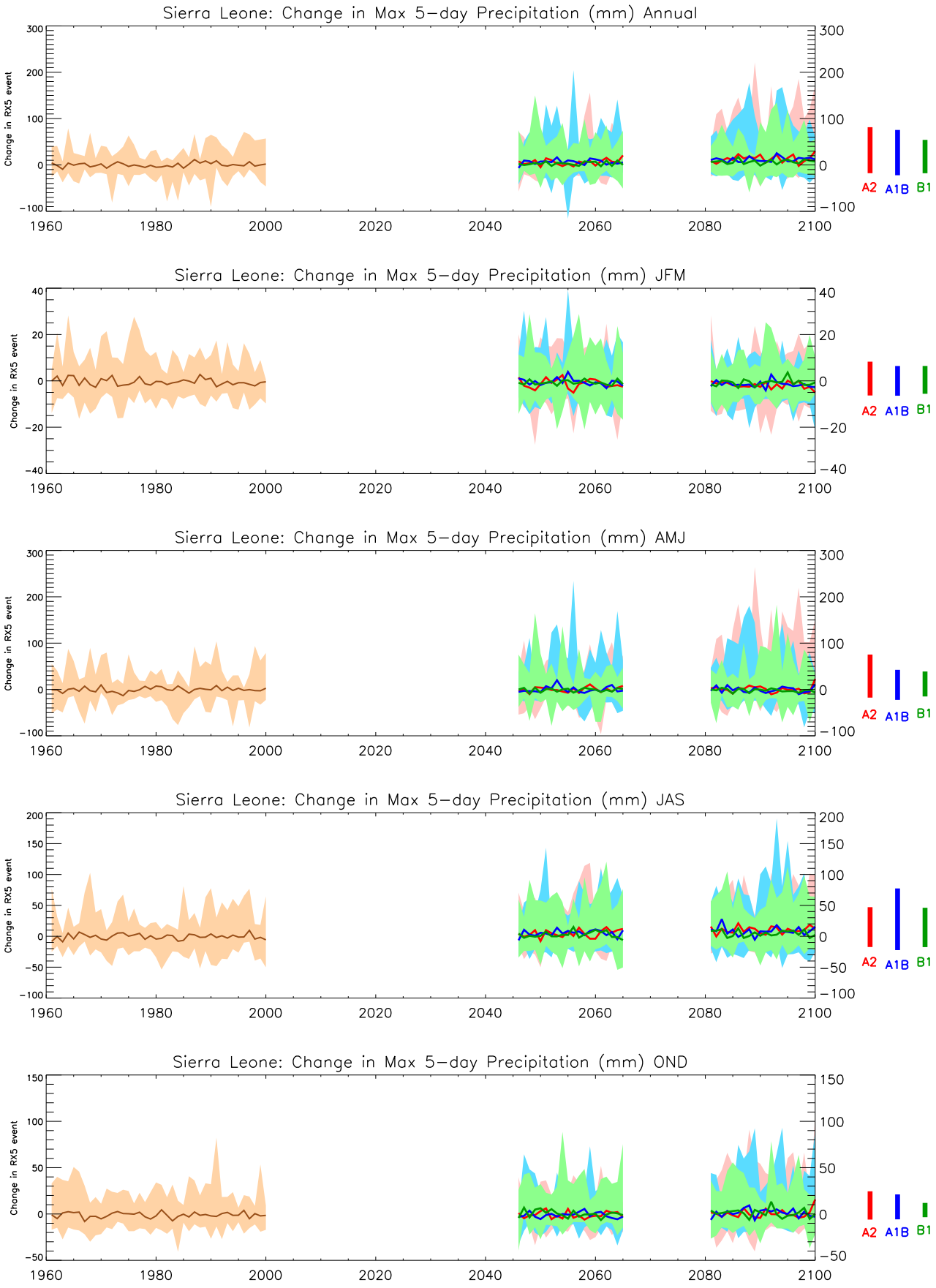

Figure 19: Trends in maximum 5-day rainfall for the recent past and projected future. All values shown are anomalies, relative to the 1970-1999 mean climate. See Figure 1 for details.

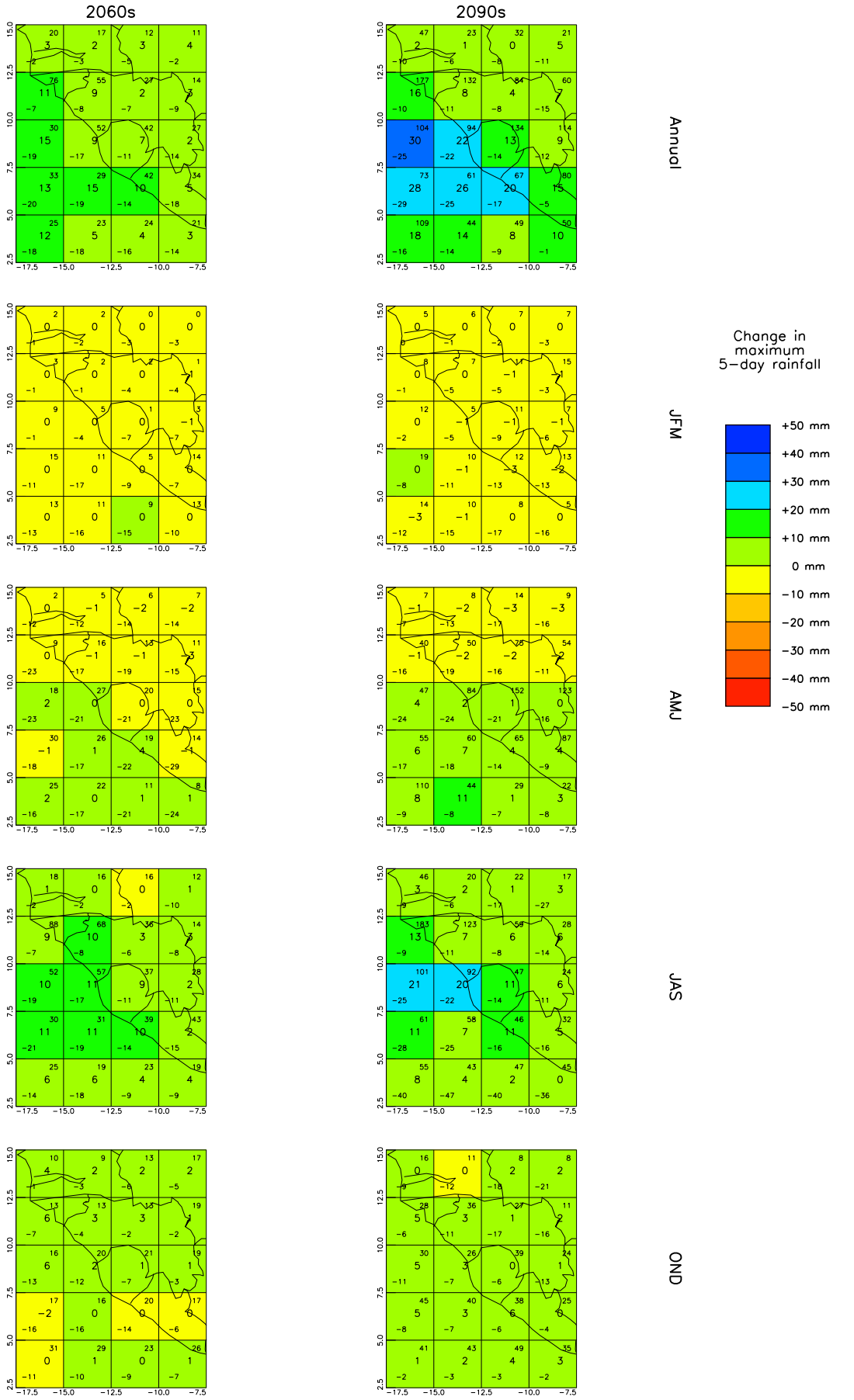

Figure 20: Spatial patterns of projected change in maximum 5-day rainfall for 10-year periods in the future under the SRES A2 scenario. All values are anomalies relative to the mean climate of 1970-1999. See Figure 2 for details.