a) Damage function in year T — Impact vs °C above pre-industrial

b) Temperature distribution in year T — f(x) vs °C above pre-industrial

c) Impact distribution in year T — f(x) vs Impact

Figure 1:　　　Illustration of the methodology. Damage functions showing impact in a given year against increase in global mean temperature (1a) are combined with the distribution of the increase in temperature in that year (1b) to produce a distribution of impacts in that year (1c). The individual lines in 1a are the damage functions constructed from different climate model patterns. The dotted vertical lines in 1c show the 10th and 90th percentiles, and the solid vertical line shows the median.
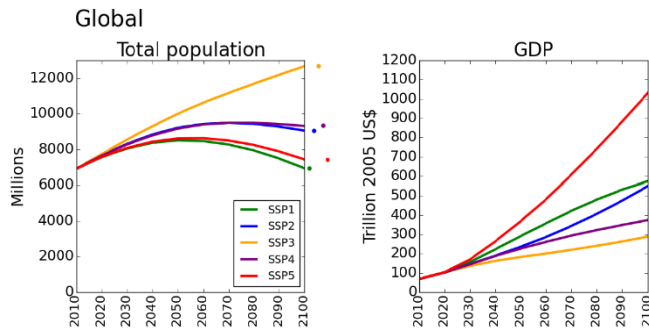

Global

Total population — Millions

GDP — Trillion 2005 US$

Legend: SSP1, SSP2, SSP3, SSP4, SSP5

Figure 2:　　　Global total population and GDP under the five Shared Socioeconomic Pathways (SSPs).

Global mean surface temperature — °C above pre-industrial

Global average sea level rise — cm above 1986-2005

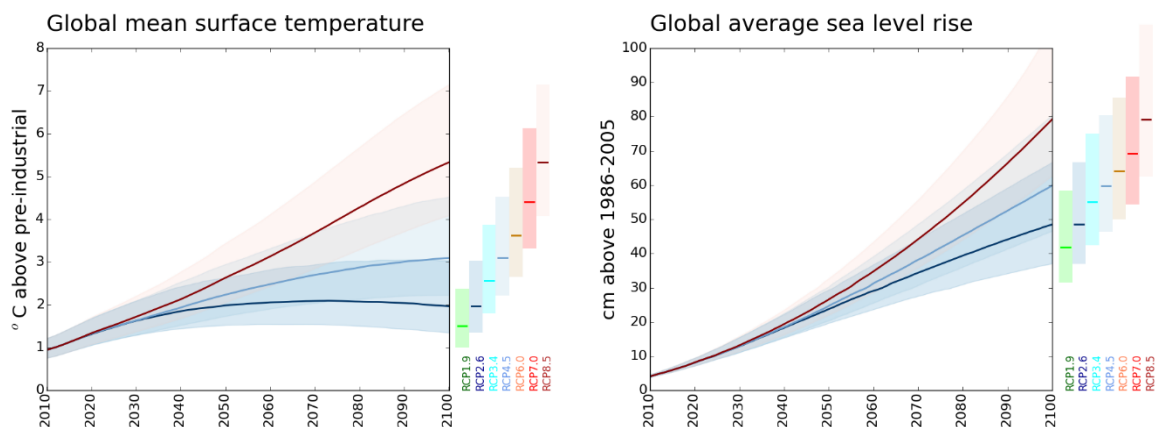RCP1.9 RCP2.6 RCP3.4 RCP4.5 RCP6.0 RCP7.0 RCP8.5

Figure 3:　　　Increase in global mean surface temperature and global mean sea level, under the seven forcing scenarios. For temperature, the solid line represents the median estimate and the shaded area the 10th to 90th percentiles. For sea level, the solid line represents a central estimate and the shaded area the range between a 'low' and 'high' estimate.
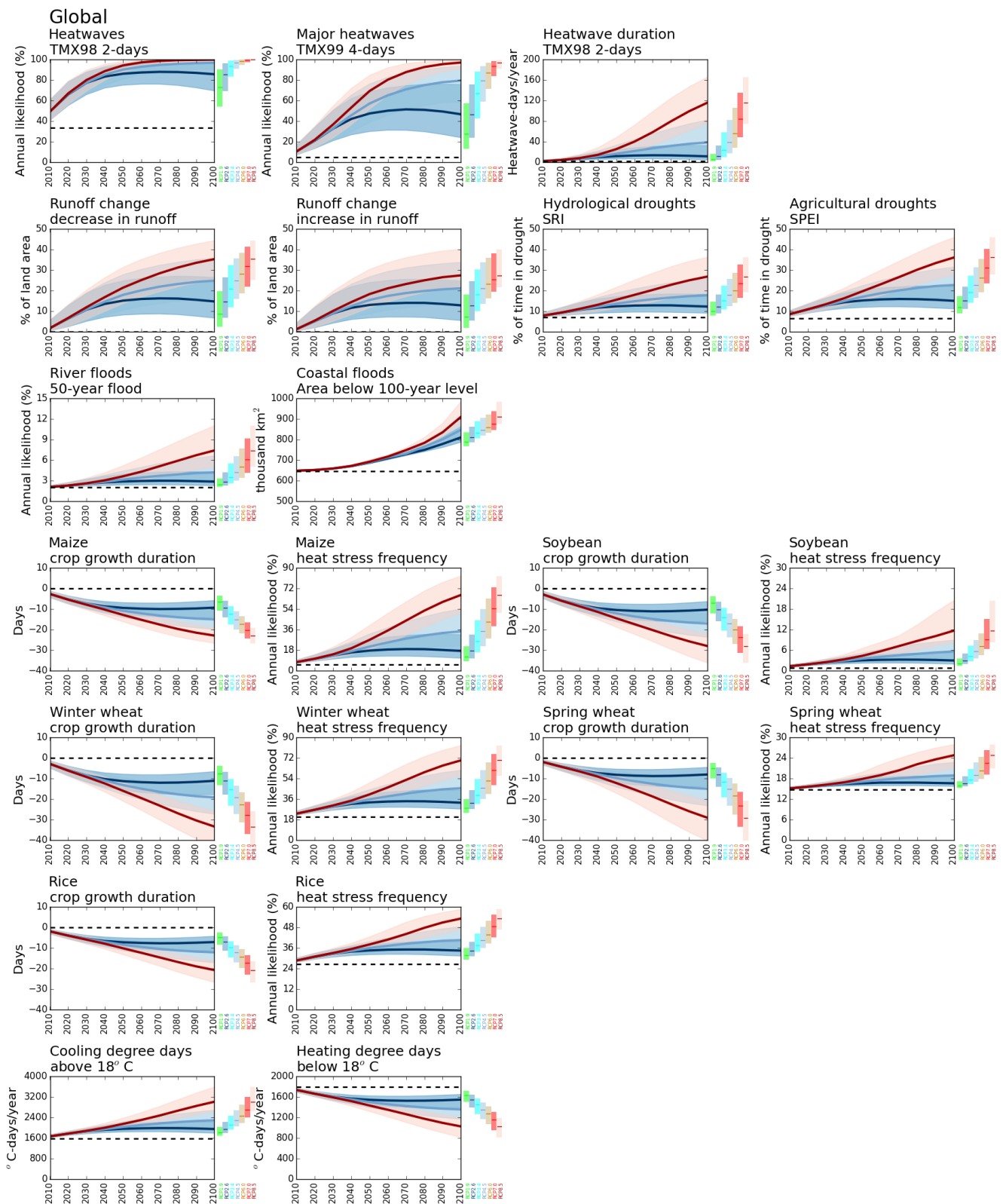
Figure 4: Global hazard indicators to 2100, under RCP2.6, RCP4.5 and RCP8.5. The bars on the right show impacts in 2100 under seven RCPs. The dotted line shows the value of the indicator under the 1981-2010 climate (1986-2005 sea level). The solid line represents the median and the shaded area the range between the 10th and 90th percentiles ("low" and "high" for the coastal indicator).
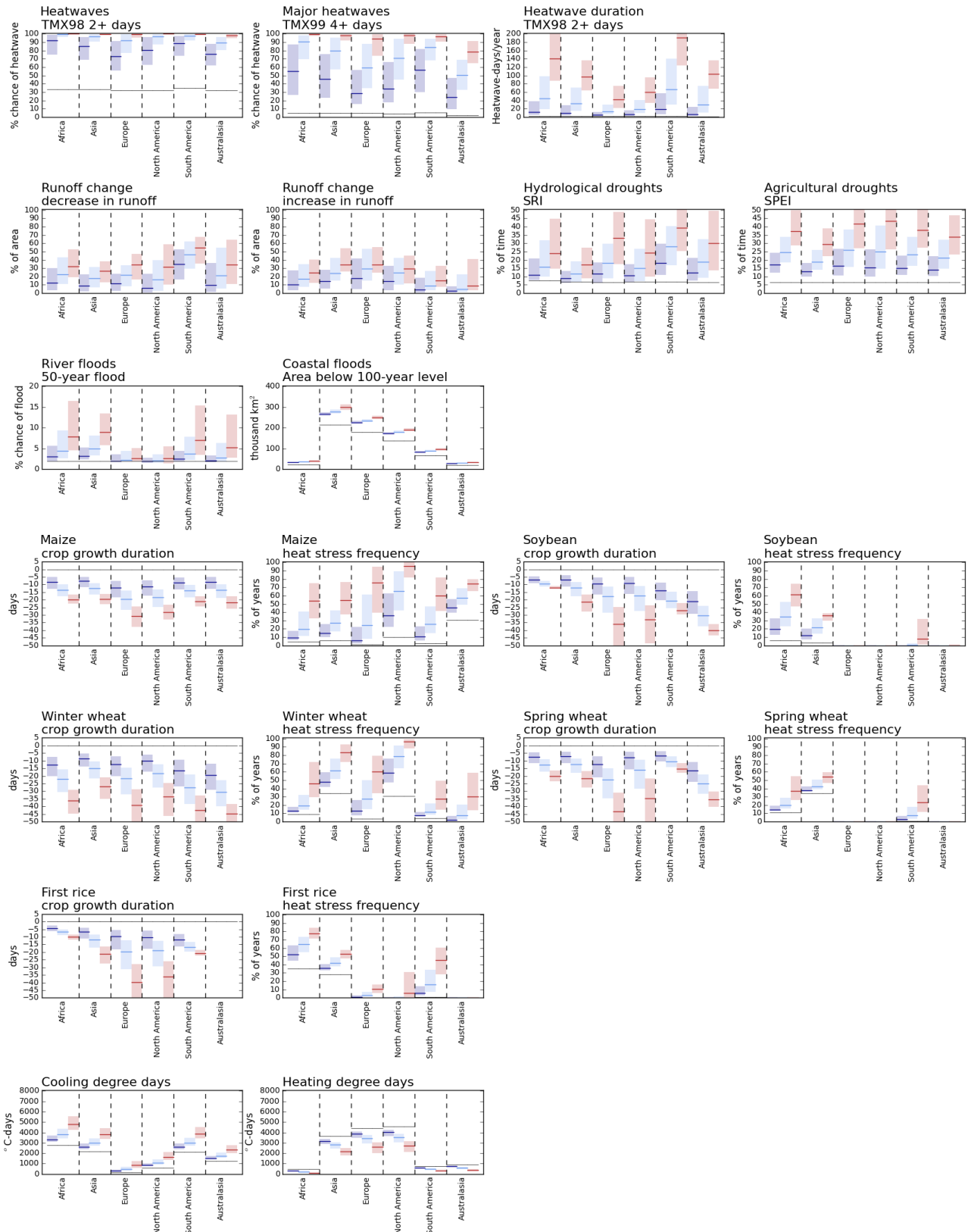
Figure 5: Hazard indicators across continents in 2100: RCP2.6, RCP4.5 and RCP8.5. The solid black lines show indicators under the 1981-2010 climate (1986-2005 sea level). The solid line represents the median and the shaded area the range between the 10th and 90th percentiles ("low" and "high" for the coastal indicator).
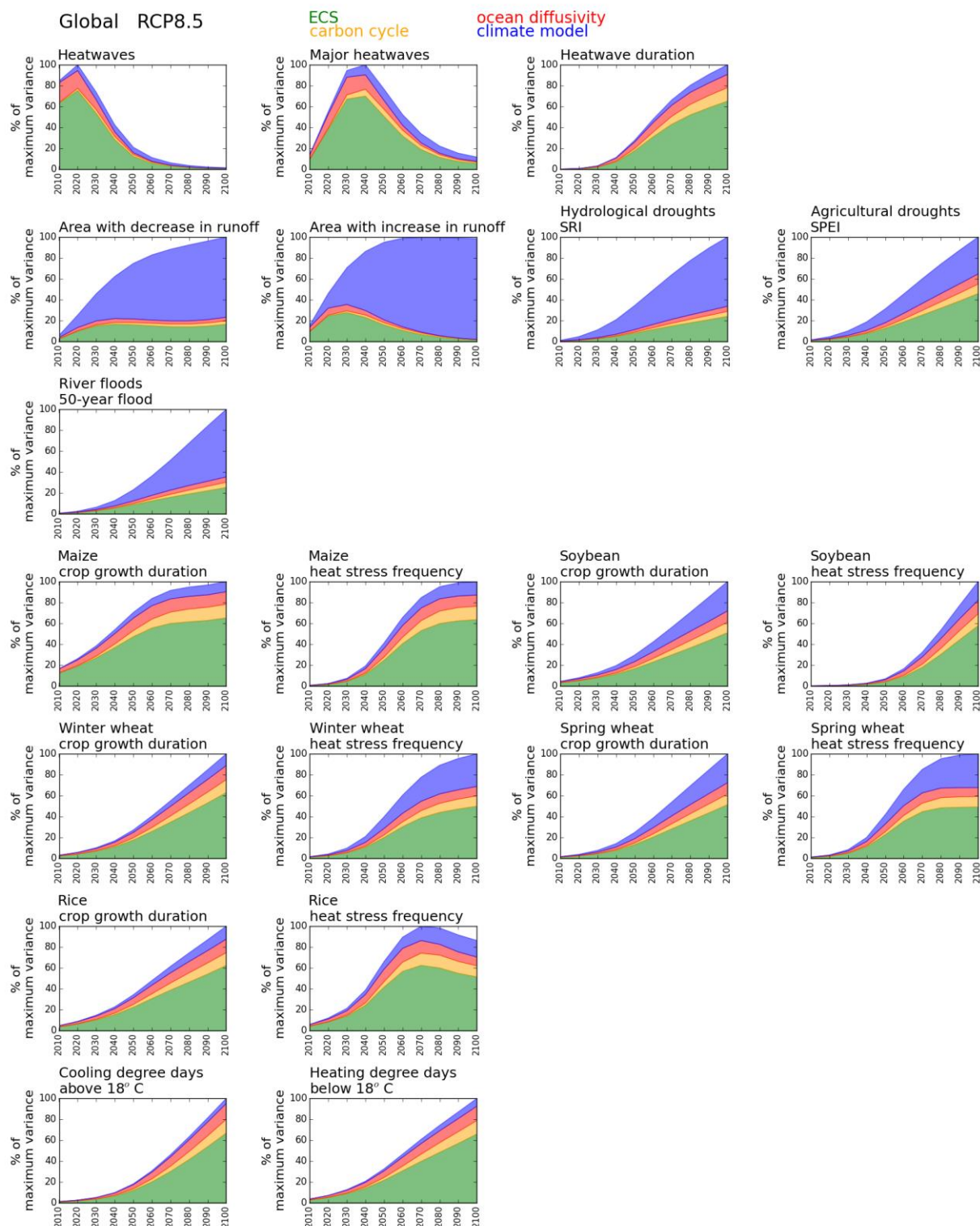
Figure 6: Relative importance of different sources of scientific uncertainty in the projected hazard indicators: RCP8.5, global scale. The plots show the relative contribution of uncertainty in equilibrium climate sensitivity (ECS), carbon cycle feedback, ocean diffusivity and climate model pattern to total uncertainty in estimated impact.
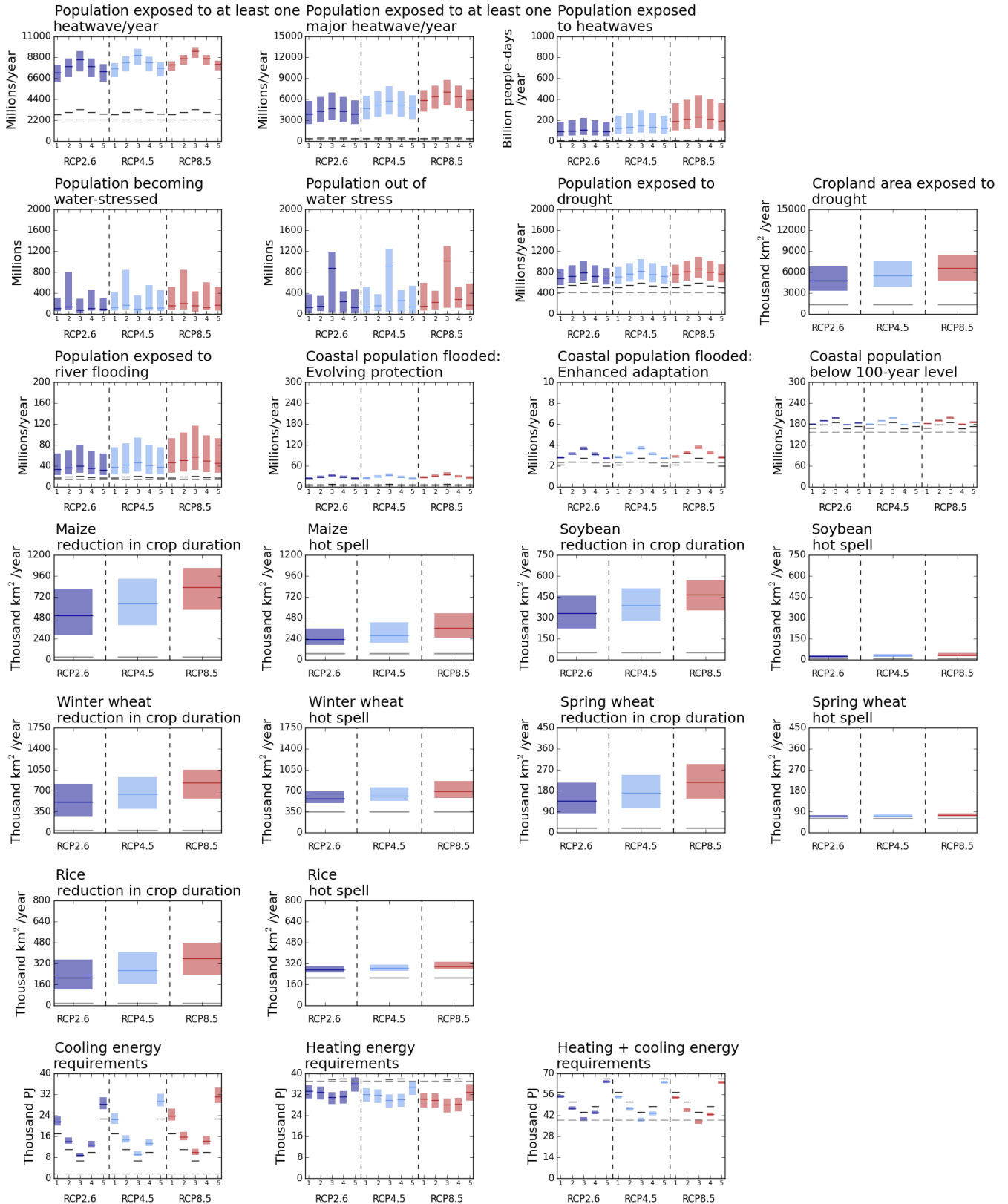
Global 2050

Figure 7a: Global impact indicators in 2050: RCP2.6, RCP4.5 and RCP8.5. The solid line represents the median and the shaded area the range between the 10th and 90th percentiles ("low" and "high" for the coastal indicator). The horizontal grey and black lines are impacts in 2010 and 2050 respectively with the 1981-2010 climate (1986-2010 sea level). The five bars for each RCP represent the five Shared Socio-economic Pathways. The vertical axis limits for the cropland indicators are determined by total cropland area.
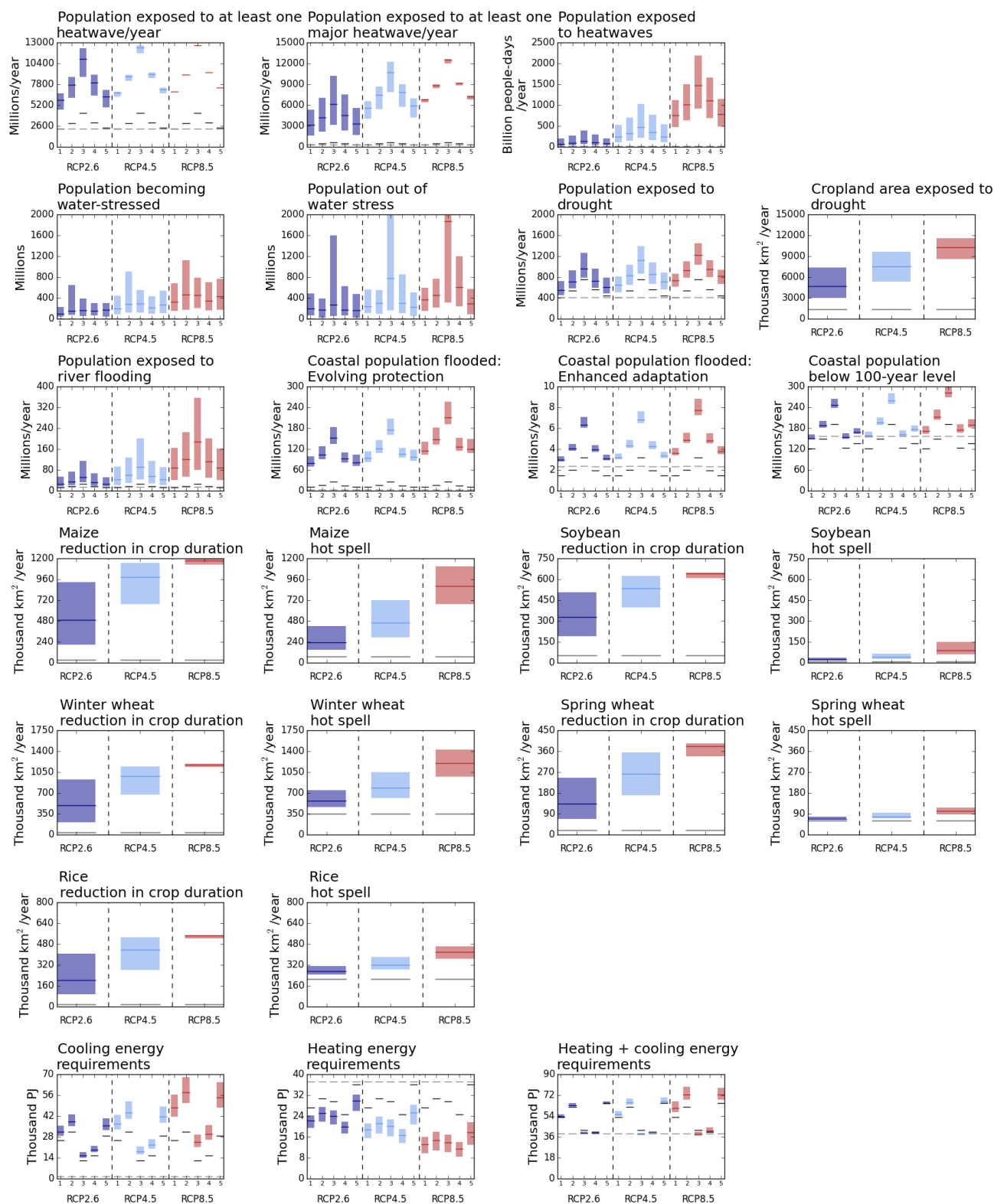
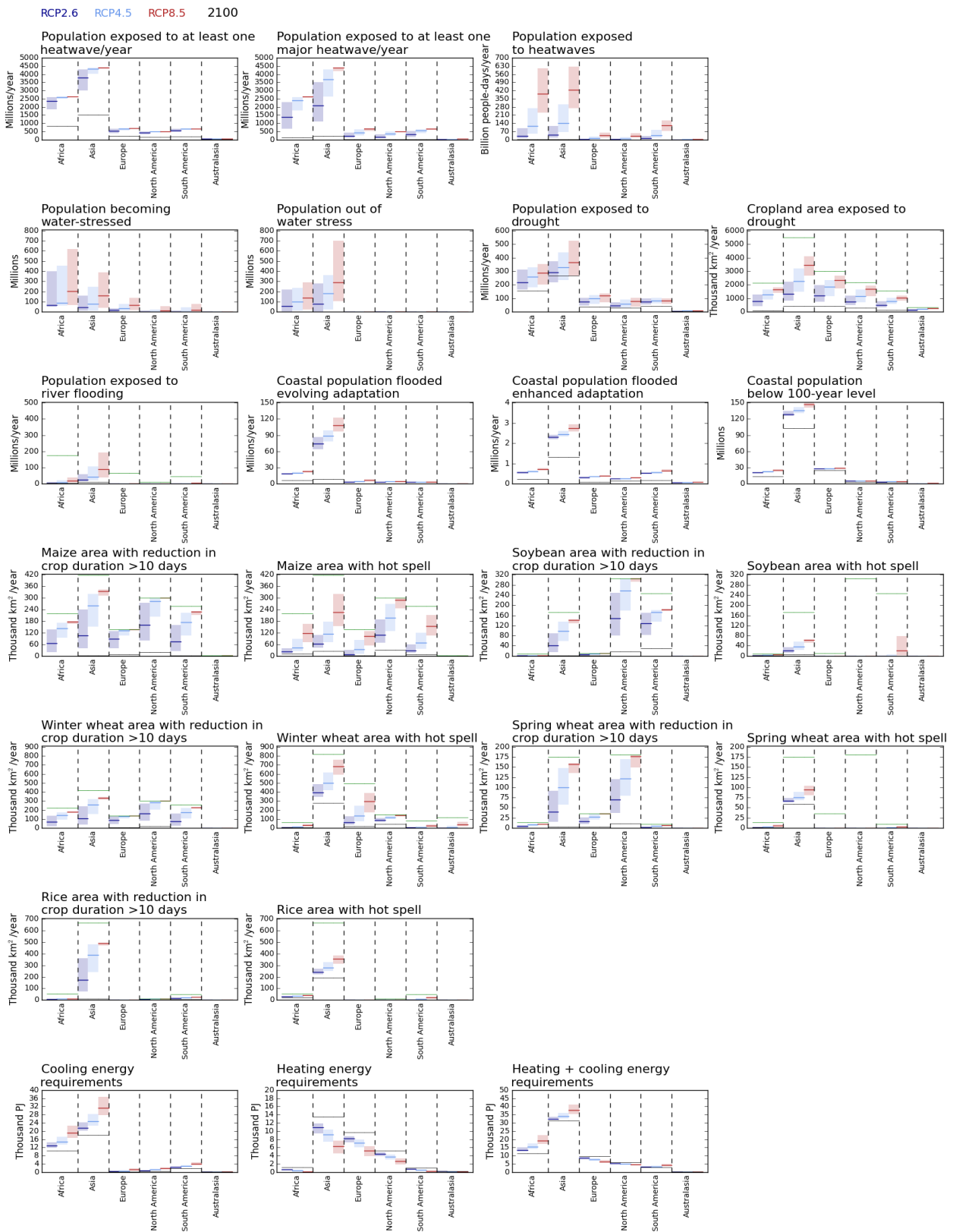Figure 7b: Global impact indicators in 2100

Figure 8: Impact indicators for each continent in 2100: RCP2.6, RCP4.5 and RCP8.5. SSP2 socio-economic scenario for the population indicators. The solid line represents the median and the shaded area the range between the 10th and 90th percentiles ("low" and "high" for the coastal indicator). For the cropland indicators, the green lines show the total regional cropland area, and for the river flood indicator the green line shows the total regional river floodplain population.
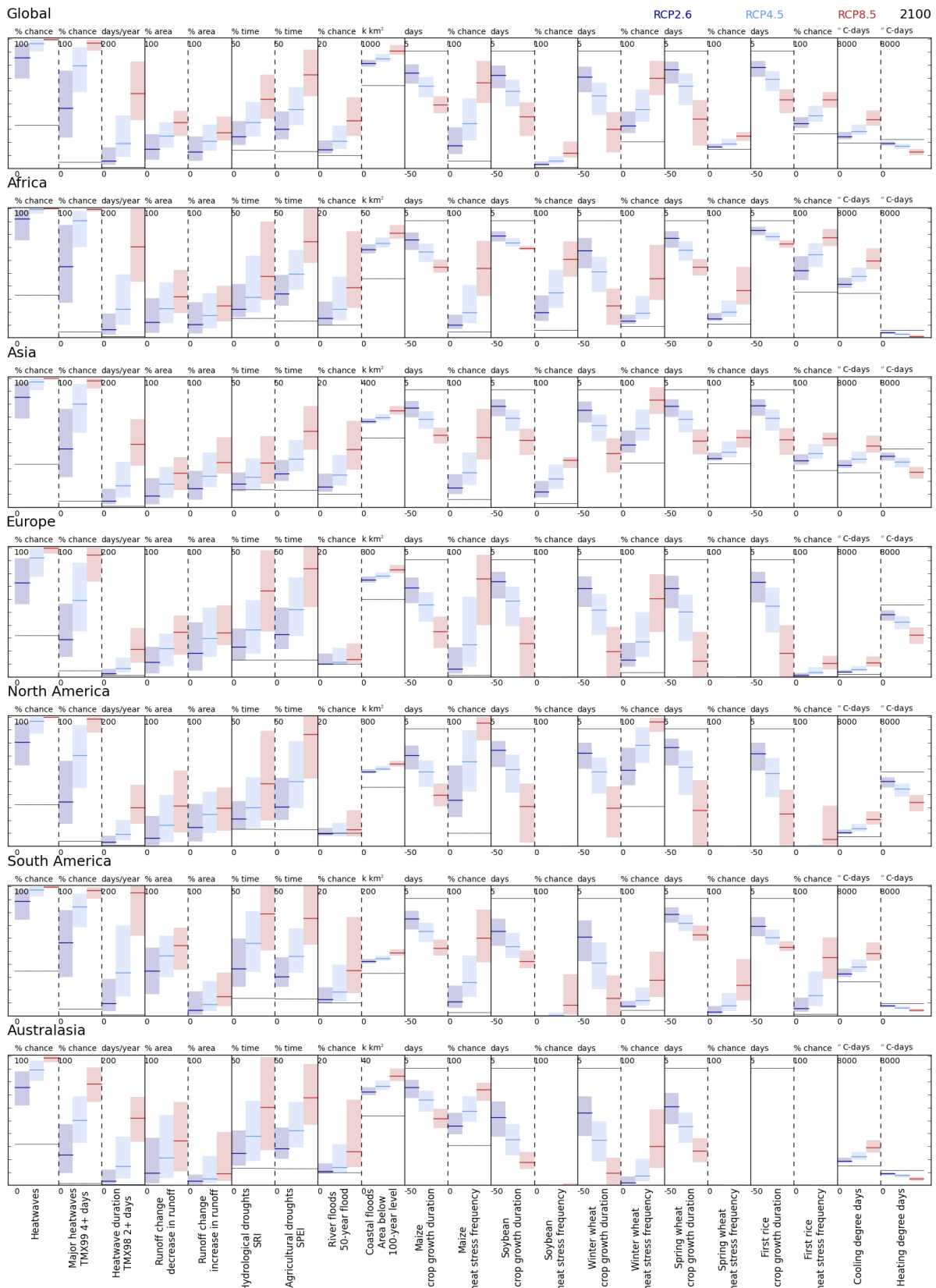
Figure 9: Overview of continental hazard indicators: 2100: RCP2.6, RCP4.5 and RCP8.5. The solid line represents the median and the shaded area the range between the 10th and 90th percentiles ("low" and "high" for the coastal indicator). The axis limits for each indicator are shown at the top of each column. The axis limits vary across continents.
the limits are the total regional continental cropland area, and for the river flood indicator the limits are the total regional river floodplain population.
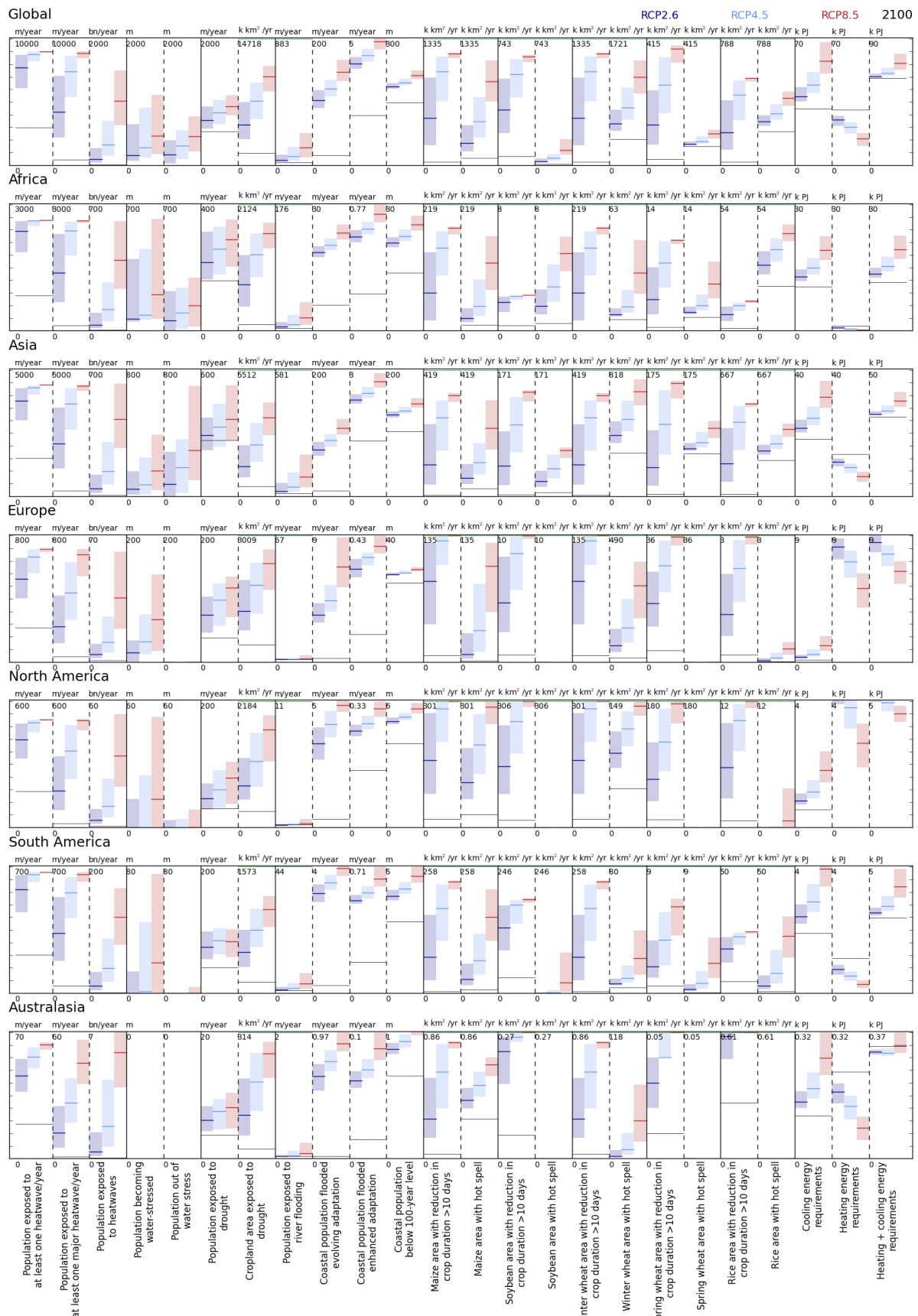
Figure 10: Overview of continental impact indicators: 2100: RCP2.6, RCP4.5 and RCP8.5. SSP2 socio-economic scenario for the population indicators. The solid line represents the median and the shaded area the range between the 10th and 90th percentiles ("low" and "high" for the coastal indicator). The axis limits for each indicator are shown at the top of each column. The axis limits vary across continents. For the cropland indicators the limits are the total regional continental cropland area, and for the river flood indicator the limits are the total regional river floodplain population.