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Climate hazard indices projections based on CORDEX-CORE, CMIP5 and CMIP6 ensemble.

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Abstract

The CORDEX-CORE initiative was developed with the aim of producing homogeneous regional climate model (RCM) projections over domains world wide. In its first phase, two RCMs were run at 0.22° resolution downscaling 3 global climate models (GCMs) from the CMIP5 program for 9 CORDEX domains and two climate scenarios, the RCP2.6 and RCP8.5. The CORDEX-CORE simulations along with the CMIP5 GCM ensemble and the most recently produced CMIP6 GCM ensemble are analyzed, with focus on several temperature, heat, wet and dry hazard indicators for present day and mid-century and far future time slices. The CORDEX-CORE ensemble shows a better performance than the driving GCMs for several hazard indices due to its higher spatial resolution. For the far future time slice the 3 ensembles project an increase in all temperature and heat indices analyzed under the RCP8.5 scenario. The largest increases are always shown by the CMIP6 ensemble, except for Tx>35 °C, for which the CORDEX-CORE projects higher warming. Extreme wet and flood prone maxima are projected to increase by the RCM ensemble over the la Plata basin in South America, the Congo basin in Africa, east North America, north east Europe, India and Indochina, regions where a better performance is obtained, whereas the GCM ensembles show small or negligible signals. Compound hazard hotspots based on heat, drought and wet indicators are detected in each continent worldwide in region like Central America, the Amazon, the Mediterranean, South Africa and Australia, where a linear relation is shown between the heatwave and drought change signal, and region like Arabian peninsula , the central and south east Africa region (SEAF), the north west America (NWN), south east Asia, India, China and central and northern European regions (WCE, NEU) where the same linear relation is found for extreme precipitation and HW increases. Although still limited, the CORDEX-CORE initiative was able to produce high resolution climate projections with almost global coverage and can provide an important resource for impact assessment and climate service activities.

1. Introduction

Increases in extreme climate events can result in an amplification of hazardous climate conditions for many societal sectors and natural ecosystems (IPCC AR5). The issue of the response of extreme events to global warming is one of the most important issues within the climate change debate. Indeed, many studies based on analyses of global and regional climate model (GCM and RCM, respectively) projections have shown that the frequency and intensity of hazardous meteoclimatic events will increase under global warming conditions (e.g. , Batibeniz et al 2020; Forzieri 2016, 2017, 2018; Russo et al, 2014, 2017, 2019; Giorgi et al. 2011, 2014, 2018, 2019, Schwingshackl et al, 2019).

A way to quantify and assess the impact of global warming on hazard events is by estimating the change of hazard indicators that have been developed to address the needs of different sectors. There is a huge variety of such indicators targeted to specific applications. They are mostly defined by using one or more essential climate variables (ECV) (Bojinski et al 2014) following standard definitions by the World meteorological Organization (WMO). Examples include the energy needed to warm or cool a certain environment (Spinoni et al, 2018; Lee et al., 2014: Jiang et al 2009; Rastogi et al, 2019); the human heat stress when exposed to a certain temperature and humidity (Russo et al, 2014, 2017, 2019; Im et al. 2017); the stress of a particular plant or cultivation due to the change of number of days in which the air temperature is favourable for plant growth (Fisher et al 2012; van Leeuwen et al., 2013); the impact on energy production due to reduced snow amount or river runoff (Kao et al, 2015; Naz et al, 2016); the probability of occurrence of a certain hazardous phenomenon such as river or pluvial flooding and drought (Forzieri, 2014; Arnell, 2013, 2014, 2016; Carrão et al, 2018; Dai et al., 2013; Gudmundsson et al, 2016; Jenkins et al., 2015).

Several studies used one or more such indicators (Mora et al, 2017, 2018) to assess, for example, the impact of climate change on the frequency and severity of droughts (Spinoni 2015, 2016; Touma et al 2015), floods (Alfieri, 2017; Forzieri, 2016, 2017, 2018; Arnell, 2013, 2014, 2016) , heatwaves (Diffenbaugh and Ashfaq, 2010; Russo et al., 2014, 2017, 2019), heat stress (Im et al. 2020; Rastogi et al., 2020); agriculture (Ruosteenoja et al. . 2016), aggregate climate extremes (Batibeniz et al 2020) etc. In order to assess changes in such indicators there is the need to have good quality observations, an adequate number of climate model simulations to characterize uncertainties and sufficiently high resolution to provide tailored regional to local climate information for impact assessment.

RCMs can be particularly effective tools to provide such information, however to date the availability of RCM-based information has been quite heterogeneous across different regions (e.g. Giorgi 2019), so that a global view of changes in different hazards based on RCM projections has not been possible. A new initiative was recently launched within the framework of the Coordinated Regional Downscaling Experiment (CORDEX, Giorgi et al. 2009), called CORDEX-CORE (Gutowski et al. 2016) whose purpose is to provide a homogeneous ensemble of high resolution (25 km grid spacing) projections for regions worldwide.

Two RCM systems have been used so far to complete the first sets of coordinated CORDEX-CORE simulations over 10 CORDEX domains (Remedio et al., 2019; Teichman et al., 2020), and this dataset thus provides an unprecedented resource to assess the issue of hazards under climate change in a global context. The companion paper Teichman et al. (2020) has shown that the CORDEX-CORE ensemble is able to describe the mean temporal and spatial characteristics of the temperature and precipitation change signal of the AR5-GCM ensemble over most regions across the world. The purpose of this paper is then to provide an almost global analysis of the impact of global warming on a range of hazard indicators based on the CORDEX-CORE ensemble, which includes two RCMs driven by three GCMs for two GHG concentration scenarios (RCP2.6 and RCP8.5, Moss et al. 2010). Results from the CORDEX-CORE experiments are also compared with analogous calculations based on the CMIP5 (Taylor et al., 2012) and a set of available CMIP6 (Eyring et al., 2016) GCM datasets as well as earlier, coarser resolution (~50 km) CORDEX projections. This enables us to produce the most updated projection maps for each region considered and to put the CORDEX-CORE projections within the context of previous and new available information . Our data and methods are described in section 2, while our results are presented in section 3 and conclusions in section 4.

2. Methods and data

2.1 Hazard indices

The indices we analyze here to quantify a given hazard are commonly used in the literature and are summarized in Table 1, which includes for each index a reference to a paper and the sector for which it is mostly relevant. The definition of each index is the following:

- **Growing degree-days (GDD)**: the cumulative number of degrees above the threshold of 5 degrees, during a given growing period. The growing season is considered from April to September for the Northern Hemisphere and from October to March in the Southern Hemisphere.
- **TX35**: the number of days with maximum daily temperature above 35 degrees.
- **99P**: the 99th percentile of precipitation
- **Drought Frequency (DF)**: the total number of drought events computed using the Standardized Precipitation Index, here considered for a time window of 6 months (SPI-6): a drought starts in the month when SPI-6 falls below −1 and it ends when SPI-6 returns to positive values for at least two consecutive months, as in Spinoni et al. (2014).
- **Peak discharge (Q100):** the peak discharge corresponding to the 100-year return period (Alfieri et al 2015).
- **Cooling Degree Day (CDD)**: a measure of the energy consumption for cooling in hot environments. It is based on the daily mean, maximum and minimum temperature and it

is computed as in Spinoni et al. (2015), except that here the sum is cumulated over the whole year (instead of 6 months) so that it applies to both Hemispheres.

- **Heating Degree Day (HDD)**: similarly to the CDD, it is the energy demand for heating and it is computed as in Spinoni et al. (2015), but for the whole year.
- **Heat waves (HW)**: the number of heat waves longer or equal to 6 days. A heat wave occurs when the daily maximum temperature exceeds the threshold of 5 degrees above the mean maximum temperature of a 5-day window centered on each calendar day of a given climate reference period (here 1995-2014).
- **Number of Dry Days (NDD)**: a day is considered to be dry when precipitation is lower than 1 mm/day.

2.2 Model data

The model data used in this work were produced from the CORDEX-CORE experiments (Teichman et al, 2020), as summarized in Table 2. The data are obtained from two RCMs (RegCM and REMO) projections at 0.22 degree resolution using as driving boundary conditions three GCMs (medium, low and high climate sensitivity) for two scenarios RCP2.6 and RCP8.5 and for 9 CORDEX domains. Results from our CORDEX-CORE runs are compared with corresponding ones from the CMIP5 ensemble taking for each domain only the GCMs that are driving the RCMs in that domain and counting each GCM only once. Also, available CMIP6 projections, the whole CMIP5 ensemble and simulations from the previous CORDEX phase in which the models are run with a grid spacing of 0.44 degrees (~ 50 km) are used for comparison. All the CORDEX-CORE simulations are interpolated onto a common 0.22 degree global grid, while a 2-degree and 1-degree grids are used for the CMIP5 and CMIP6 ensembles, respectively. The CORDEX 0.44 simulations are interpolated onto a common 0.44 degree grid.

2.3 Observations

A number of observation datasets are used to assess the models: the CPC global dataset at 0.5 degree resolution (https://www.esrl.noaa.gov/psd/data/gridded/), which includes both temperature and precipitation; and the regional specific datasets IMD (Rajeevan et al., 2006) for India (WAS CORDEX domain, 1.0 degree resolution); LIVNEH (Livneh et al. , 2013) for North and Central America (NAM and CAM CORDEX domains; 6km resolution); E-OBS (Haylock et al. 2008) for Europe (EUR CORDEX domain; 0.25 degree resolution); CN05.1 (Wu & Gao, 2013) for China (EAS CORDEX domain; 0.25 degree resolution). All the regional datasets include both temperature and precipitation at daily temporal resolution.

2.4 Signal to noise

For each spatial change plot a signal to noise analysis is performed to test the robustness of the results. The ensemble mean change of each set of models is compared to the standard deviation computed among the changes of each ensemble member. If the absolute value of the ratio between the mean change and the standard deviation is greater than 1, then the mean change can be considered to be significantly different from the noise associated with the inter model variability. The areas where this condition is not verified are shaded in the spatial plots (see Figure 10-11 and Figure S1-S6).

2.5 Scatter plots

The scatter plots of the change of three of the most significant indices are analyzed, including HW against P99, HW against DF and P99 against DF. The analysis is carried out for a subset of the IPCC regions (Iturbide et al., 2020), i.e. those where the change of these indices appears to be maximum and the consensus among the regional and global ensembles is the strongest. . In the scatter plots, the single model realizations are reported for each ensemble and for the mid and far future time slices, while the linear fit is computed for each ensemble. .

3. Results

Here we present results for each of the CORDEX-CORE domains (Figure 1, top panel) based on the CORDEX-CORE ensemble, CMIP5 driving GCMs and available CMIP6 models as reported in Table 2. For the model validation, we compare the ensemble averages with corresponding observations using both the global and the regional datasets when available, while for the projections we show changes for the far future time slice and RCP8.5 (SSP585 for CMIP6) scenario. The corresponding plots for the mid future RCP8.5 and RCP2.6 (SSP126 for CMIP6) mid and far future are reported in the supplementary information (Figure S1- S6). The areas for which each CORDEX domain dataset is used are highlighted in Figure1 as square boxes, and we use only one CORDEX domain per area.

For a subset of hazard indicators, such as heatwave, drought frequency and P99, the CORDEX CORE ensemble results are also compared to the CORDEX 0.44 ensemble if available on the ESGF archive for a given region and with the whole CMIP5 ensemble. Regional averages are carried out for land points in the subregions defined in Iturbide et al., (2020) and shown in Figure 1 (bottom panel). In this case, the intercomparison for the different ensembles is carried out using whiskers and scatter plots, which provide information on the change signal and the associated uncertainty. The scatter plots are produced to assess for each region the compounded “exposure” to heat and drought hazard, heat and extreme precipitation and drought and extreme precipitation.

3.1 Hazard indices validation

Temperature and Heat indicators

Heatwave (HW) occurrence is a critical factor for human health, city environments, ecosystems and energy production. Figure 2 shows the ensemble average for the driving CMIP5, CORDEX-CORE and CMIP6 ensembles. The overall distribution of the number of HW per year is well represented by all ensembles, with a slight overestimation in the Northern South American Continent and central Africa (see Table 3). The CMIP6 ensemble shows a small overestimation of the number of HW in Australia (see Table 3) . but generally both the bias and root mean square error (RMSE) values are low and the spatial correlation is high.

Figure 3 shows the number of days with maximum temperature above 35 degrees, a threshold important for human health and agriculture. All the model ensembles overestimate the number of days above 35 degrees in South America and in central Africa (except for CMIP5) (see Table 3). In the central US the CORDEX-CORE slightly underestimates the number of hot days, while an opposite behaviour is evident from both the CMIP5 and CMIP6 ensembles. Australia's north-south negative gradient and intensity is well represented by all models. As a general behaviour, Table 3 shows that the CORDEX-CORE ensemble is characterized by a reduced bias in the extratropics and higher biases in the tropics compared to the GCM ensembles.

Another quantity relevant for crop production is the growing degree-days, for whichwe use a threshold of 5 degrees during the primary growing season (over the April-September months for the Northern Hemisphere and over the October-March months for the Southern Hemisphere) (Ruosteenoja et al. , 2016). In this case (Figure 4) all ensembles underestimate the maximum number of degrees per year over the Amazon basin, central Africa and the Tibetan plateau, but they all show a good performance over Central and North America, Australia, South East and South Asia, with a quite high spatial correlation compared to observations (Table 3).

A typical set of indices used for energy demand is the cooling degree days (CDD) and the heating degree days (HDD), which quantify the amount of energy needed for air conditioning or space heating, respectively. Figures 5 and 6 show the observations and the model ensemble averages for the cooling and heating degree days, respectively. The CORDEX-CORE ensemble shows a much more detailed spatial structure of CDD compared to the GCMs, and it is closer to the observations, as manifested from the higher correlation and predominantly reduced biases in Table 3. This is evident in particular over South America in the Amazon basin, North and Central America, the African continent, the Indian peninsula, China and Indochina. The GCMs show a tendency to underestimate the maximum values of CDD over these regions. For the HDD, all ensembles validate quite well in all domains, with few locations such as the Rocky Mountains in the US where a more detailed spatial structure with higher spatial correlation with observation is evident for the regional ensemble (Table 3).

Wet and Dry indicators

Figure 7 shows the spatial distribution of the ensemble average RCM and GCM 99th percentile of precipitation, P99, which is a proxy for pluvial flooding events, flash floods and storm surges along coastal areas. In contrast from the temperature results, the three ensembles show substantially different performances over various domains. In the South America continent, two regional maxima are found in observations, one in the northwestern part of the Amazon Basin (NSA) and one over the la Plata basin (SES). The CORDEX-CORE ensemble reproduces the location of the La Plata basin maximum, while it displaces the Amazon maximum slightly to the west compared to observations, with some underestimation in the eastern side of the basin. The CMIP5 ensemble substantially underestimates the P99 throughout the continent and shows a misrepresentation of the spatial distribution. The CMIP6 ensemble also underestimates the two maxima, but it improves their spatial distribution compared to the CMIP5.

Over east North America (ENA) and south central America (SCA), observations show a maximum of 40-60 mm/day, which is spatially well captured by the CORDEX-CORE ensemble , although the intensity is overestimated. The CMIP5 ensemble again underestimates the intensity of the maxima, and does not capture their location. The CMIP6 ensemble exhibits improvements over the CMIP5, although it still underestimates the magnitude of the maxima. For the African continent, the RCM ensemble has the most realistic spatial distribution compared with observations with a good spatial correlation but some overestimation (Table 3), and with a good representation of maxima over the western African coast (overestimated), the Guinea coast (slightly underestimated), the central African coast (slightly underestimated) and the southern east African coast and Madagascar. The CMIP5 ensemble has a strongly damped signal, with an underestimation of intensity and spatial extent. The CMIP6 shows a higher intensity with a clear overestimation of the western African and Guinea maxima and an unrealistic strong maximum inland over the Congo basin. Both the southeastern Africa and the Madagascar maxima are underestimated.

For India, China and the Indochina peninsula, behaviour of the three ensembles is similar to that for the previous regions, with the CORDEX-CORE having a more realistic displacement of precipitation maxima and showing better skill compared to the regional observation (SAS) and CMIP5 and CMIP6 both underestimating and/or misplacing the maxima of the signals (Table 3). The same is true for the European Alps and Scandinavia mountains. All these results bring us to the conclusion that the higher resolution of the RCMs plays an important role in the better representation of the extreme precipitation signal for cases of complex topography and local land surface feedback mechanisms. This may also be the reason why the CMIP6 ensemble, which has a higher resolution compared to CMIP5, is occasionally closer to the CORDEX-CORE ensemble and shows higher intensities and better spatial correlations (Table 3).

As dry indices, we consider the number of dry days and the drought index based on the SPI-6 (see methods section). Looking at the distribution of the number of dry days (Figure 8), all ensembles exhibit an overall underestimation, with only the South American continent showing a good spatial representation by the models and the correct number of dry days per year. The Central Africa Congo basin seems to be a region where all the models substantially underestimate the number of dry days, with the global models having similar errors over the Tibetan plateau (TIB), northern Europe (NEU), Alaska (NWN) and north eastern Canada (NEN). The CORDEX-CORE ensemble has a lower underestimation over the Tibetan plateau, northern Europe, Alaska and north eastern Canada, while it slightly overestimates the number of dry days for the rest of the north American regions (Table 3).

The explanation of the tendency to underestimate the number of dry days is the well known problem of the model drizzle phenomenon, for which both RCMs and GCMs tend to have background light rain events throughout the year, with too few episodes of zero rain.

The spatial distribution of the number of drought events per decade based on the SPI-6 anomaly index (Figure 9) shows a general overestimation of 1 event per decade in all model ensembles. The spatial distribution of drought events is similar to the observed and consistent with Spinoni et at (2019), where the analysis is done for a different reference period and only for the CORDEX 0.44 ensemble. The CORDEX-CORE ensemble reveals greater spatial detail clearly due to the higher model resolution, especially over North America, Europe, Asia and Australasia. The African continent shows results more comparable between the CORDEX-

CORE and CMIP6 ensembles, with CMIP5 clearly unable to resolve the minimum over the Sahara desert and the two maxima over the Congo basin and South Africa. In all regions the bias is of ~1 event and the correlation on average 0.5 for all ensembles (see Table 3).

3.2 Projections of hazard indices

In this section, we assess the climate change projections for all the 3 ensembles in mid and far century time slices and the two scenarios. However, for the spatial fields, results are only shown for the far future time slice of the RCP8.5 scenario (Figure 10-11), while for the other scenarios and time slices they are reported in the supplementary material (Figures S1-S6). In Tables 4 and 5, the area average change values over land points only is reported for all subregions as defined in Iturbide et al., (2020), the far future time slice (2080-2099) and the RCP8.5 scenario. Figure 12 reports the box plots for three indicators (HW, DF and P99), in 9 of the CORDEX domains (Figure 1) and for the 43 of the regions from Iturbide et al., (2020), showing for each of the 3 ensembles, plus the CORDEX 0.44 (where available) ensemble and the whole CMIP5 ensemble, the median change value for the mid and far future and for RCP8.5 and RCP2.6 scenarios . The plot also shows the 25th and 75th percentile interval with the colored bar and the 5hth and 95th interval with the black bars.

Temperature and Heat indicators

Figure 10 shows end of century, RCP8.5 change projections for the temperature and heat indicators. Panels a,b,c refer to the number of HWs per year in both GCM ensembles and the regional ensemble. A common spatial structure to all the 3 ensembles is found, with a latitudinal displacement in HWs and a minimum change signal along the tropical belt (values between 6 and 9 events per year for CORDEX-CORE and CMIP6 and between 4 and 6 events/year for CMIP5). Two maxima are located at 30 degrees latitude North and South, with values from 6 to 10 events in the northern hemisphere for CMIP5 and CORDEX-CORE over north central America (NCA), North Africa (SAH), the Mediterranean (MED) and central Asia and 8 to 12 in the CMIP6 ensemble (see Table 4 and Figure 12).

For the southern hemisphere, the maxima are higher and are located in the SAM (ranging between 7 and 12 per year for all the ensembles) and SES regions (ranging between 4 to 10 HW per year; Figure 12), South Africa and Australia. The CMIP6 ensemble projects between 3 and 11 (ESAF) and 7 to 11 (WSAF) more events per year with the same spread as for the whole CMIP5 ensemble. The CORDEX-CORE ensemble, however, has a lower median value (Figure 12). For Australia, the CORDEX-CORE, CMIP6 and the whole CMIP5 ensemble show similar spread values, with a median of up to 7-10 HW per year and with the CORDEX-CORE spanning a larger range of uncertainty compared to the driving CMIP5 GCMs. In South America, all the 5 ensembles show similar median value projections for all sub regions, with the CORDEX-CORE having the smallest range of uncertainty. The change in the number of days per year with Tmax >35 (panels d, e, f) is maximum over the African continent and over north and central South America. These two maxima are projected to see an increase of more than 100 days per year in the CORDEX-CORE and the spatial extension of the regional ensemble is higher in South America (SAM) and much broader in Africa than in the GCM ensembles. Other maxima are located in Australia and India, with increases between 50 and 100 days per year and with higher increases shown by the RCM ensemble. Over land areas around the Gulf of Mexico and in the Mediterranean basin, the CMIP6 ensemble shows the largest increases. Changes in Tmax>35 are significant everywhere except over the northernmost latitudes in all ensembles, the Tibetan Plateau in CORDEX-CORE and CMIP6, and Germany and SEA in CMIP5.

The GDD projections (panels g,h,i) have the same spatial structure as observed for the HW index, with two quasi symmetrical maxima and CMIP6 projecting the largest signal.The GDD increases by more than 50 degree days per year in central Europe (WCE), the Mediterranean (MED), north Africa (SAH), east Europe Siberia (ESB), Central Asia (WCA, TIB) and the whole US in the northern hemisphere. In the southern hemisphere, maxima are in central and southern South America, South Africa and Australia. The increase of degree days remains below 50 for the CORDEX-CORE, while the CMIP5 ensemble has intermediate results (see Table 4).

The last two heat indices we analyze are the CDD (panel j,k,l) and HDD (panel m,n,o), which show a symmetrical structure, since they represent the energy demand for cooling, which is maximum at the equator and the energy demand for space heating, which is maximum at high latitudes.

The CDD shows a maximum increase of above 70 degrees per year in the CMIP6 over northern South-America (NSA), Central South-America (SAM) and northeast South-America (NES), Africa, South Asia (SAS) and Southeast Asia (SEA), and northern Australia (NAU). These projections are closely followed by CORDEX-CORE and drop to values between 50 and 70 degrees in CMIP5. Areas with an increase between 50 and 60 degrees per year are highlighted in the Gulf of Mexico (SCA), Mediterranean basin (MED) and west central Asia (WCA) for the CMIP6. The same regions do not cross the 50 degree threshold in other two ensembles (see Table 4).

The HDD decreases by up to -50 degrees per year above the 40 N degree latitude, with decreases of up to -50% over Europe, US and China and -100% over the Mediterranean and Mexico. The minimum values occur in the CMIP6 models, in addition to a more southward extent of the area of minimum. The CORDEX-CORE and CMIP5 show slightly higher values, with CMIP5 being the ensemble with the smallest changes.In the southern hemisphere changes are limited between -20 and -40 degree per year, corresponding to less than -50%, over South Africa, south of Australia and southern South America

Wet and Dry indicators

Figure 11 shows the change maps for the wet and dry indices in the far future RCP8.5 and the 3 ensembles. Similar maps for the mid future RCP8.5 and the mid and far future RCP2.6 are shown in the supplementary material (Figures S2, S4, S6).

Panels *a, b* and *c* refer to P99 for the period 2080-2099. There are several regions of precipitation increase highlighted in the map but not all of them are uniformly shown by all the ensembles. For example, the CORDEX-CORE ensemble shows an increase between 10% and 20% in the la Plata basin in southeast South America (SES). A similar situation is seen in Eastern North America (ENA), Central North America (CNA) and central Africa. This signal is much weaker in the CMIP5 ensemble and almost non-existent in the CMIP6, which has the largest inter-model spread (Figure 12). Notably, these are all regions where the CORDEX-CORE ensemble shows better validation than the GCM ensembles. Other regions with extreme precipitation increases between 20% and 30% are northeast Canada (NEN), northwest North America (NWN), India, Indochina and weastern China, with consensus on the direction of change but large spread in the GCM ensembles (Figure 12). The CORDEX-CORE shows a noticeable increase in wet extremes over northeast Europe (NEU), and this is also confirmed by the analysis of Coppola et al., (2020). The GCM ensembles project an increase of more than 60% over the Sahara desert and China (CMIP5 only), which is not present in the RCM ensemble (see Table 5).

The change in runoff corresponding to the 100 years return period, as defined in Alfieri et al (2015), is shown in Figure 11 panels *d, e* and *f*. This quantity is used in the literature as a proxy for flood hazards, and a positive change corresponds to a shorter return period, i.e. a more frequent flood prone environment. Mostly significant changes greater than 100% are projected by the CORDEX-CORE ensemble over the La Plata basin (SES), central Africa (CAF), and India (SAS), as for the change in P99, but also in other regions, such as northern Australia (NAU), central eastern Europe (WCE), the China (EAS) (changes values between 50% and 100%) and the Sahara. The same signal is much weaker (between 10% and 50%) and almost insignificant in both GCM ensembles, with a much flatter spatial distribution in the CMIP5 compared to the CMIP6, but quite far from the spatial detail found in the RCM projections (see Table 5).

The dry indicators NDD and DF show in general a much stronger signal with a smaller spread for the CORDEX-CORE ensemble in several regions, such as north and south central America (NCA and SCA) and the Caribbean (CAR), northern South America (NSA), south western Africa (WSAF), the Mediterranen basin (all regions showing a change above 4 droughts per decade), south and eastern Australia (3 droughts more per decade). In regions such as India (SAS) and SouthEast Asia (SEA), the CORDEX-CORE shows between 1 and 2 additional droughts per decade with a large spread .

The GCM ensembles show a weaker change signal in these regions, with an increase of only 1 or 2 events in Australia and South East Asia, but there is a model consensus on the direction of the change (Figure 12). Quite a different behaviour is shown for the Indian region, where the CMIP6 has a negligible or even negative signal, while the CMIP5 has positive change signal over northern India (see Table 5).

3.3 Compounded hazards hot spots.

From the results reported above, it is evident how few regions show clear and strong change signals in more than one hazard indicator. Here, a selection of regions is made where compounded hazard signals are projected by means of one heat indicator (e.g. HW) and one dry (e.g. DF) or wet (e.g. P99) indicator (see Figure 1) and results are analyzed to show which is the model agreement for this signal.

In Figure 13, scatter plots of the change of HW indicator against DF indicator, i.e. P99 versus HW and P99 versus DF, are reported for some of those regions and the same model ensembles.

For the Central America (CAM) CORDEX domain, three subregions are analysed, NCA, CAR and SCA. In the NCA region a linear relation is observed between HW and DF changes, with a far future median HW change of about 6 (except for a value of 8 in CMIP6). The number of droughts is projected to increase by 2 events per year in both CORDEX regional ensembles, with CMIP5 dropping to only 1 and CMIP6 having a median value of 4 with the highest spread. For the Caribbean region, all the ensembles but the CMIP5 driving GCM ensemble show a correlation between HW and DF with a median value between 1 and 3 HW increase per year, For the SCA region a linear relation is shown by the two indices with up to 7 more HW per year by the end of century and between 23 and 5 more drought events per year (only the CMIP5 driving ensemble showing less than 1).

All the 3 South American subregions (NES, NSA and SAM) have quite a clear correlation between the HW and DF increases. Interesting to notice is the bimodal behaviour of the 5 ensembles for the change in DF. The CORDEX-CORE and CMIP6 project a higher increase in droughts of 4, 5 and 4.5 for NES, NSA and SAM, respectively with CMIP6 having an almost 3 times larger spread. For the HW, CMIP6 and CORDEX 0.44 project the maximum change everywhere, with median values above 6 for NES and NSA and above 10 (8 for CMIP6) for SAM. The CORDEX-CORE ensemble projects the lowest median increase of 5, 6 and 7 HW per year for NES, NSA and SAM respectively. For NES region also P99 and DF show a correlation and P99 and HW with all model ensembles showing a precipitation increase between 10% and 20%, therefore this region will experience three compound hazard increases in the near and far future for the RCP8.5 scenario.

The Mediterranean region shows a quite clear correlation between change of HW and DF. It has to be reminded that for this region a bigger ensemble of models is available and a more in depth analysis is reported in the papers by Vautard et al., 2020 and Coppola et al, 2020.

All the models ensemble agree in projecting by the end of the century a median increase of HW events of 8, 7, and 9 by CORDEX-CORE, CMIP5 driving and both CMIP6 and CMIP5 all, and a DF increase of more than 4 events per decade for all except CMIP5 driving (2) and CORDEX 44 (3).

To remain in Europe both the central (WCE) and northern (NEU) European regions show a quite good linear relation between P99 and HW indicators. All the ensembles agree on a precipitation increase between 15% and 20% with CORDEX-CORE being on the upper end of the distribution and HW increase. There is quite a good agreement among the 5 ensembles for both the direction of changes and the intensities.

In the African CORDEX domain 5 subregions are shown that are ARP, WAF, ESAF, WSAF and MDG where both HW and DF are increasing.

For the Arabian peninsula (ARP) the models in the scatter plot are all over the place, showing a much higher consensus for HW increase between 7 and 10 events more per year for the far future time slice and quite an uncertain signal for DF projections. Only CORDEX-CORE is projecting an increase of 2 more droughts per year and showing a linear relation with the HW increase. In this region also the extreme precipitation is increasing but with very high spread for all the ensembles and among the ensembles but still making the area prone to 3 different hazards increases.

Western Africa has a similar behaviour to the Arabian peninsula with quite a mix DF projections from all ensembles except that CORDEX-CORE (2.7 increase for far century) and a quite lower intermodel consensus on the strength of HW increase spanning from values of 1 to 9 more events per year with each ensemble having quite a big spread.

South east (ESAF) and south west Africa (WSAF) are the two regions with the highest correlation between HW and DF increase with CORDEX-CORE and CMIP6 being at the upper end of the distribution but also with the larger spread in case of HW projections.

In Madagascar all models agree on a HW increase between 4 and 6 events per year and DF increase between 2 and 4 events per year.

Central Africa (CAF) and south east Africa (SEAF) regions both show a linear relation between P99 and HW increase. In both regions there is consensus among the ensembles on an extreme precipitation increase between 10% and 20% and an increase of heat wave events between 3 and 9 (CAF) and 3 and 8 (SEAF) with high inter model spread.

The Indian region (SAS), the south east Asia region (SEA), the north America western region (NWN), the eastern north America region (ENA) and the east Asia (EAS) region all show a linear relation between the P99 and the HW index. For the SAS region the 5 ensembles agree on a HW increase between 5 and 7 events per year; the model ensemble agree on the increase of extreme precipitation, but the intensity of the change is quite different among the models and the spread is high. In south east Asia (SEA) the model agreement on 20% extreme precipitation increase and on the increase of HW events between 2 and 4 events more per year is high as it is in NWN where all models agree on 20%-30% P99 increase and 6 events more of HW per year. In EAS and EAS model agreement is high in both projection of P99 and HW.

The last region relevant for compound hazard events is the Australasia CORDEX region where three subregions are examined: the north , central, south and eastern part (NAU, CAU, SAU and EAU) respectively. In all the three subregions the correlation between HW and DF changes is quite evident. The CORDEX-CORE projects the higher median increase of DF followed by CORDEX 0.44, with above 2 events per decade (NAU, CAU and EAU) and 3.5 (SAU) by the end of century, with the highest spread (except that for CAU where CMIP5 is higher) and the lowest spread for CORDEX 0.44. CMIP5 and CMIP6 have roughly 1 event less per decade. For HW changes CORDEX-CORE and CMIP6 project systematically higher changes values compared to CMIP5 (drivers and all) and CORDEX 0.44. The range of change is 4-8 and 7-11 for NAU and CAU and 3-5 for SAU and 4-9 for EAU .

3.4 Discussion and conclusions

In this paper a global assessment of projections in extremes and climate hazard indices is discussed based on the most up to date available ensembles of global and regional climate model projections.

Under the umbrella of the CORDEX project, a new CORDEX-CORE regional climate projection ensemble at 0.22 degrees resolution was produced with the aim of creating an initial homogeneous ensemble covering all the main populated regions of the world in order to allow the assessment of future changes in mean climate, hazards and extremes. This CORDEX-CORE ensemble, together with the CMIP5 driving GCM ensemble, the whole CMIP5 ensemble, the CORDEX 44 ensemble and the new CMIP6 ensemble were used to assess projections of heat and wet and dry hazard indices across the globe.

All the indices were validated against observations and the CORDEX-CORE showed a better performance in several regions and for several indices, both in terms of intensity and spatial displacement. This is the case for the HDD index and the DF drought index, where the regional ensemble shows a more realistic and detailed spatial displacement. Another example is the P99 extreme precipitation index, where the CORDEX-CORE ensemble shows a very realistic representation of precipitation intensity and spatial distribution,

All the temperature and heat indices are projected to increase except, as expected, for the HDD. Some of the indices, e.g. HW, GDD, and HDD, show a latitudinal symmetrical structure around the equator with maxima in the range 30 to 60 latitude north and -3- to -60 latitude

south. Others, e.g. Tx>35 and GDD show a maximum increase in the tropics and lower values in the mid latitudes. It is quite evident from Figure 10 and Table 3 that the CMIP6 consistently exhibits the highest values of projected change in heat indices (with the exception of T>35), likely due to the higher equilibrium climate sensitivity of these models (Foster et al, 2019). For all the other indices, CORDEX-CORE predominantly shows stronger increases compared to CMIP5 and finer spatial details connected with the improved representation of topography.
The differences in projections among the GCM and RCM ensembles are more evident for the wet and dry indicators. For example, the maxima in extreme precipitation changes over the la Plata basin, the Congo basin, North western US and north east Europe are only found in the CORDEX-CORE ensemble, which is also the one validating best for these regions although sometimes overestimating. The CORDEX-CORE ensemble also shows stronger drying over the Amazon basin, Mexico, South Africa and the Mediterranean basin.

Compounded hazard events can lead to significant impact to life and society, therefore, we attempted to identify compound hazard hotspots based on one heat, drought and wet indicator and there is no continent that has no regions affected by at least one compound event. Several regions in the CORDEX Central and South America, Africa, Australia, Europe and South Asia domains show a correlation between heatwave change and number of droughts per decade. Among those regions, the most notable include the Mexican (NSA), Amazon (NES, NSA and SAM), Mediterranean, Southern Africa ESAF and WSAF, Indian peninsula (SAS) and the 4 Australia regions (NAU, CAU SAU and EAU). Other examples are regions where both extreme precipitation and heat waves increase, including the Arabian peninsula (ARP), the central (CAF) and south east Africa region (SEAF), the north west America (NWN), south east Asia and central and northern European regions (WCE, NEU). In some regions, all three compounded events exhibit an increasing trend, most noticeably the north east South America region.

The newly developed CORDEX-CORE and CMIP6 datasets, along with the already available CMIP5 and CORDEX 0.44 ones, represent a formidable resource both to assess the model behavior and the characteristics of projections under different warming scenarios and to use the data for impact assessment studies and climate service applications. Here we limited our analysis to standard indices of extremes and hazards, but companion papers in this special issue and future work will investigate more process based phenomena.

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Figure

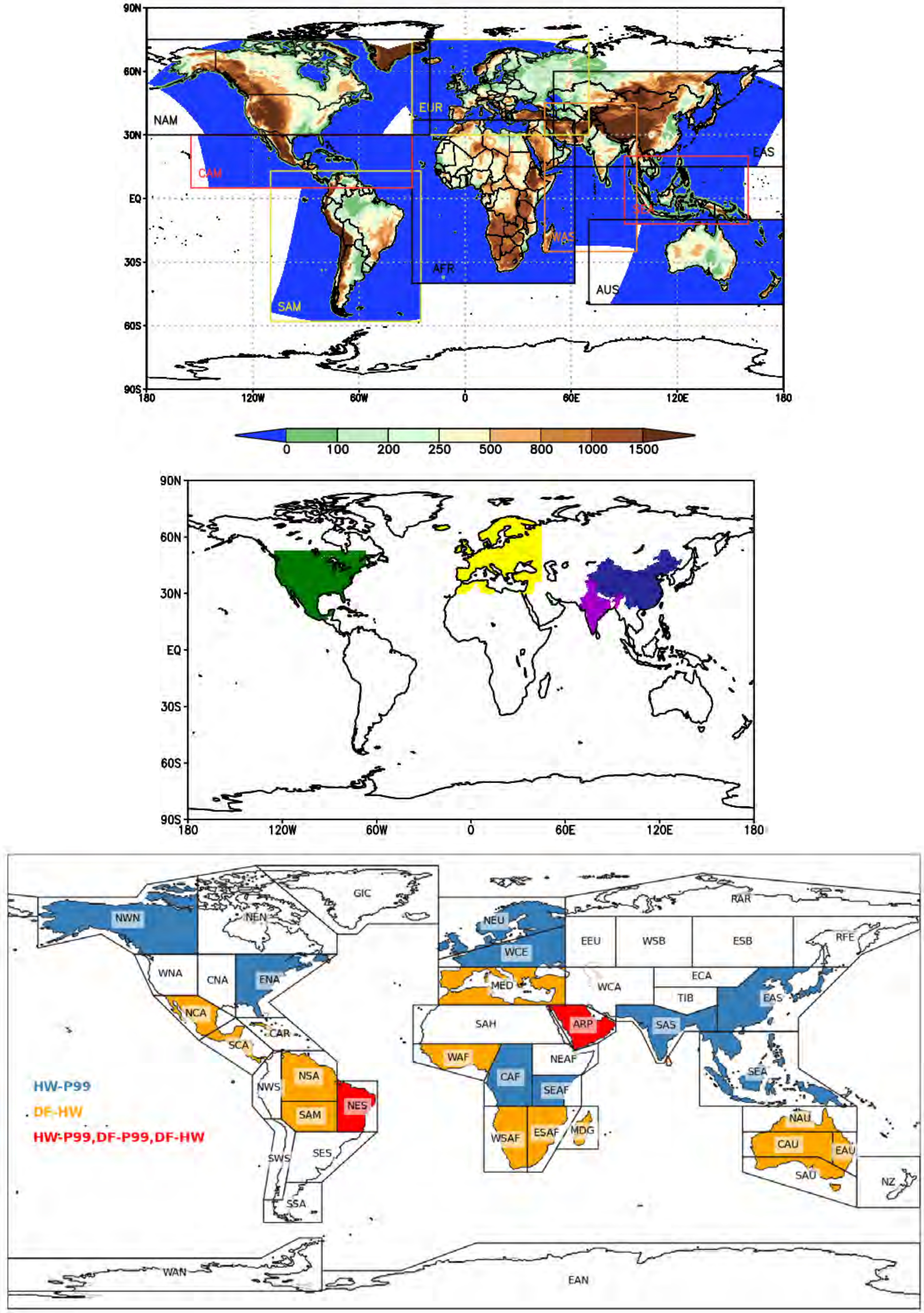


Fig.1: The CORDEX-CORE Regions (top panel); Regional Observations location (central panel); the IPCC Regions as in Iturbide et al. (2020) (bottom panel): those involved in the scatter analysis are colored and each colors indicate the indices combination analyzed for a specific region.

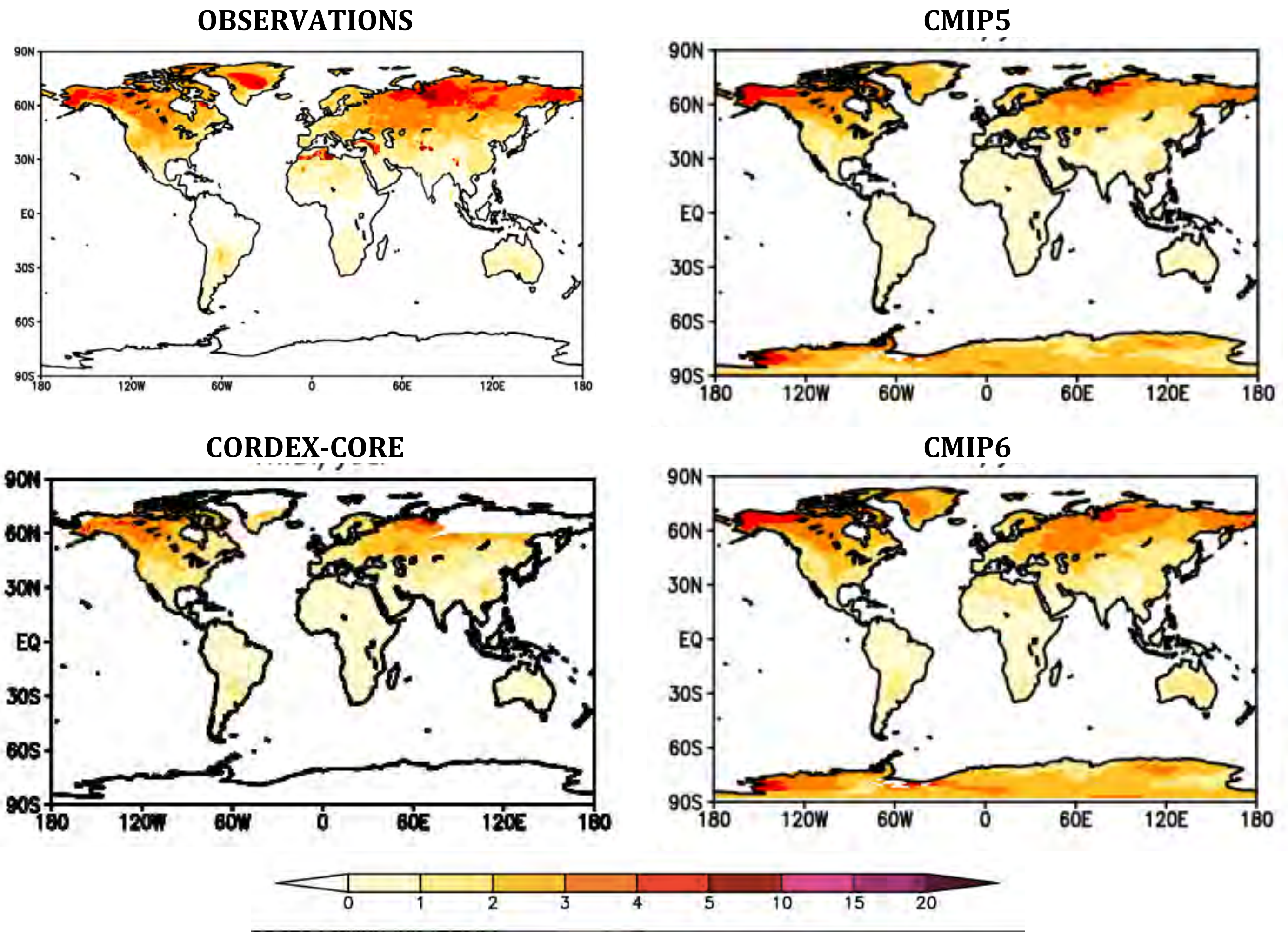


Fig. 2: The number of heat waves (HWDI) per year. Upper panel on the left: the LIVNEH dataset over North and Central America; E_OBS over Europe; IMD over India; CN05.1 over China and the CPC_Global Dataset elsewhere. See Fig.1 (central panel) for the exact observations location.
Other panels: CMIP5 ensemble (upper panel on the right), CORDEX-CORE ensemble (lower panel on the left) and CMIP6 ensemble (lower panel on the right). Units are N. of heat waves / year.

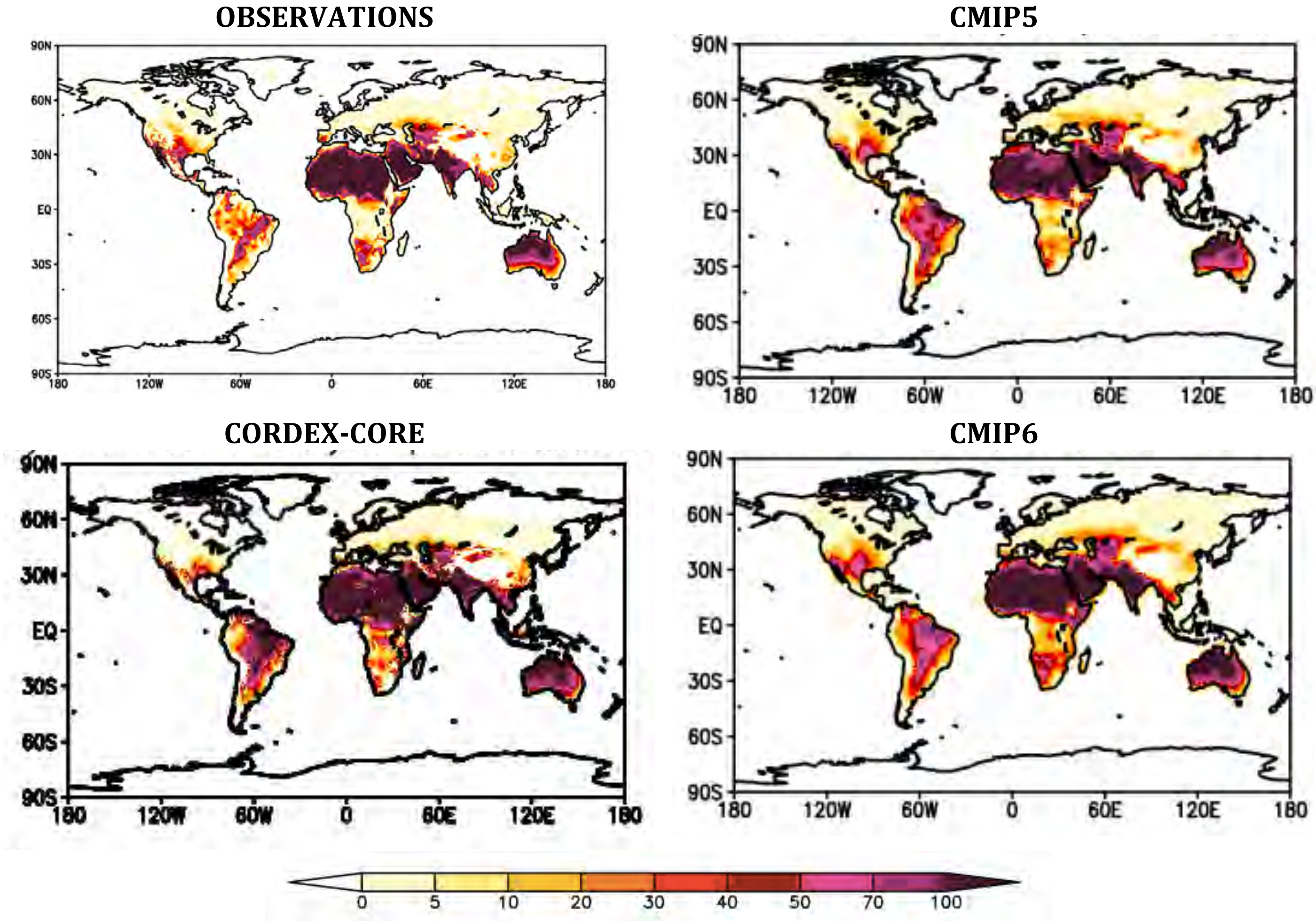


Fig. 3: The same as in Fig. 2 but for the number of days with maximum daily temperature above 35 degrees . Units are number of days per year.

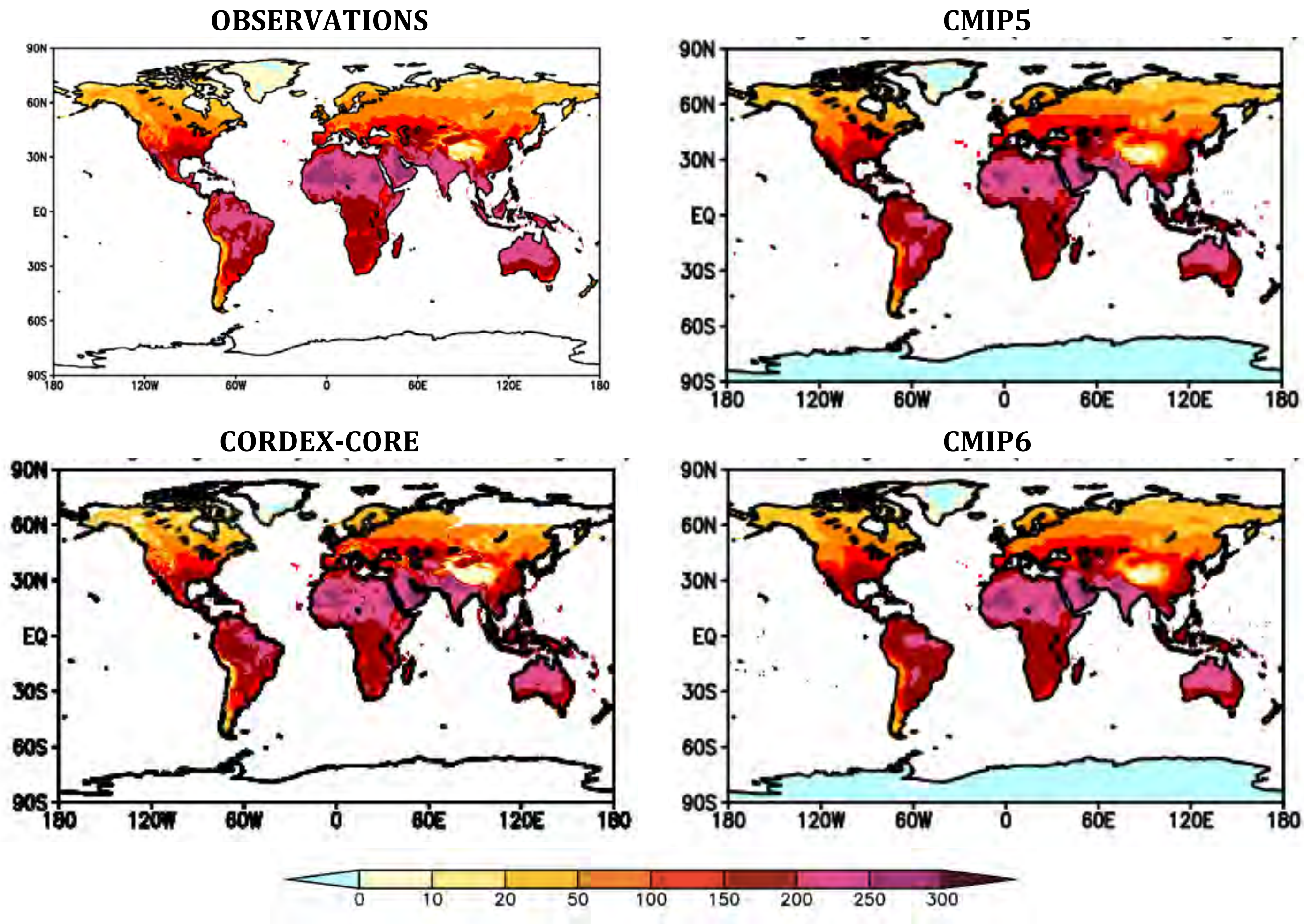


Fig. 4: The same as in Fig. 2 but for the Growing degree-days (GDD). Units are degrees/year.

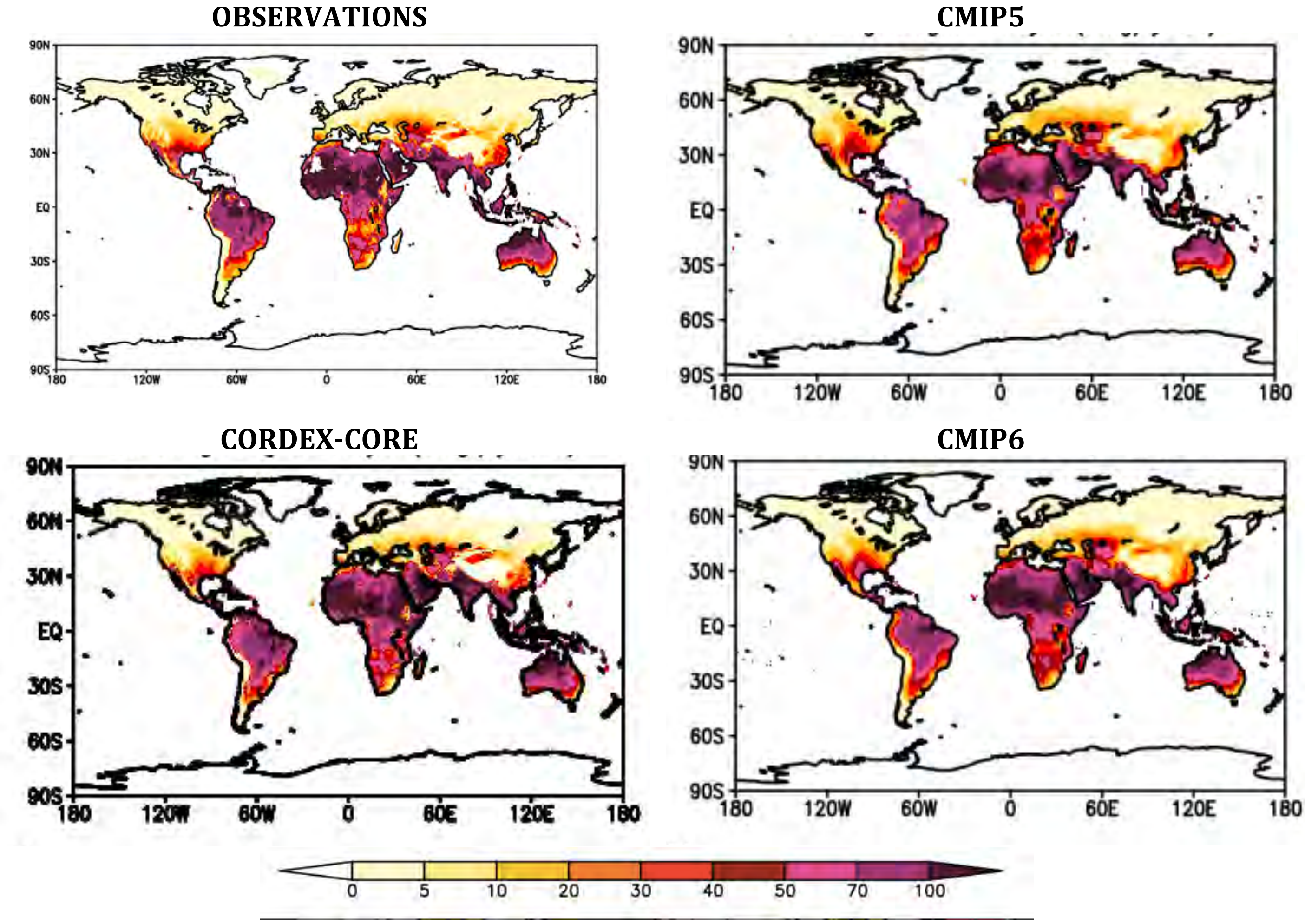


Fig. 5: The same as in Fig. 2 but for the Cooling degree day (CDD). Units are degree/year.

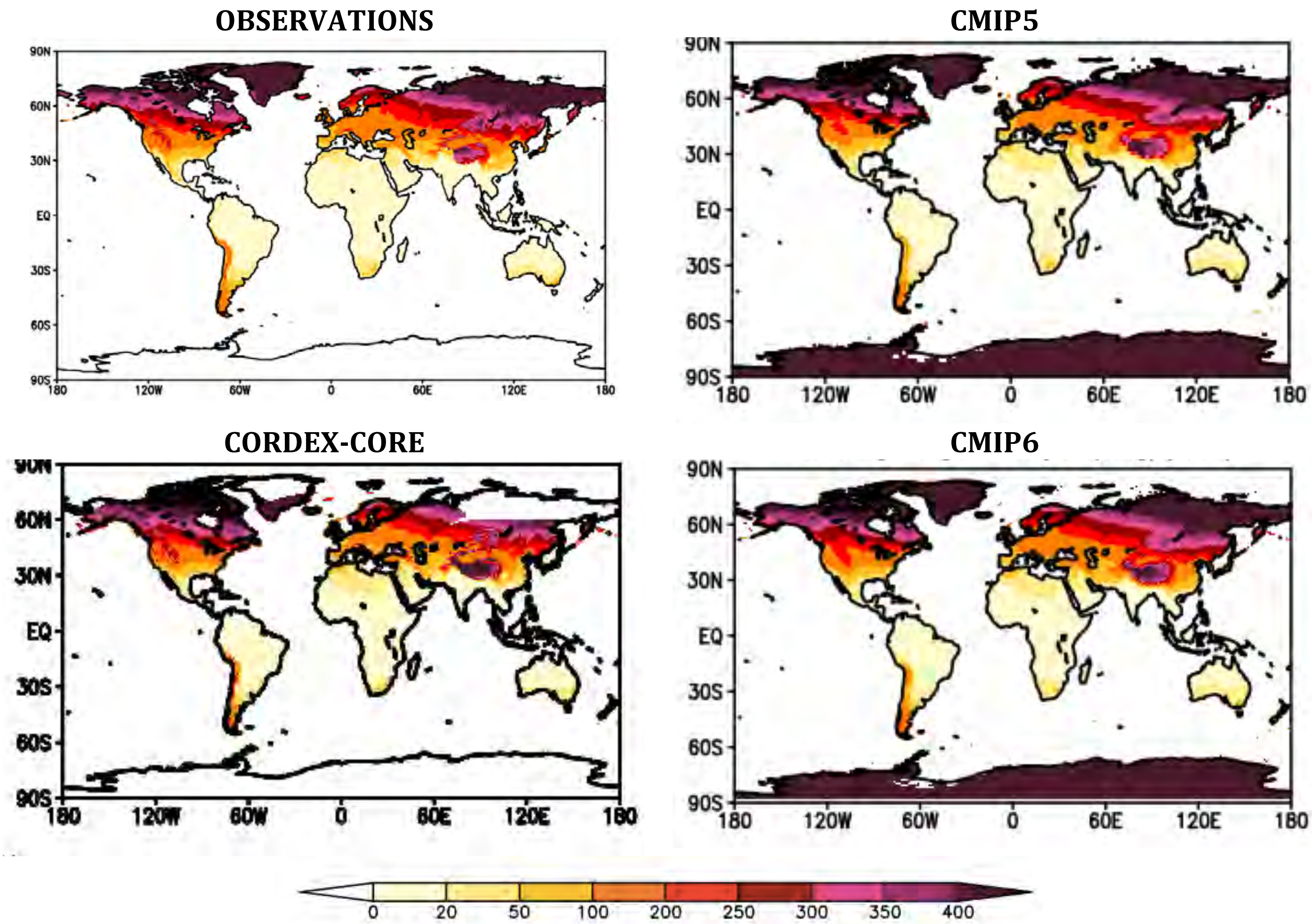


Fig. 6 : The same as in Fig. 2 but for the Heating degree day (HDD). Units are degree/year.

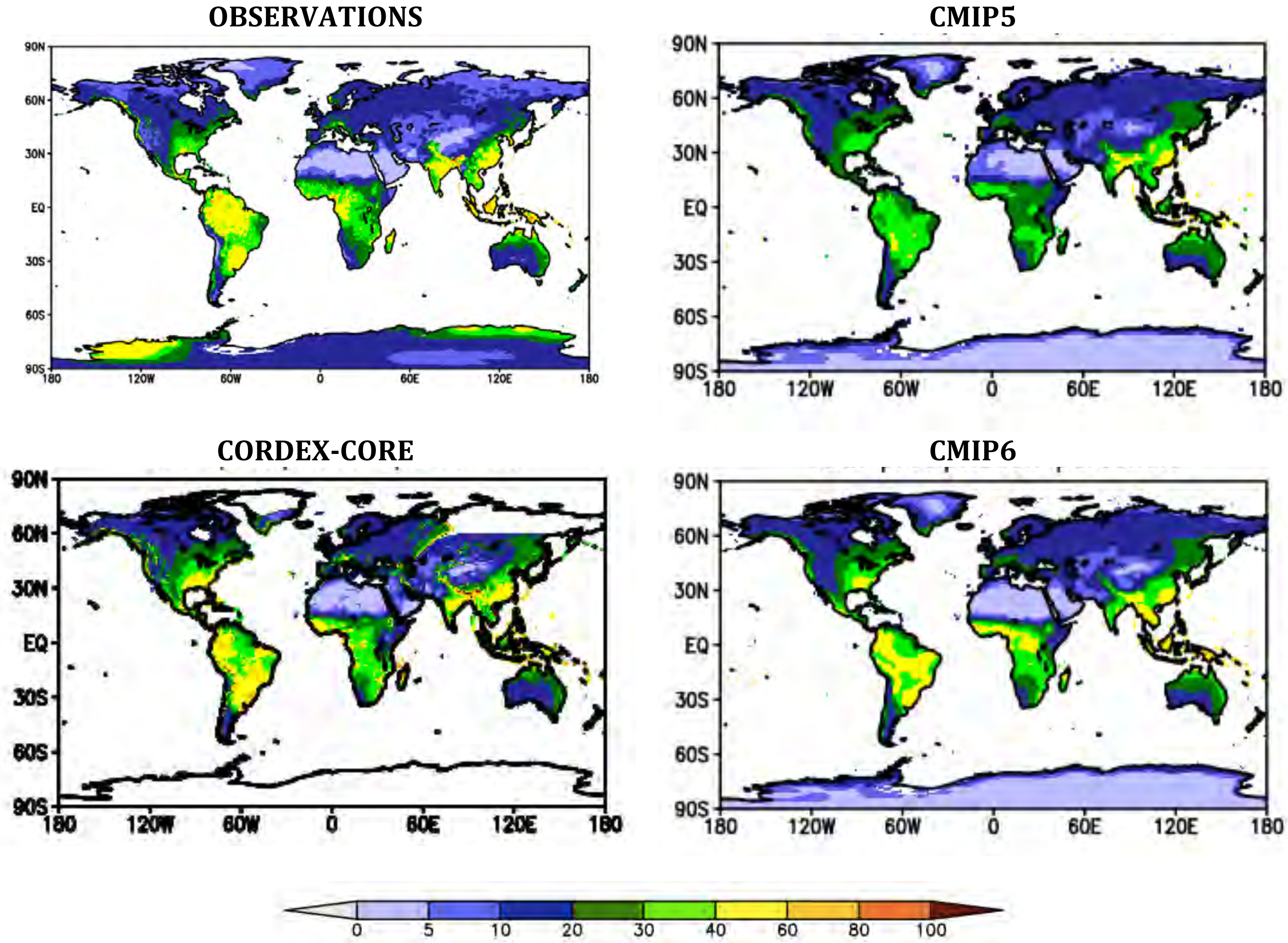


Fig. 7: The same as in Fig. 2 but for the 99th precipitation percentile. Units are mm/day.

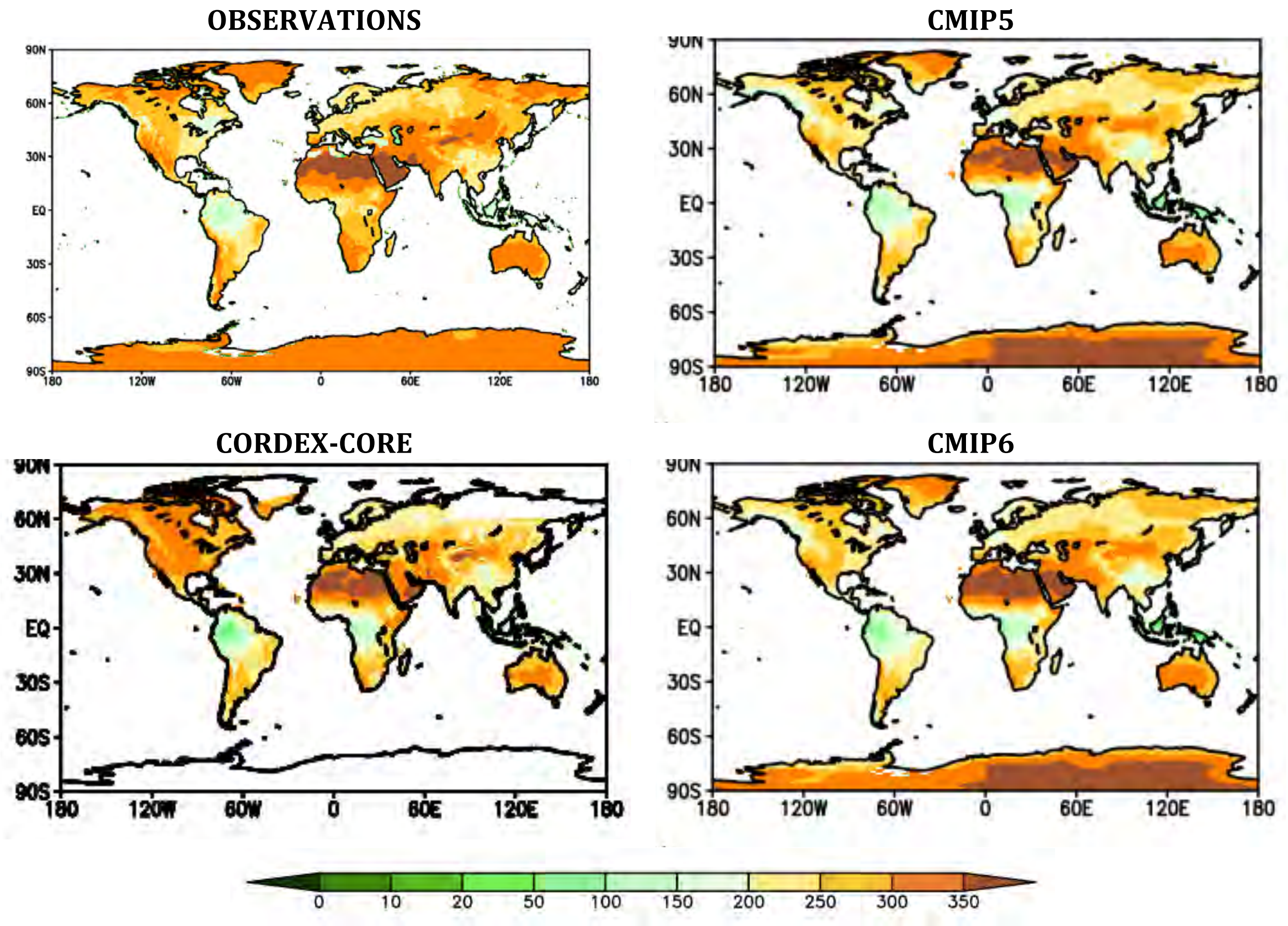


Fig. 8: The same as in Fig. 2 but for the number of days with daily precipitation below 1 mm (dry days). Units are N. of days/year.

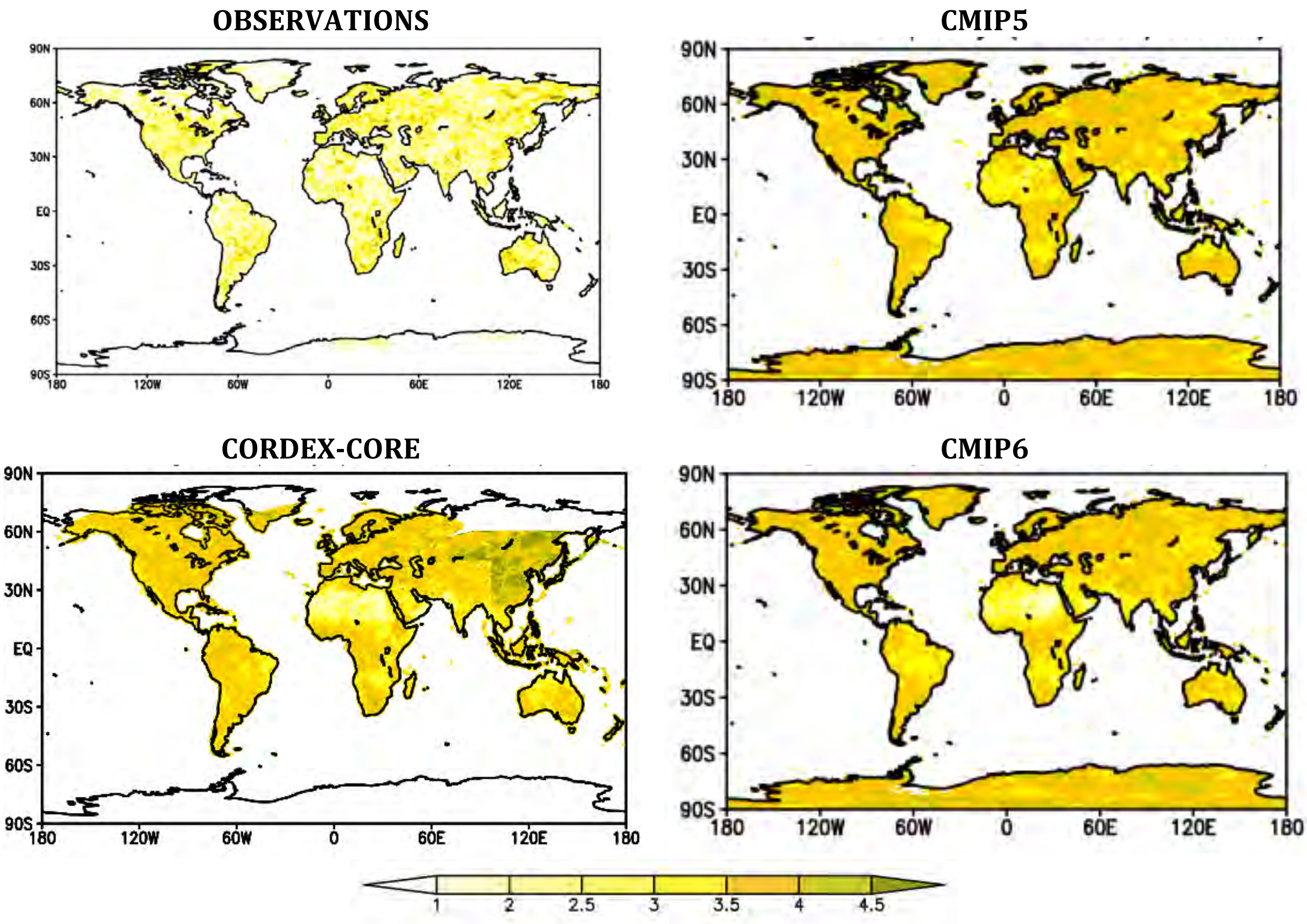


Fig. 9: The same as in Fig. 2 but for the Drought Frequency (DF). Units are N. of events / decade.

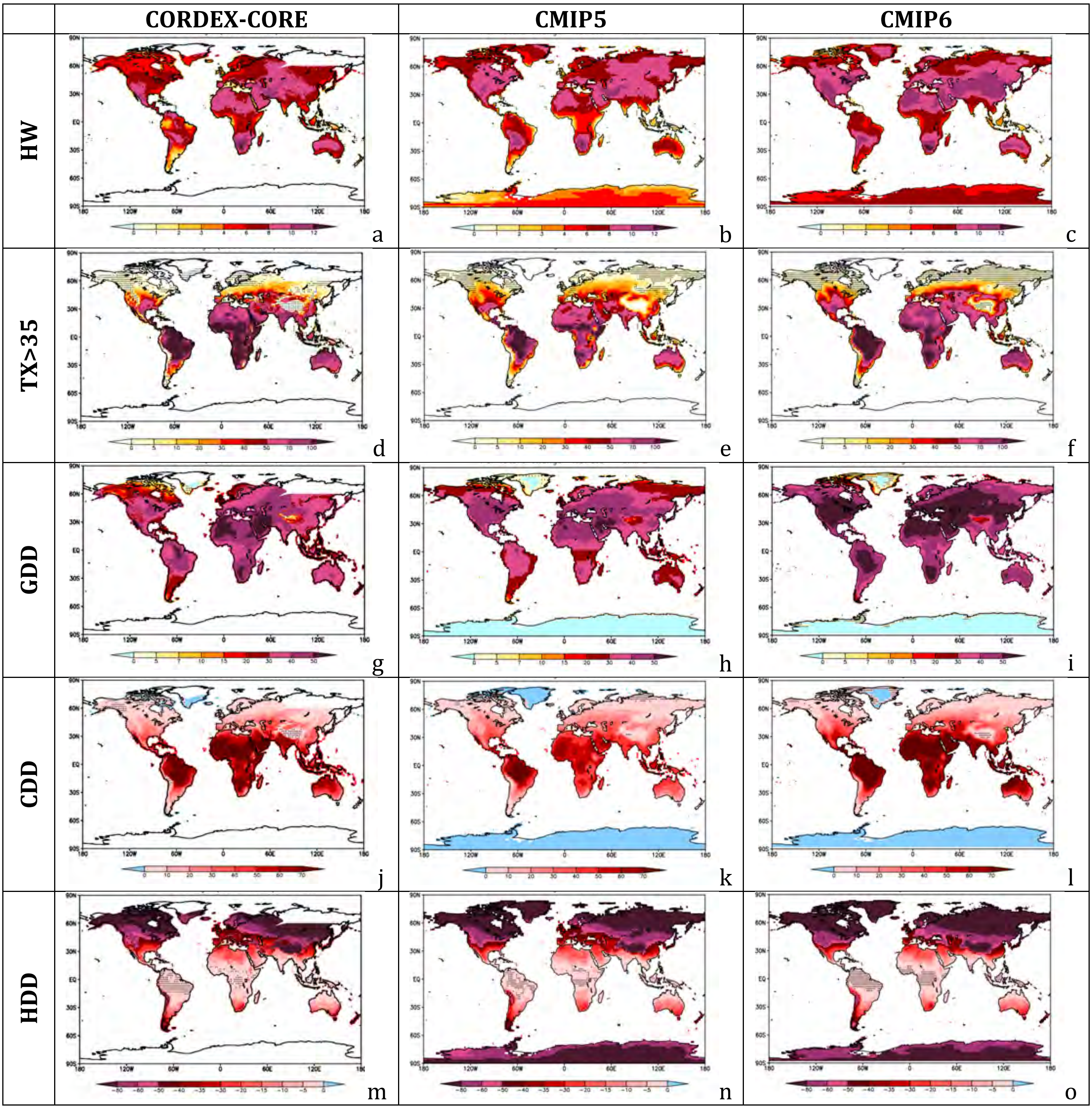


Fig. 10: Far future change for RCP8.5 (SSP585 for CMIP6) for Temperature and Heat indicators. Little black dots indicate areas where the change signal is not significant.

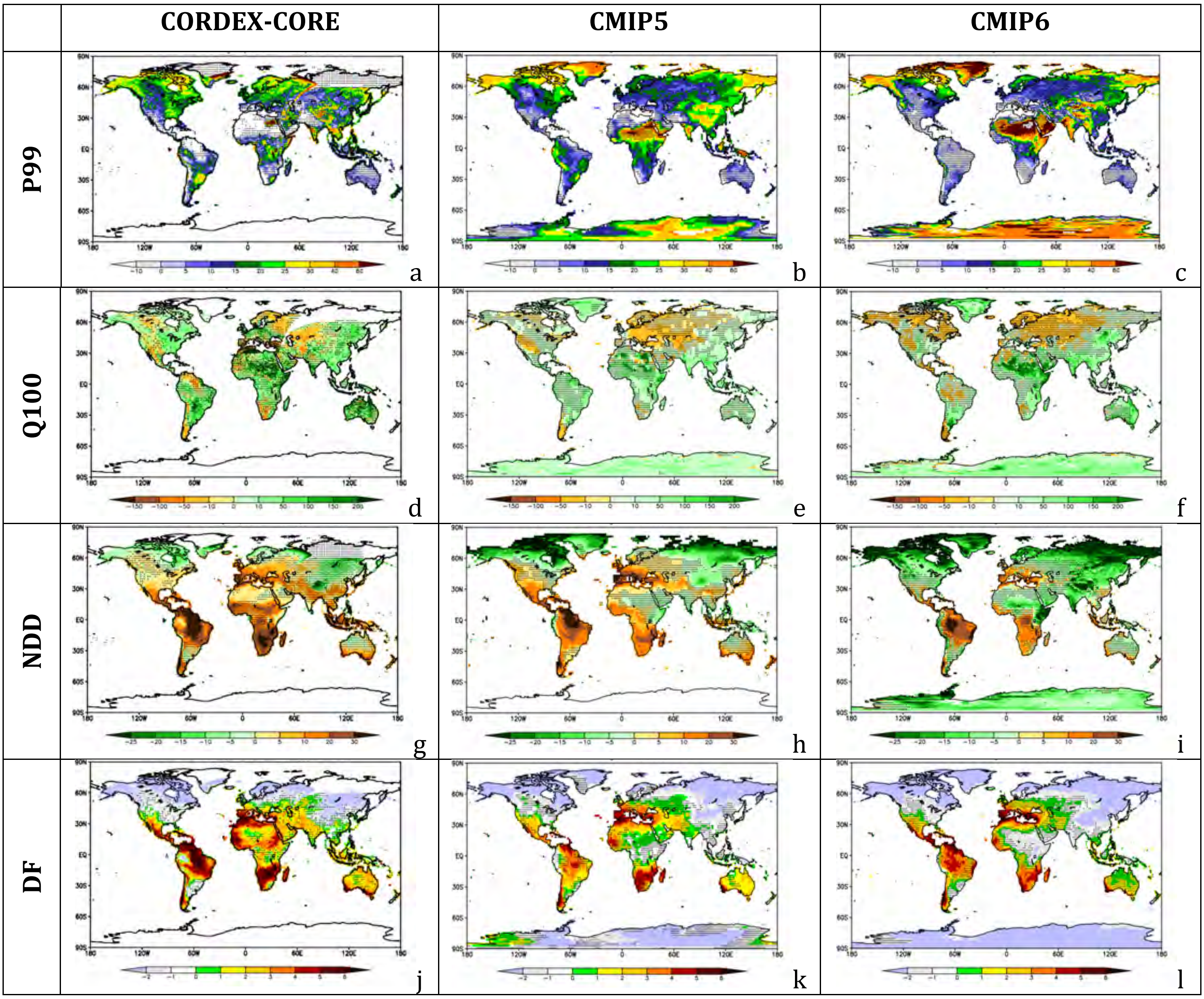
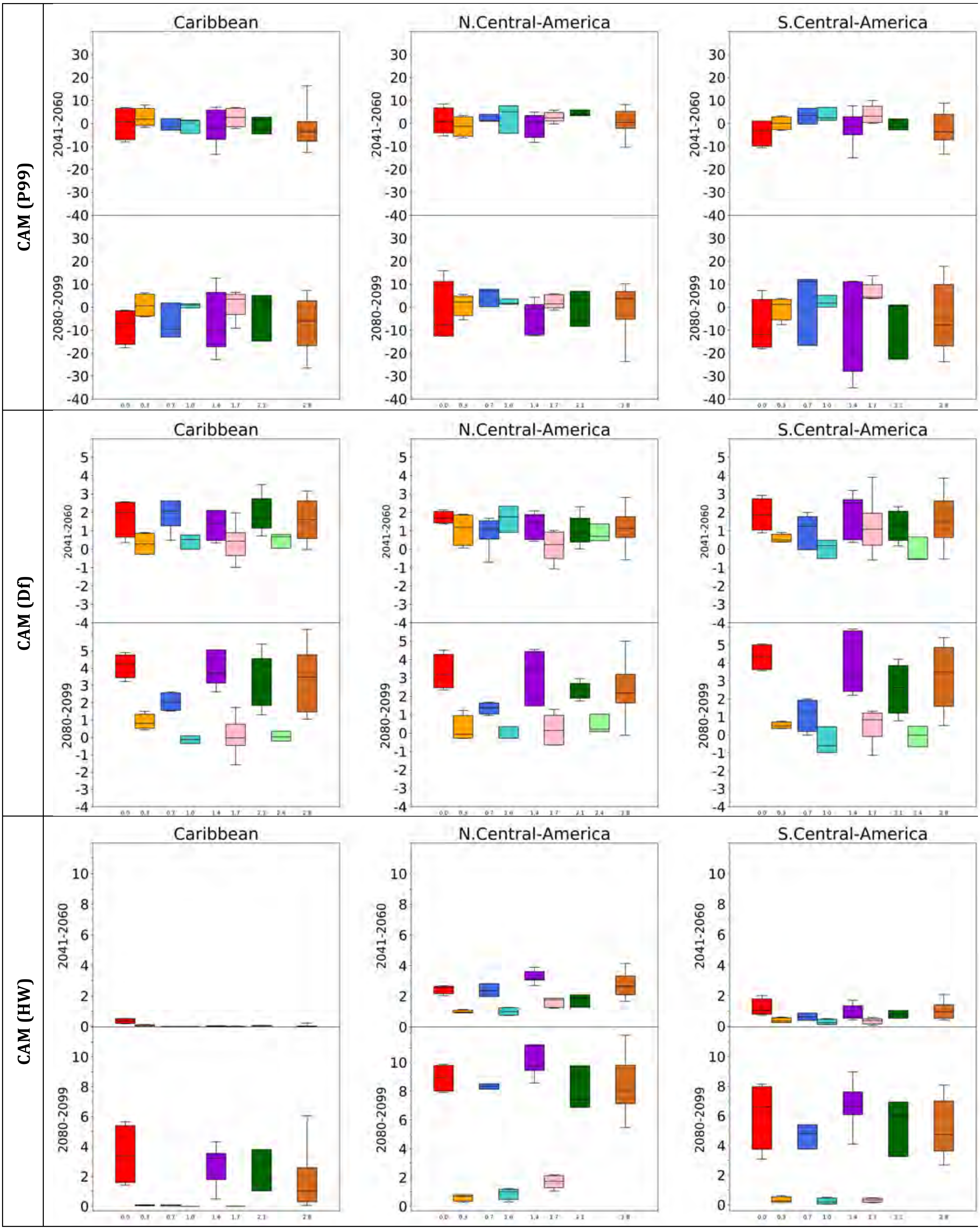
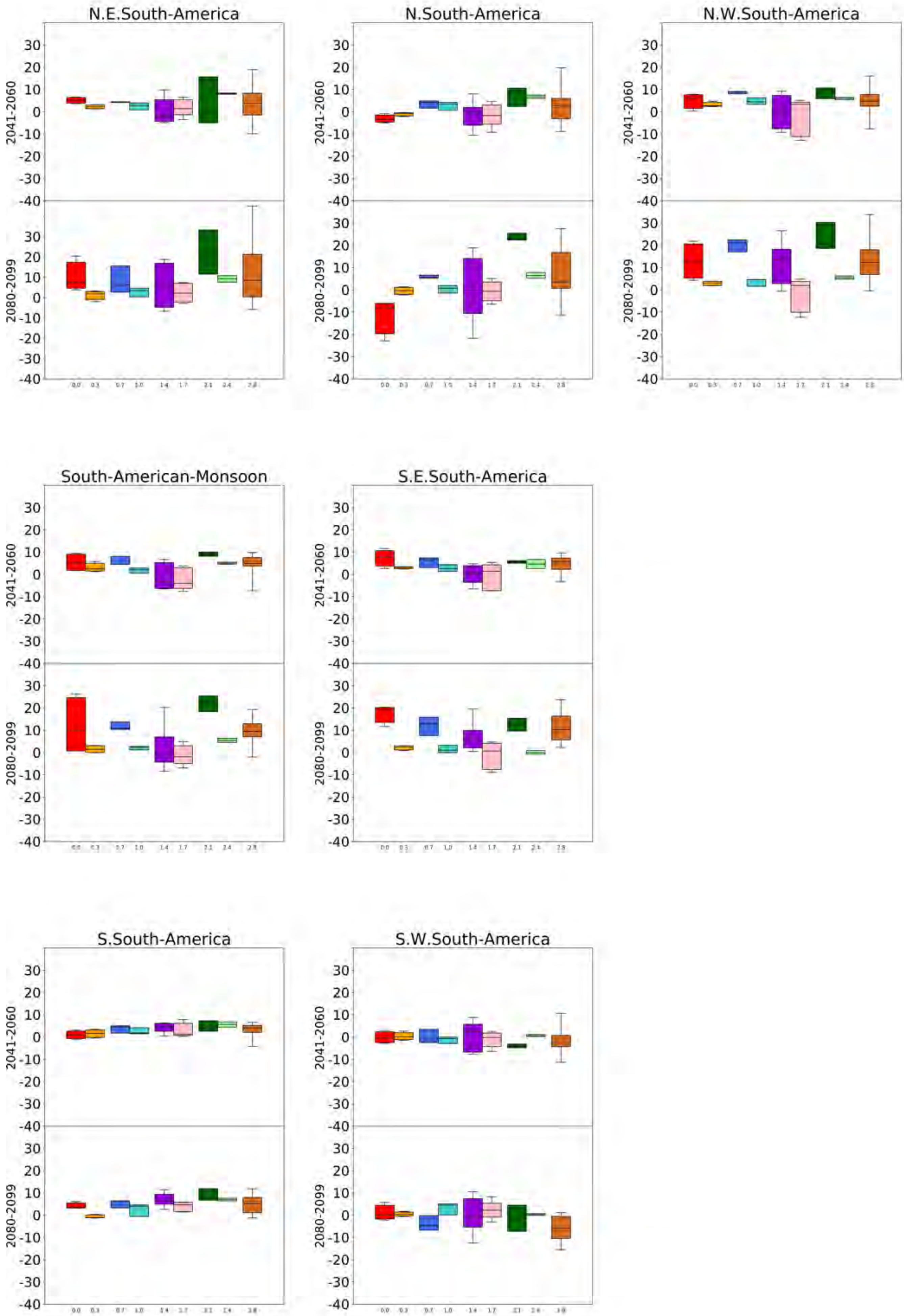


Fig. 11: Far future change for RCP8.5 (SSP585 for CMIP6) for Dry and Wet indicators. Little black dots indicate areas where the change signal is not significant.

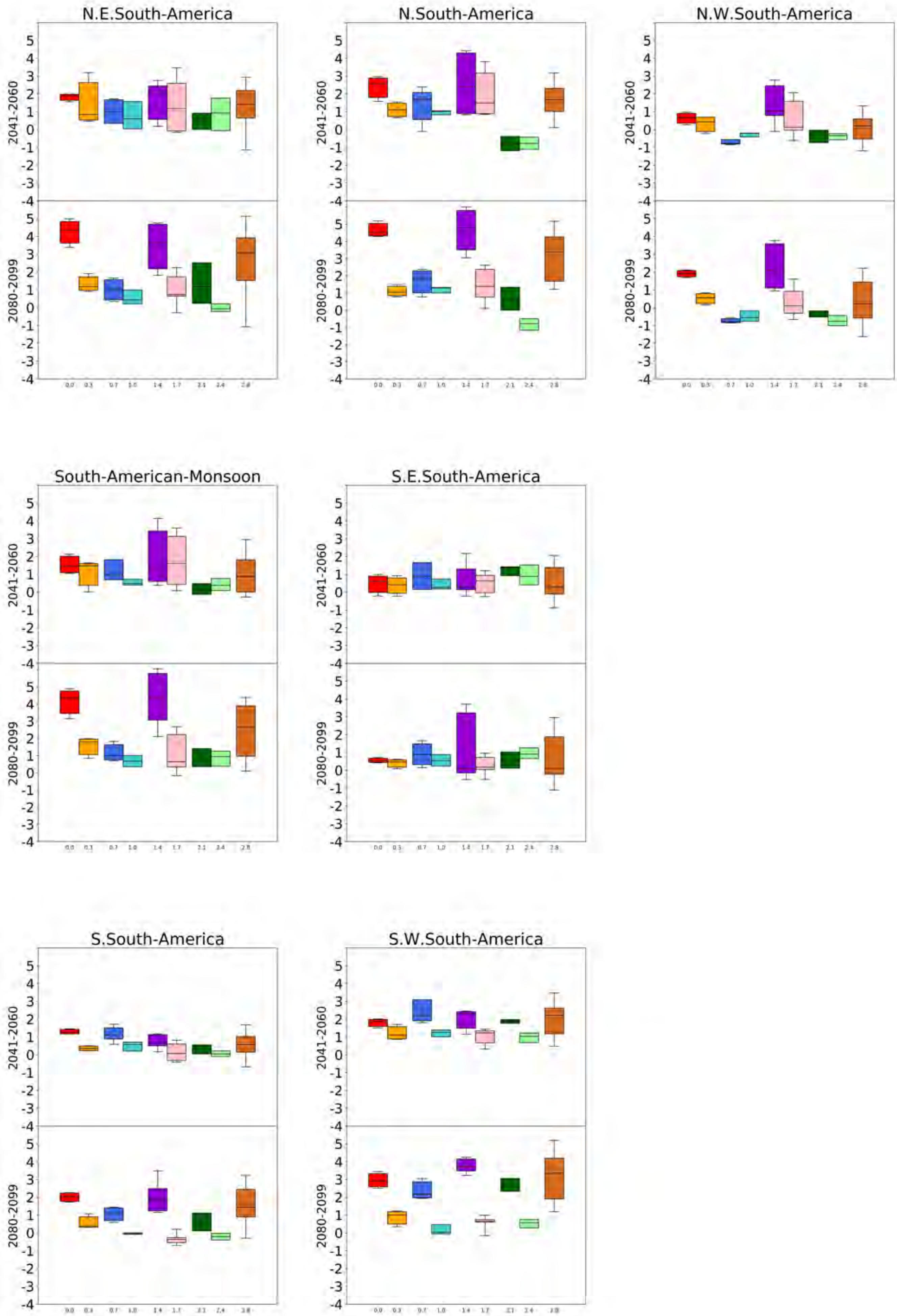

CAM (P99)
CAM (Df)
CAM (HW)
Caribbean
N.Central-America
S.Central-America
2041-2060
2080-2099

SAM (P99)

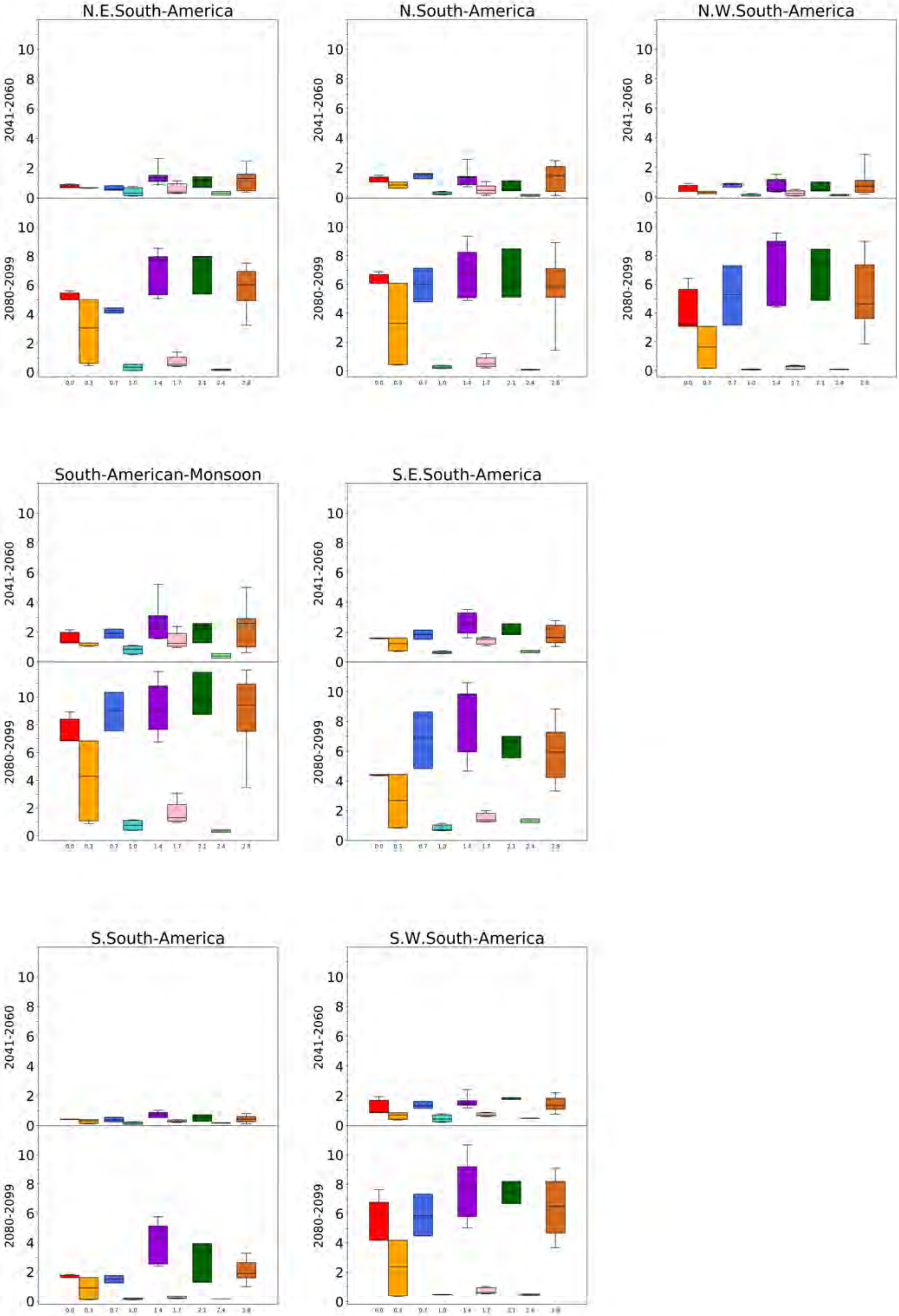


N.E.South-America
N.South-America
N.W.South-America
South-American-Monsoon
S.E.South-America
S.South-America
S.W.South-America
2041-2060
2080-2099
30
20
10
0
-10
-20
-30
-40

SAM (DF)

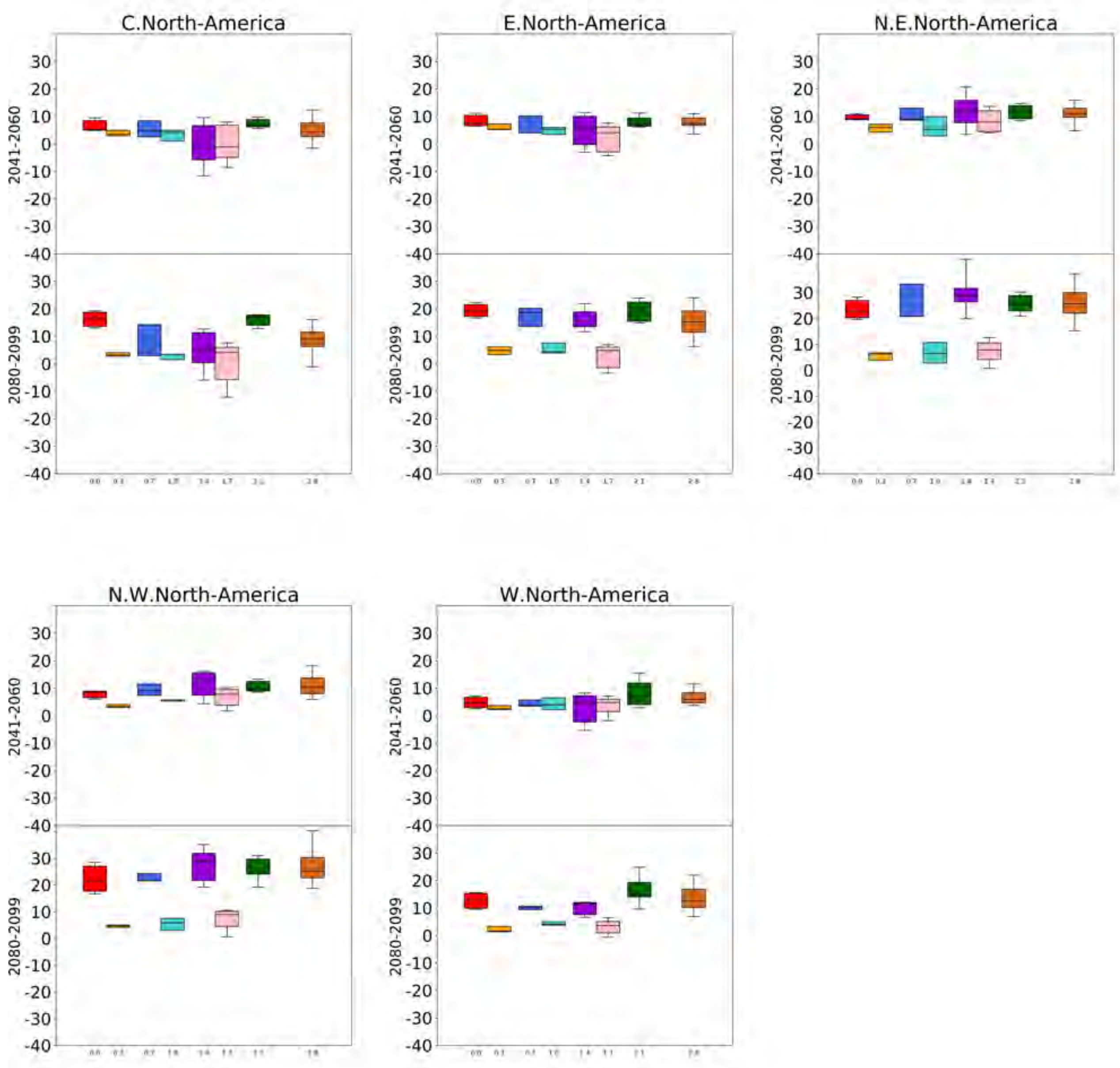

N.E.South-America
N.South-America
N.W.South-America
South-American-Monsoon
S.E.South-America
S.South-America
S.W.South-America
2041-2060
2080-2099
0.0 0.3 0.7 1.0 1.4 1.7 2.1 2.4 2.8

SAM (HW)



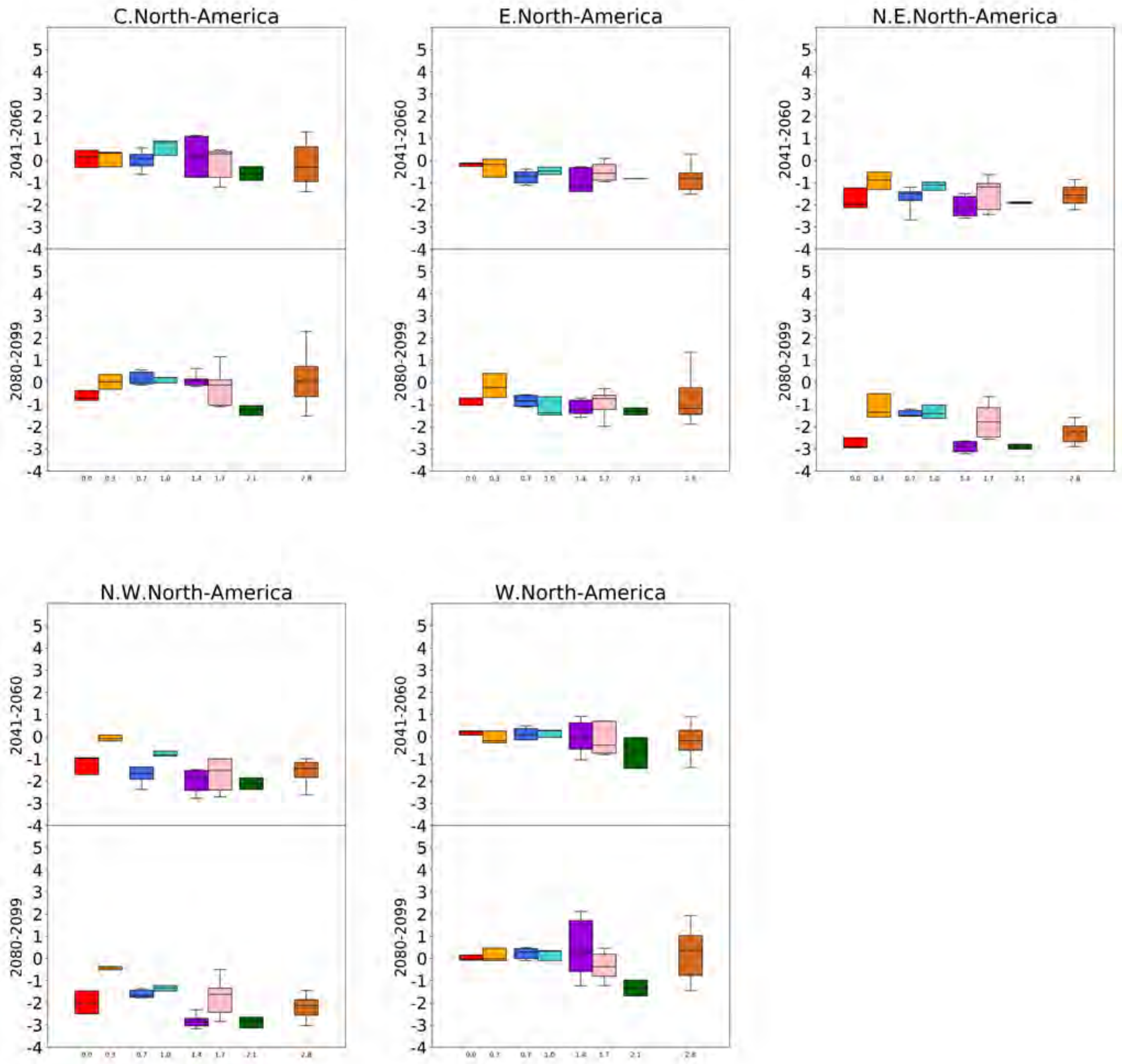
N.E.South-America
N.South-America
N.W.South-America
South-American-Monsoon
S.E.South-America
S.South-America
S.W.South-America
2041-2060
2080-2099

NAM(P99)

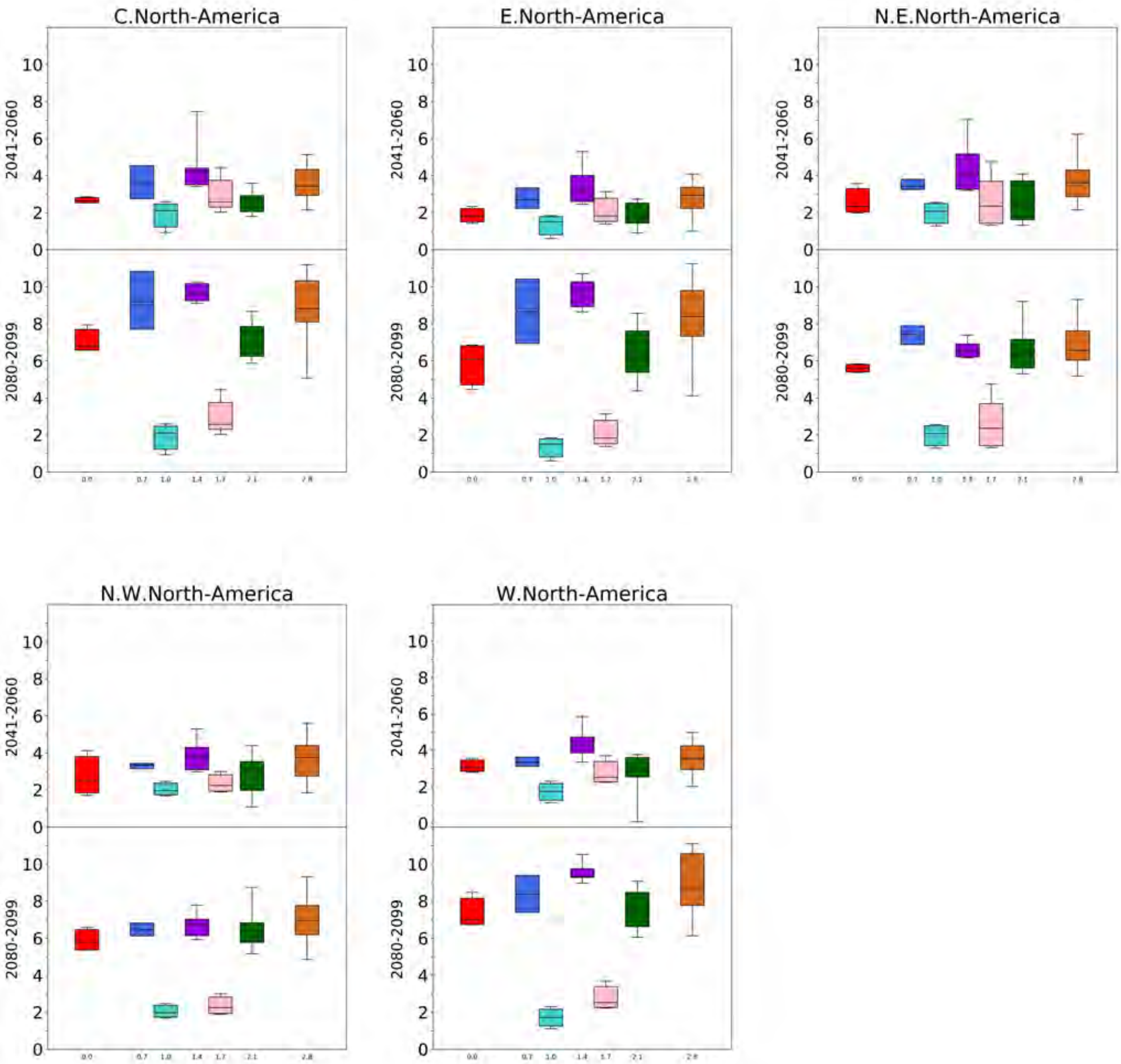


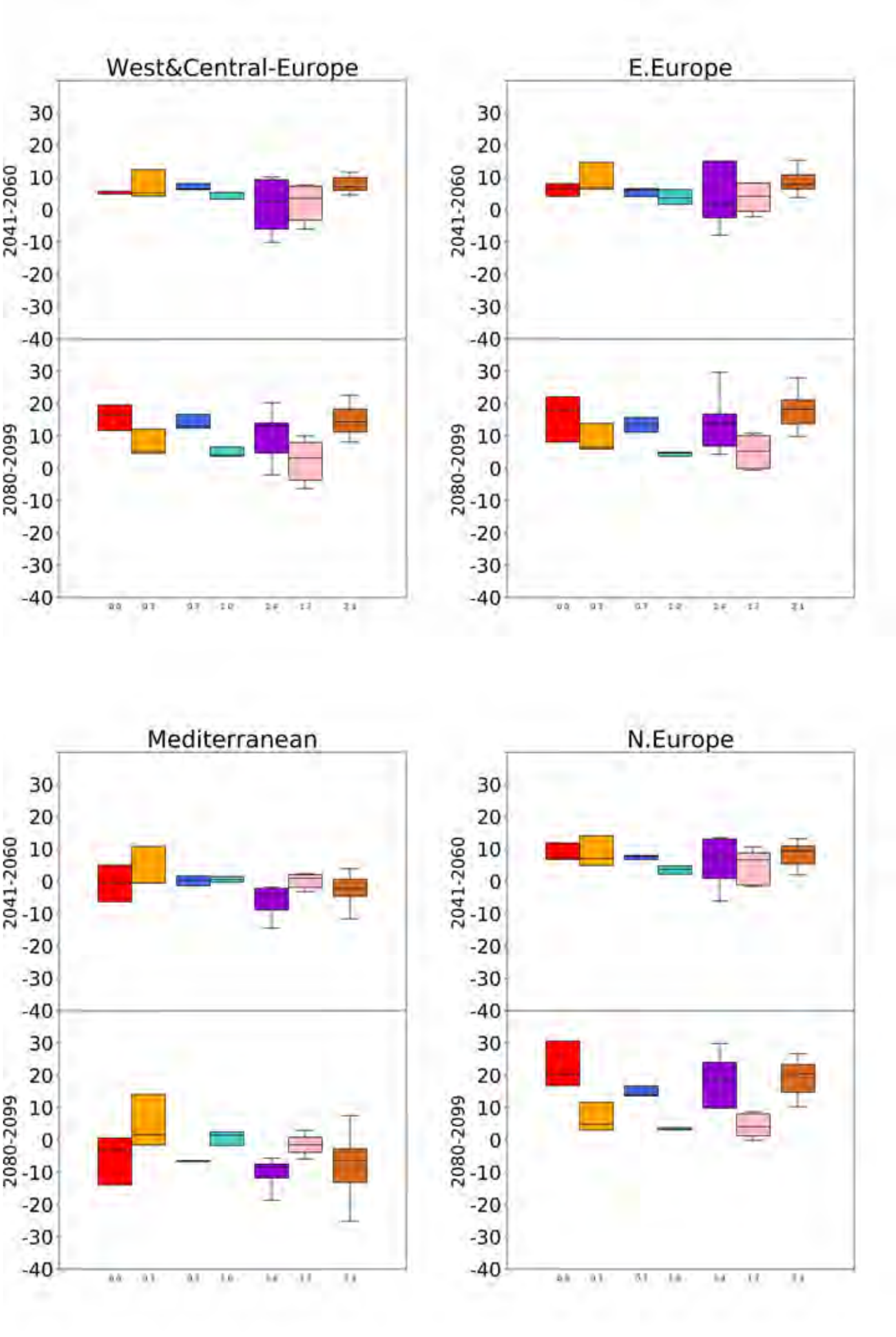
C.North-America
E.North-America
N.E.North-America
N.W.North-America
W.North-America
2041-2060
2080-2099
30
20
10
0
-10
-20
-30
-40

NAM (DF)

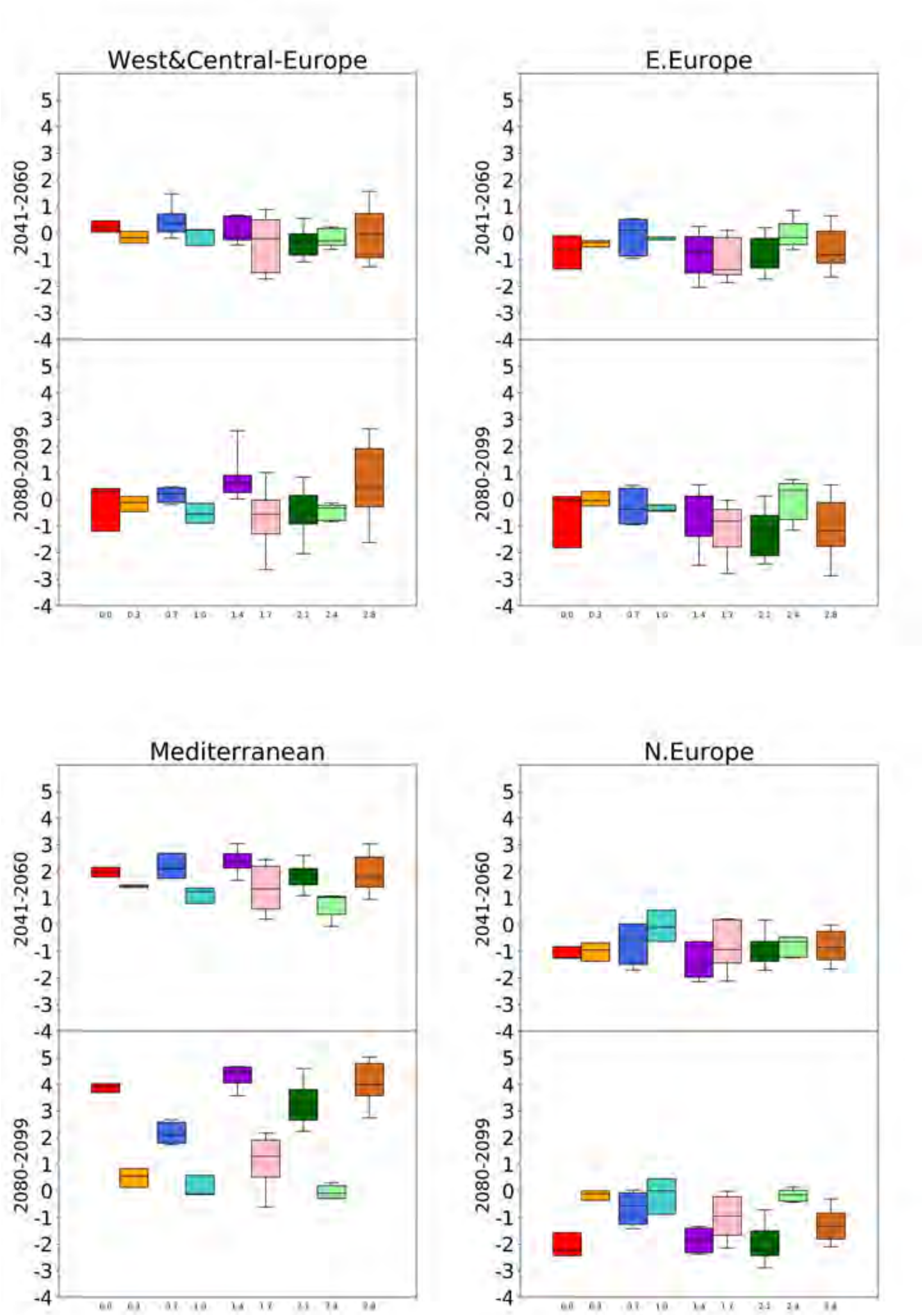

C.North-America
E.North-America
N.E.North-America
N.W.North-America
W.North-America
2041-2060
2080-2099

NAM(HW)

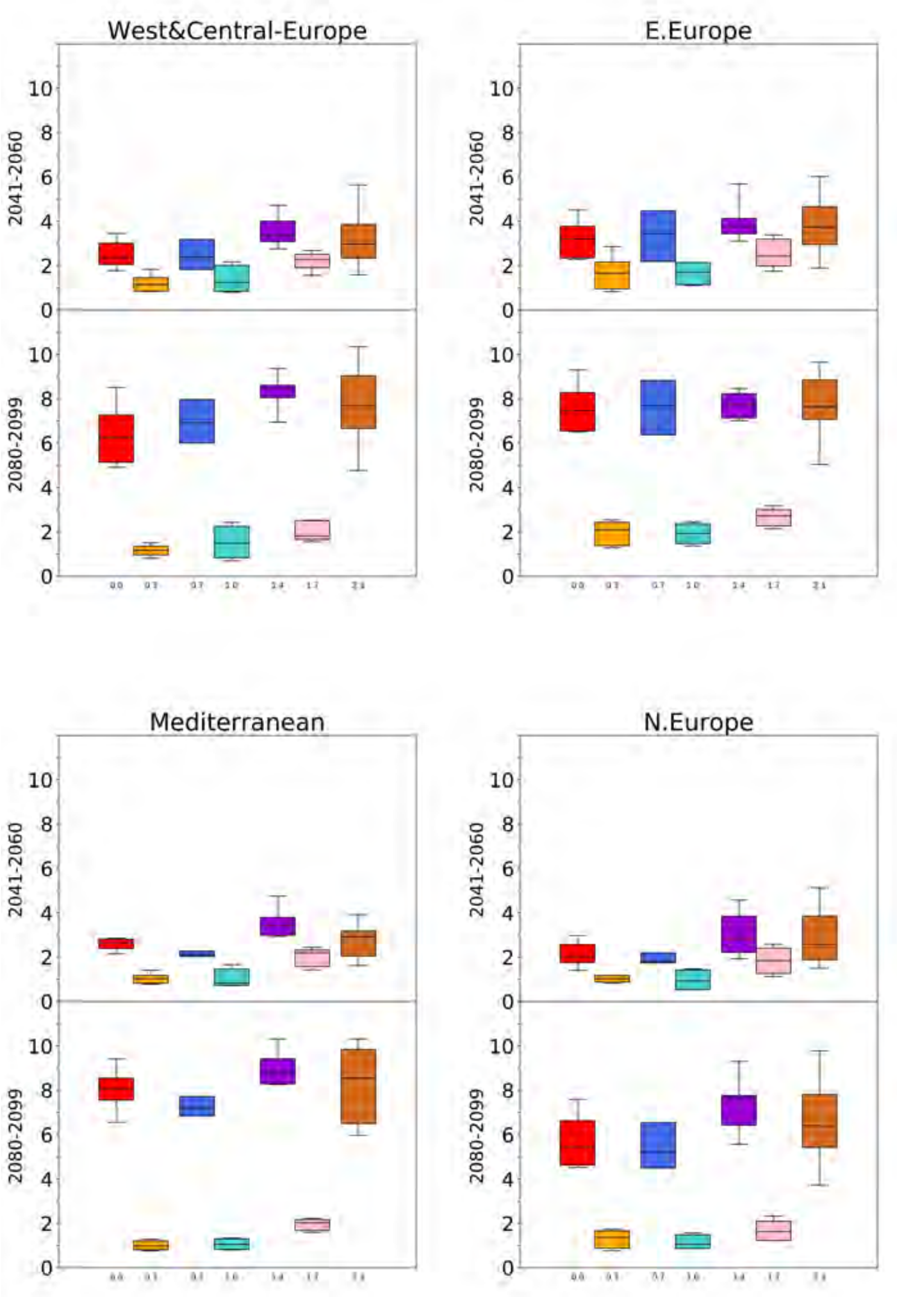

C.North-America
E.North-America
N.E.North-America
N.W.North-America
W.North-America
2041-2060
2080-2099

EUR (P99)	

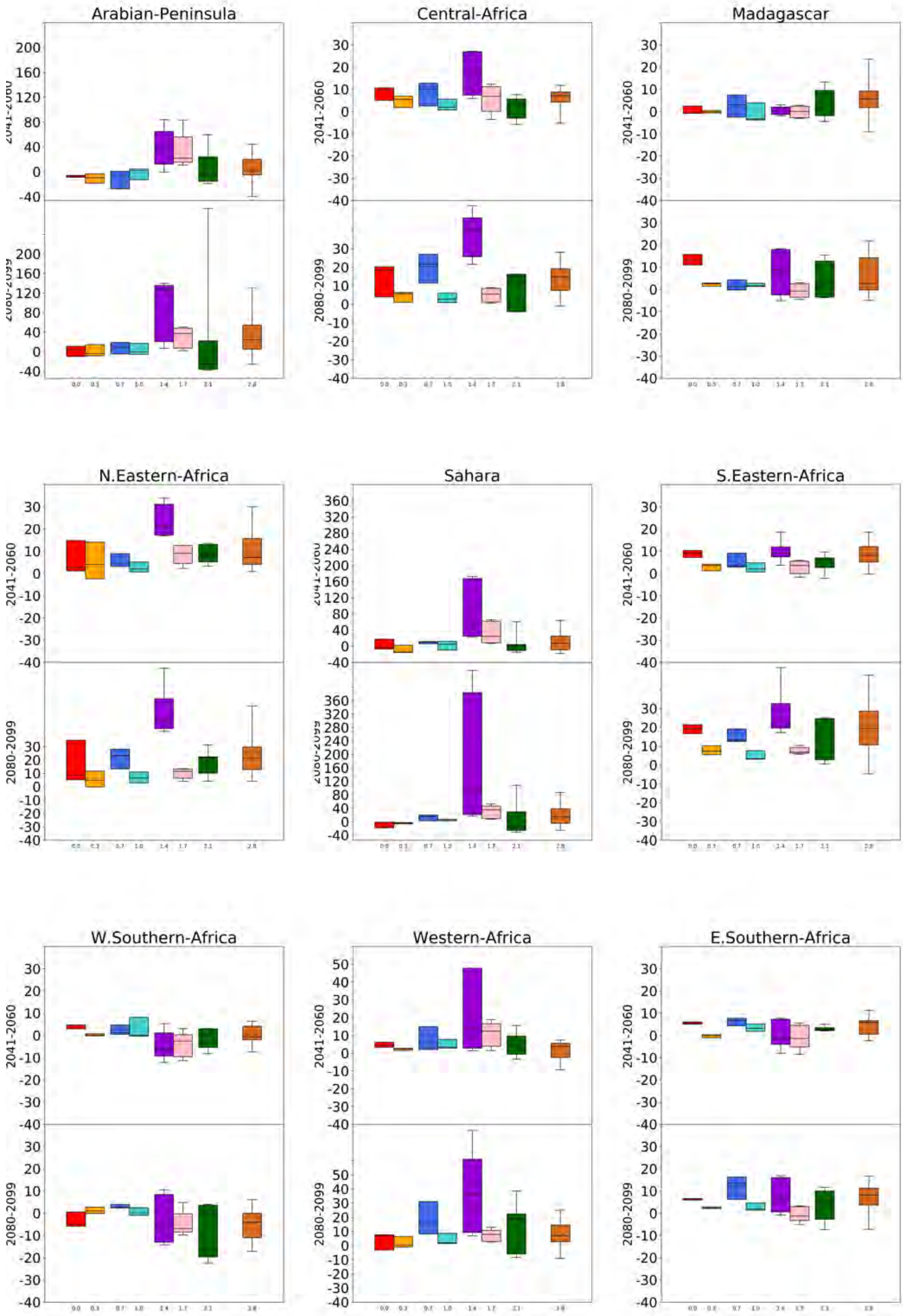
West&Central-Europe
E.Europe
Mediterranean
N.Europe
2041-2060
2080-2099
30
20
10
0
-10
-20
-30
-40

EUR (DF)	

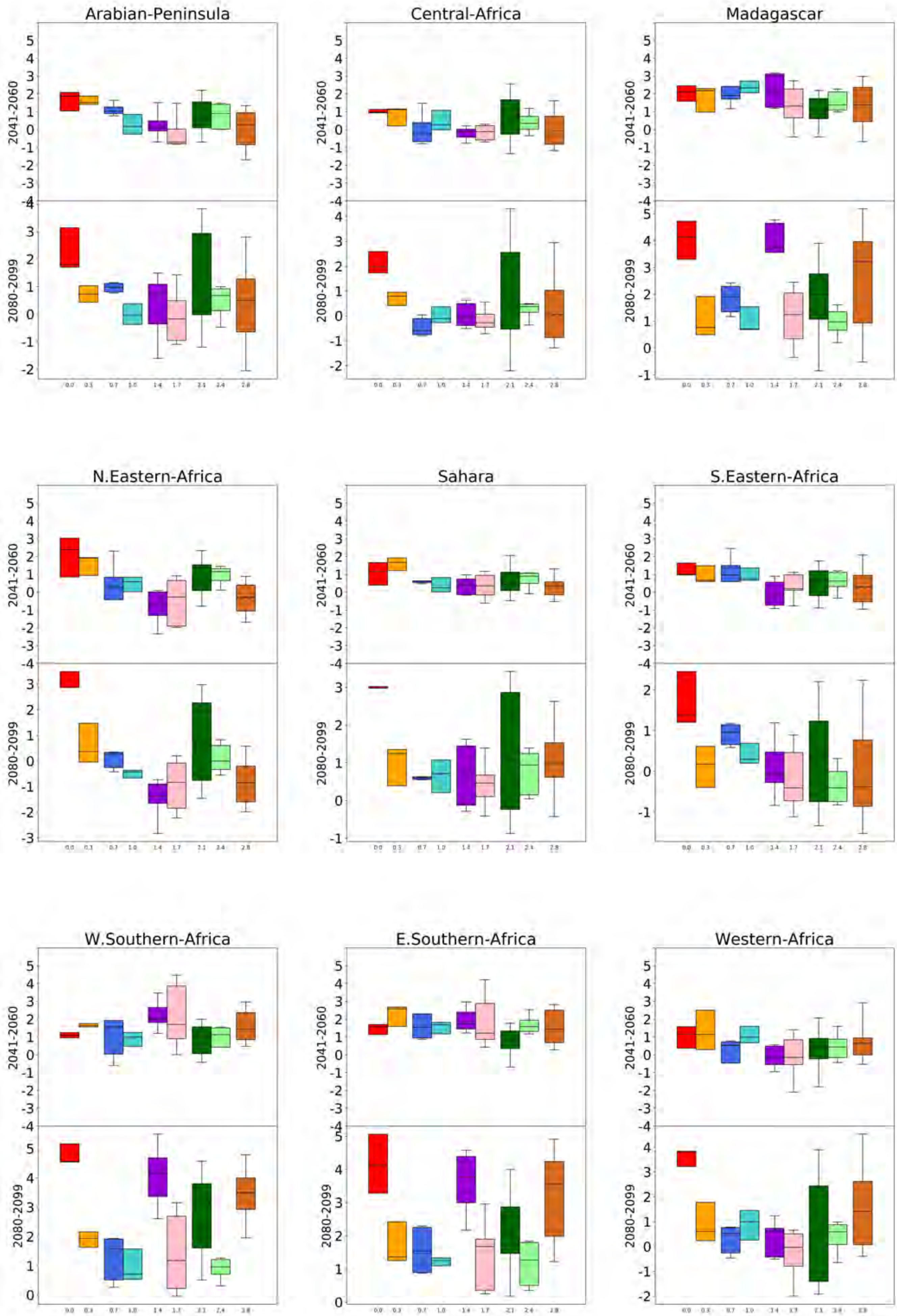
West&Central-Europe
E.Europe
Mediterranean
N.Europe
2041-2060
2080-2099

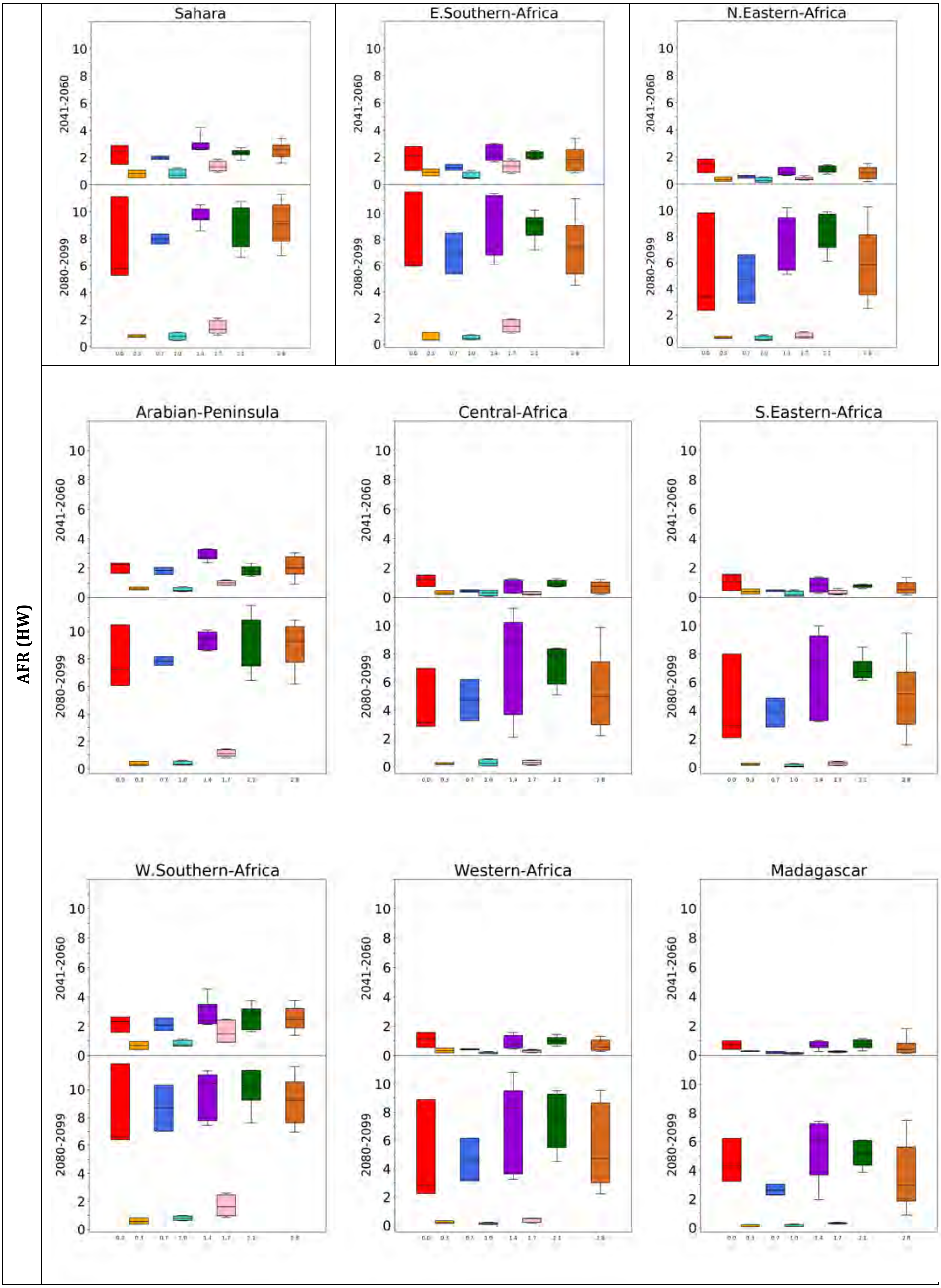
EUR (HW)	West&Central-Europe E.Europe Mediterranean N.Europe 2041-2060 2080-2099 0 2 4 6 8 10

AFR (P99)

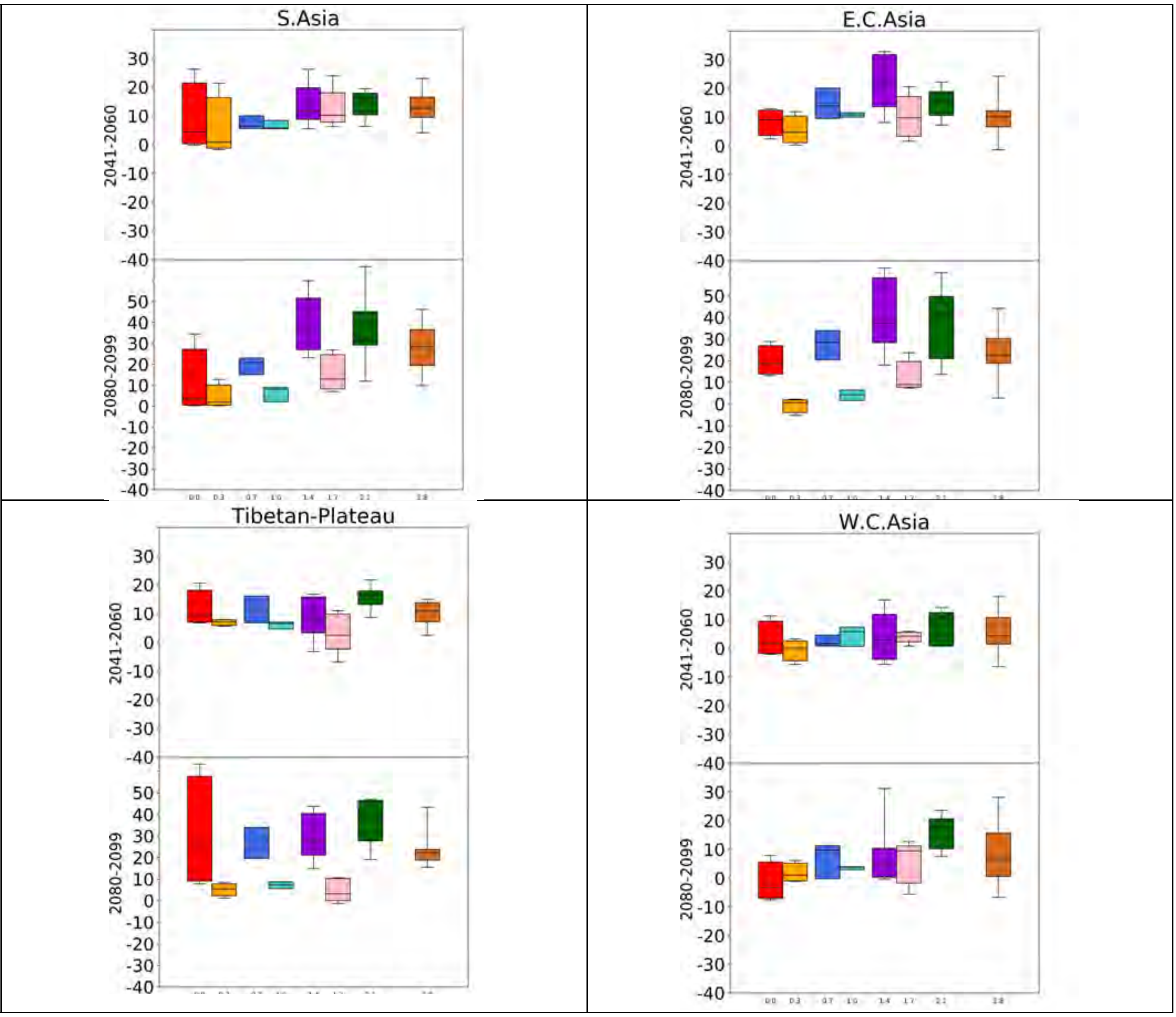

Arabian-Peninsula
Central-Africa
Madagascar
N.Eastern-Africa
Sahara
S.Eastern-Africa
W.Southern-Africa
Western-Africa
E.Southern-Africa
2041-2060
2080-2099

AFR (DF)

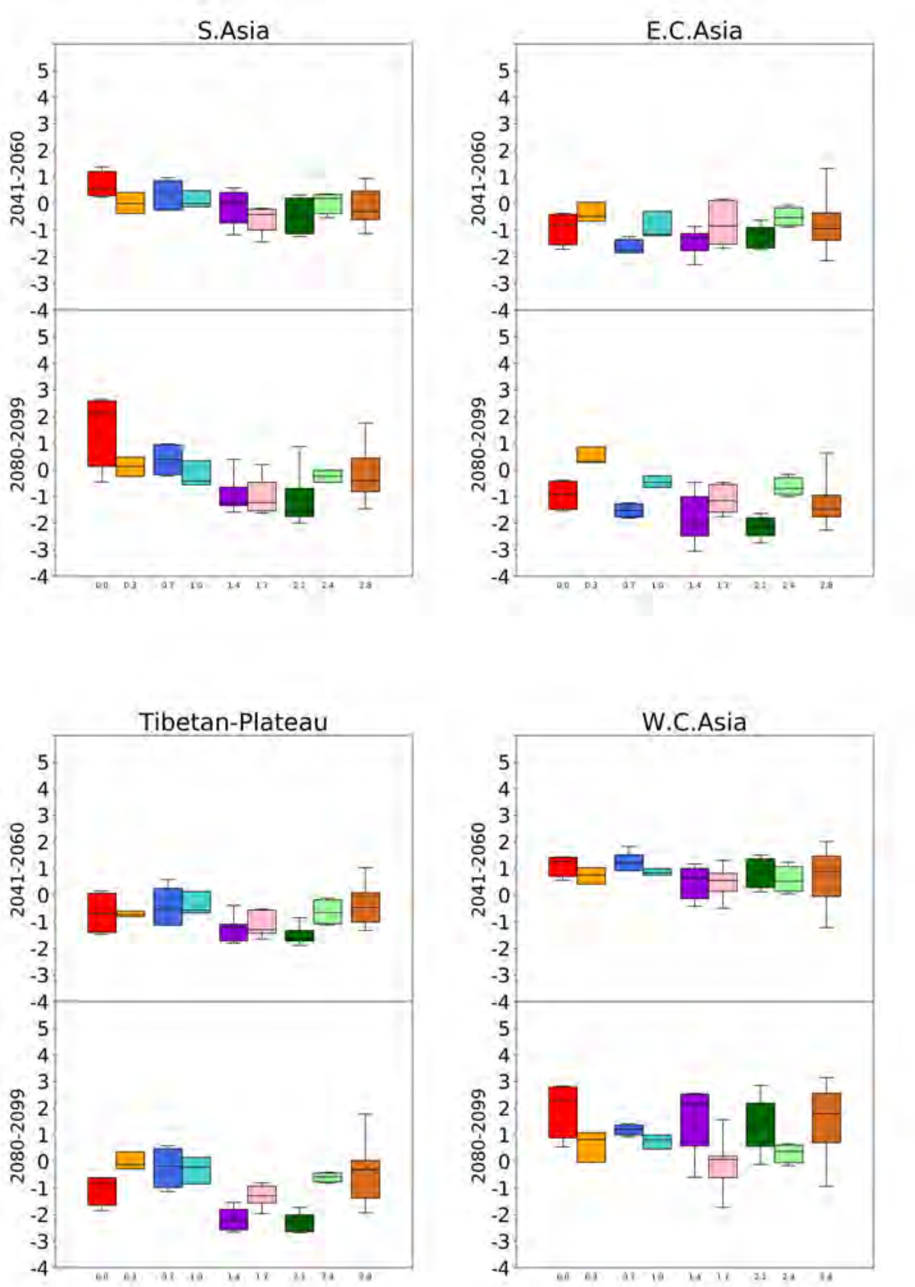

Arabian-Peninsula
Central-Africa
Madagascar
N.Eastern-Africa
Sahara
S.Eastern-Africa
W.Southern-Africa
E.Southern-Africa
Western-Africa
2041-2060
2080-2099


AFR (HW)
Sahara
E.Southern-Africa
N.Eastern-Africa
Arabian-Peninsula
Central-Africa
S.Eastern-Africa
W.Southern-Africa
Western-Africa
Madagascar
2041-2060
2080-2099

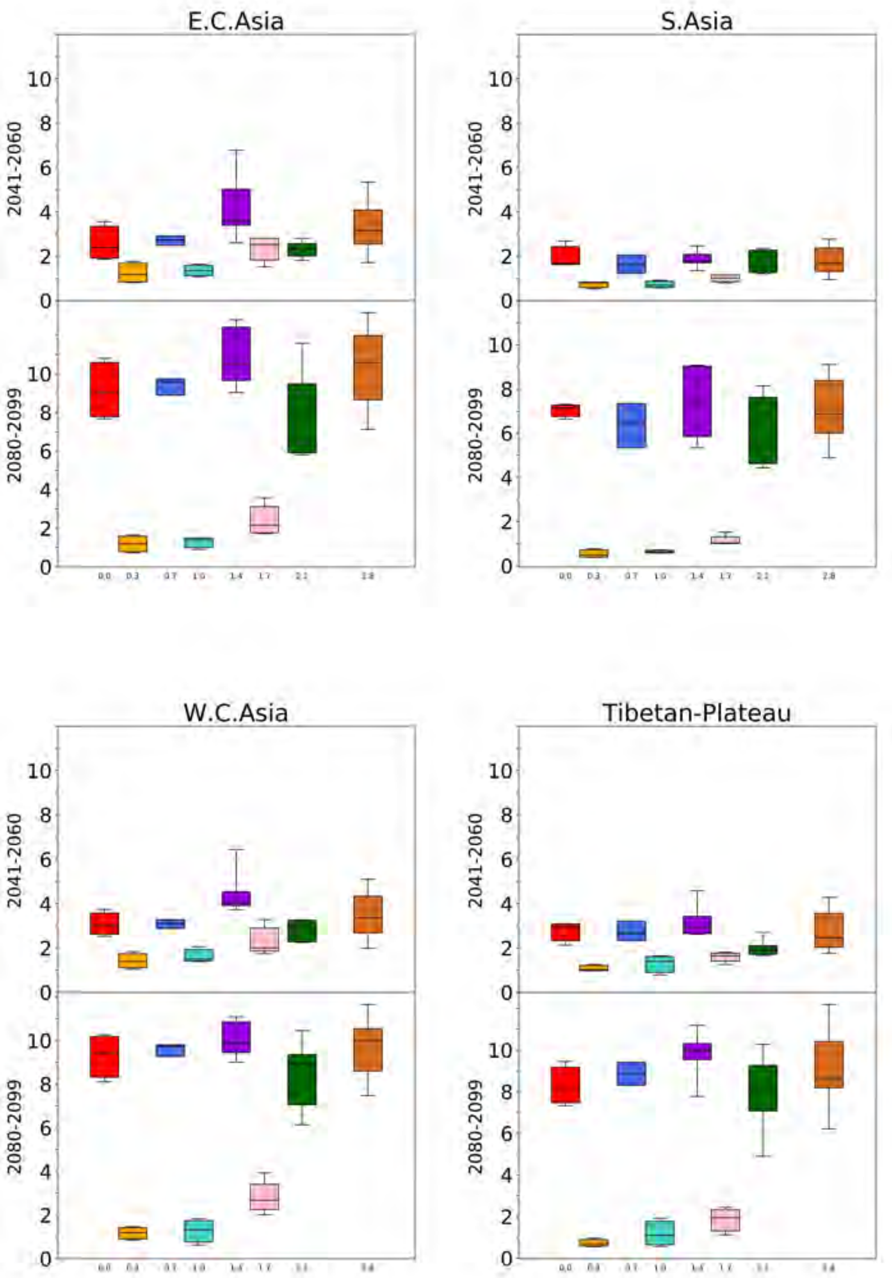
WAS (P99)



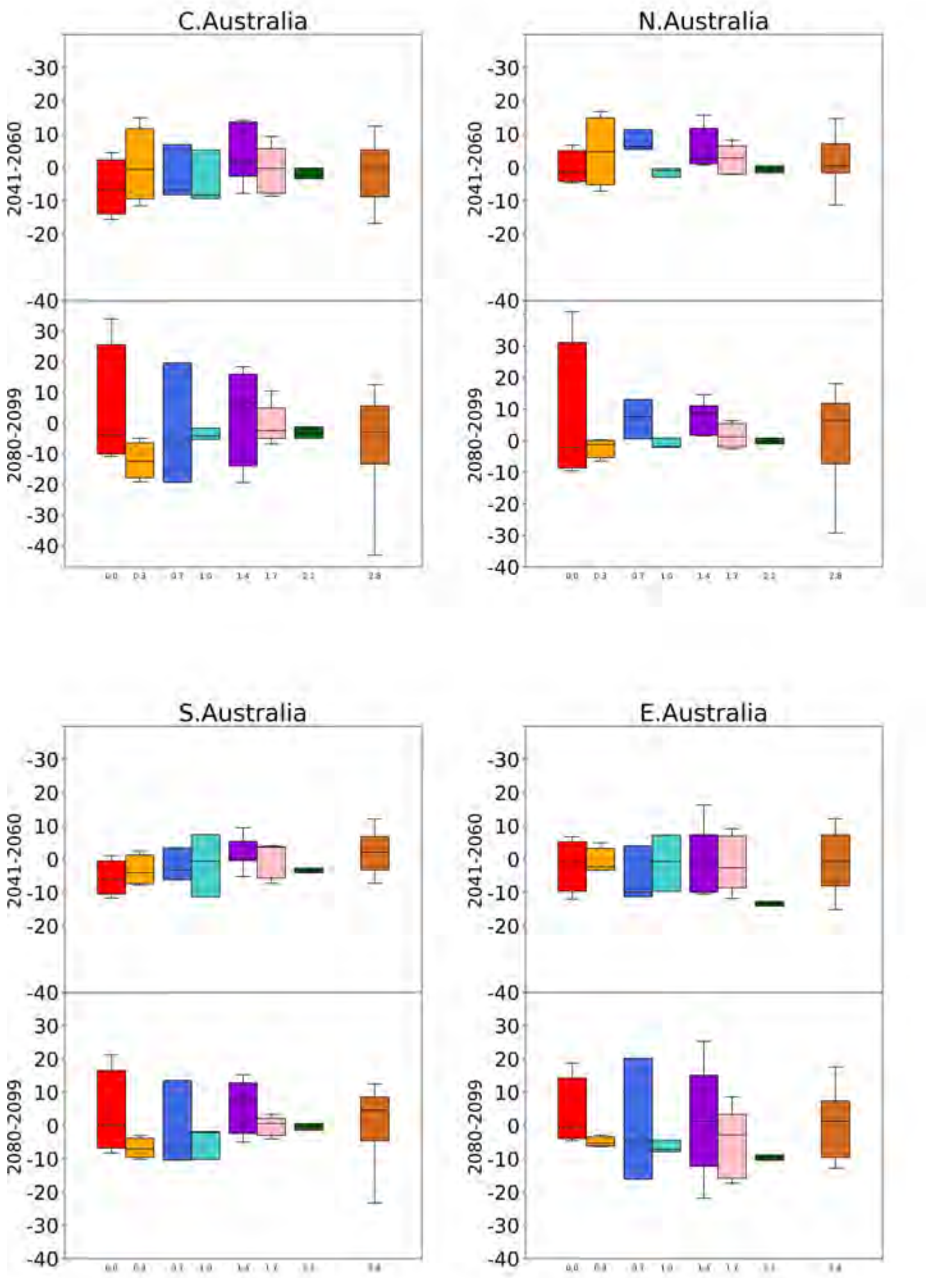
S.Asia
E.C.Asia
Tibetan-Plateau
W.C.Asia
2041-2060
2080-2099
30
20
10
0
-10
-20
-30
-40
50
40

WAS (DF)	

WAS (HW)

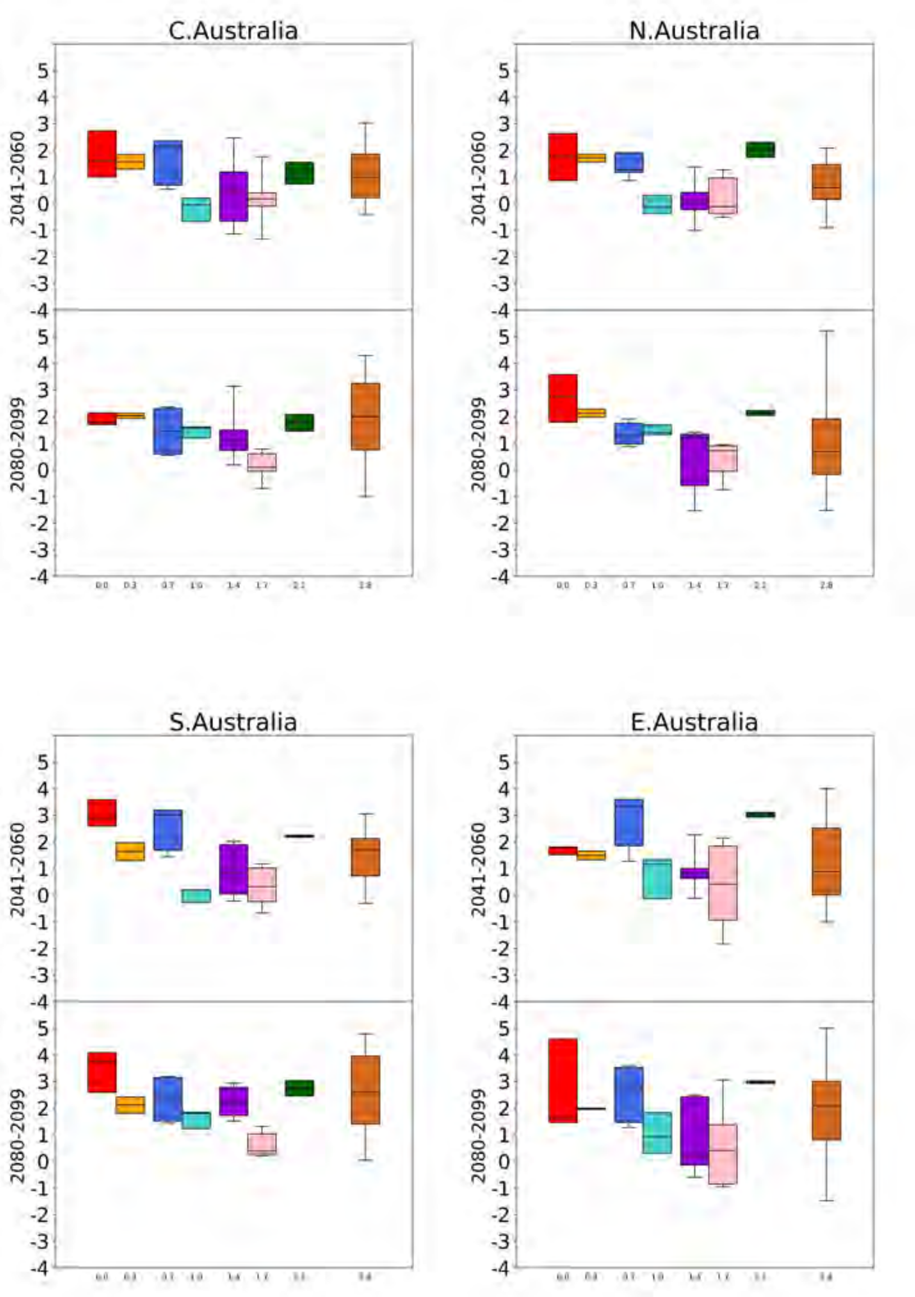


AUS (P99)

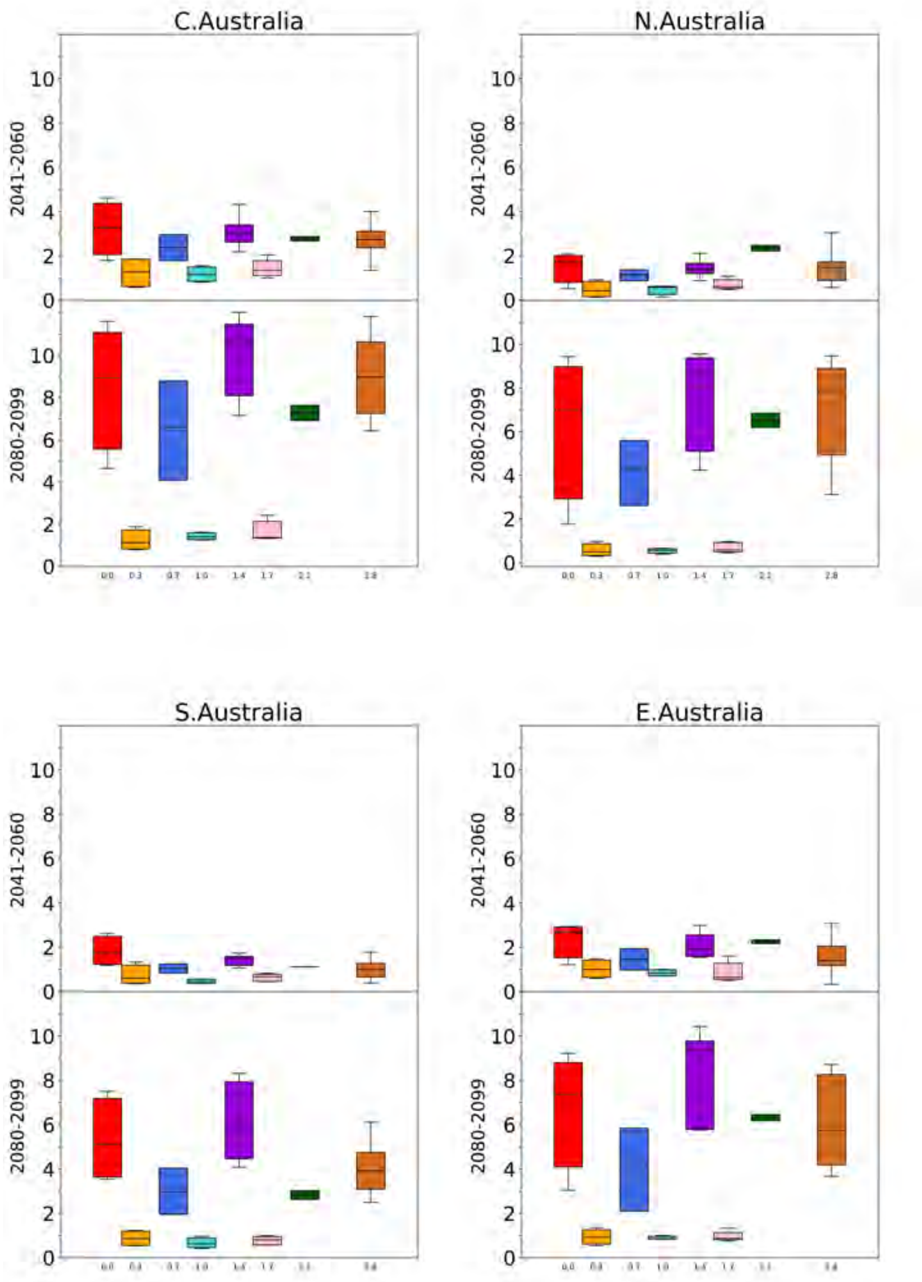


C.Australia
N.Australia
S.Australia
E.Australia
2041-2060
2080-2099

AUS (DF)

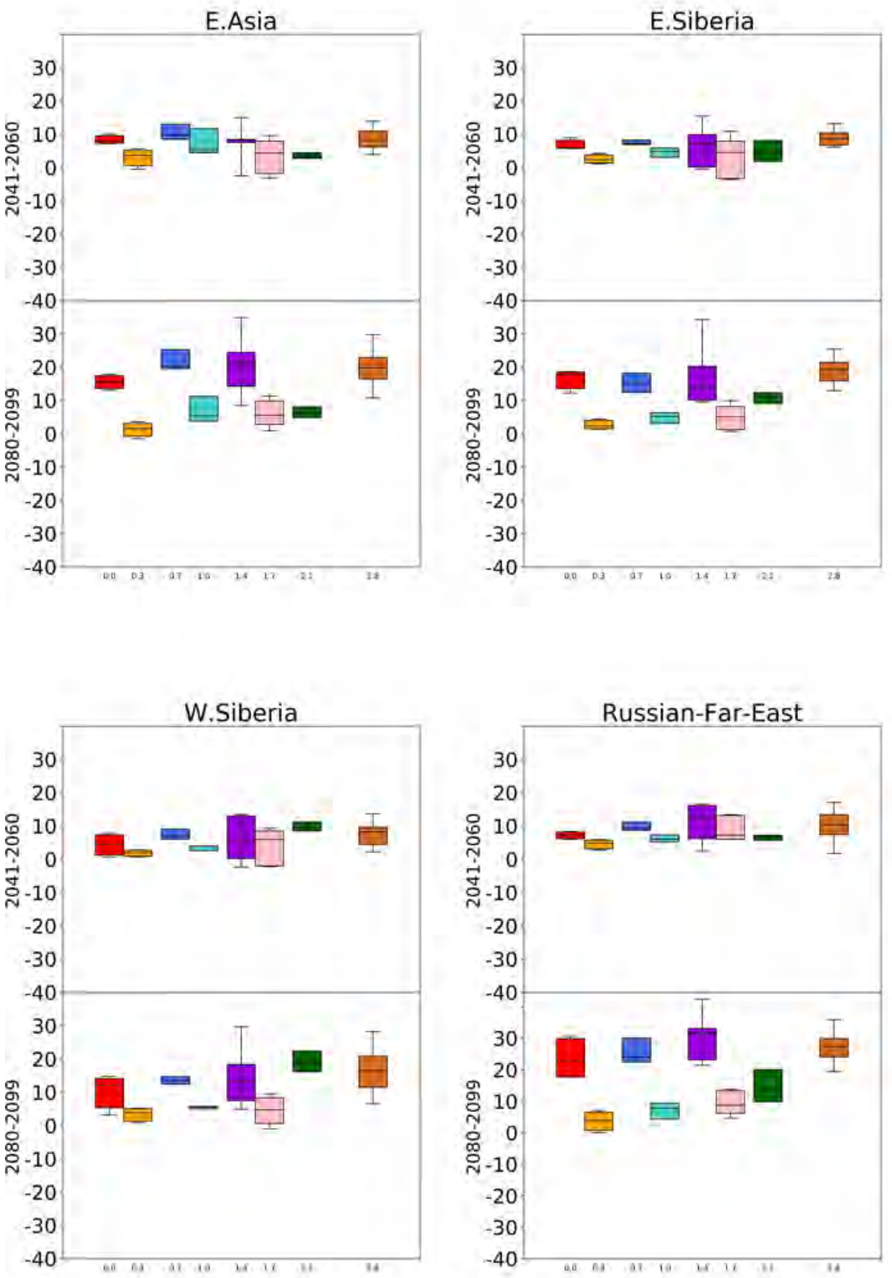

C.Australia
N.Australia
S.Australia
E.Australia
2041-2060
2080-2099

AUS (HW)



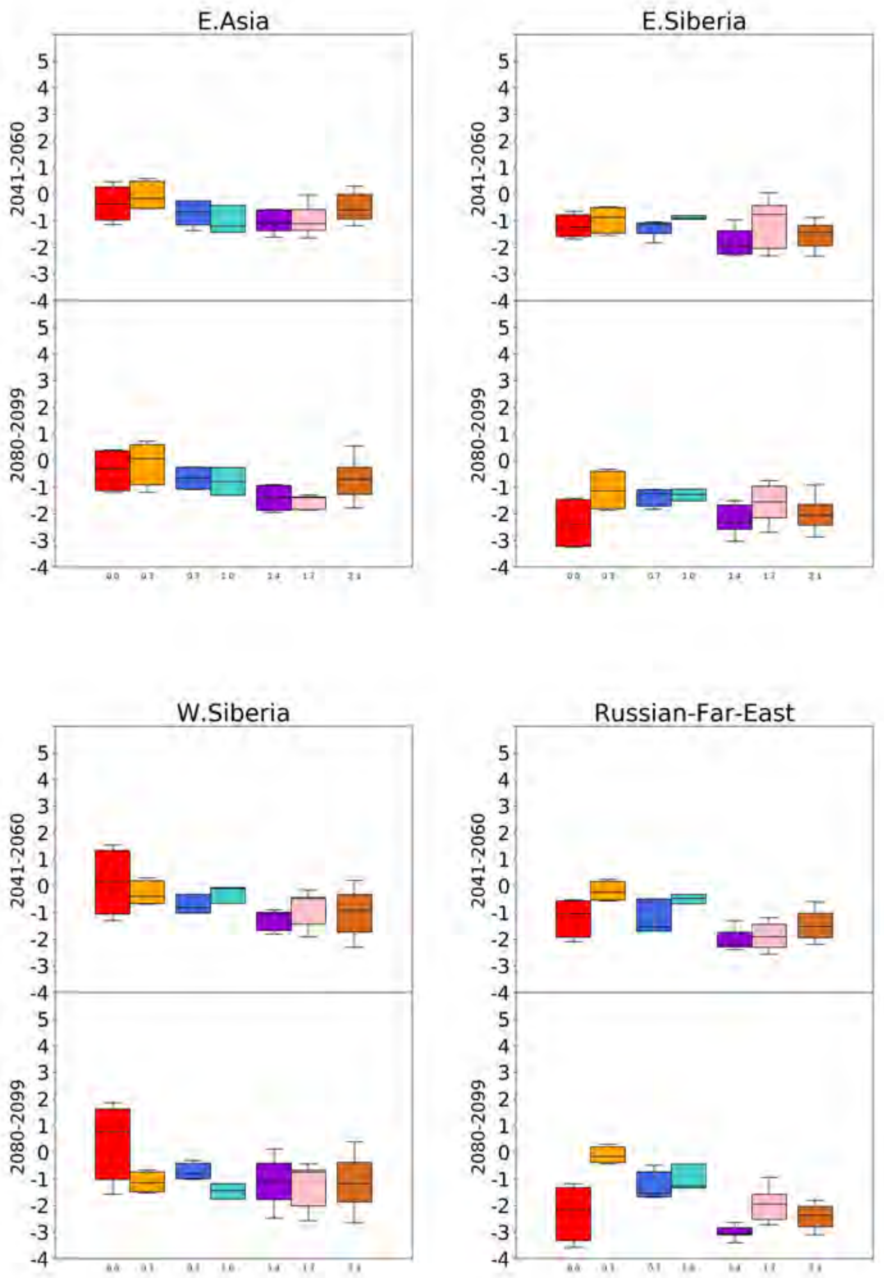
C.Australia
N.Australia
S.Australia
E.Australia
2041-2060
2080-2099
0
2
4
6
8
10

EAS (P99)

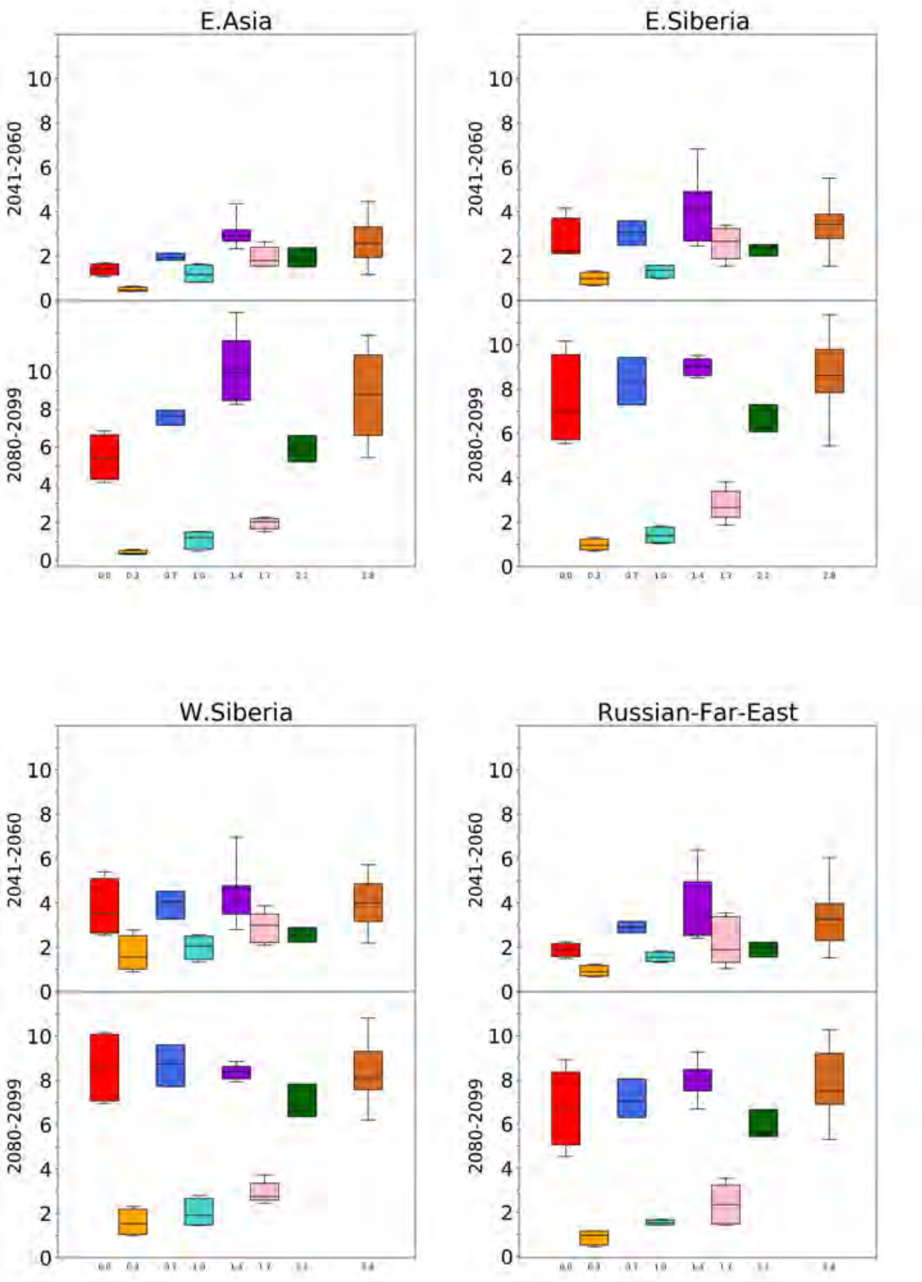
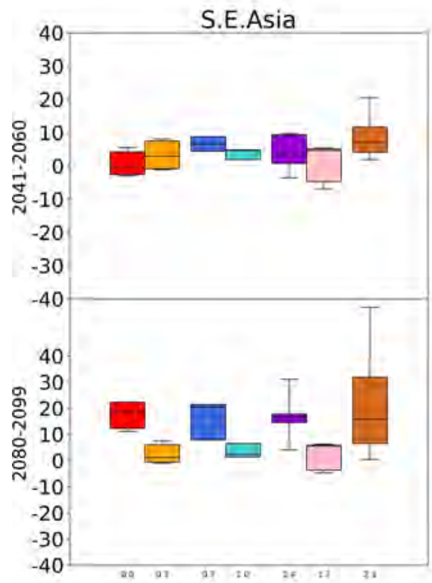


E.Asia
E.Siberia
W.Siberia
Russian-Far-East
2041-2060
2080-2099

EAS (DF)



E.Asia
E.Siberia
W.Siberia
Russian-Far-East
2041-2060
2080-2099
5
4
3
2
1
0
-1
-2
-3
-4

EAS (HW)	
SEA(P99)	

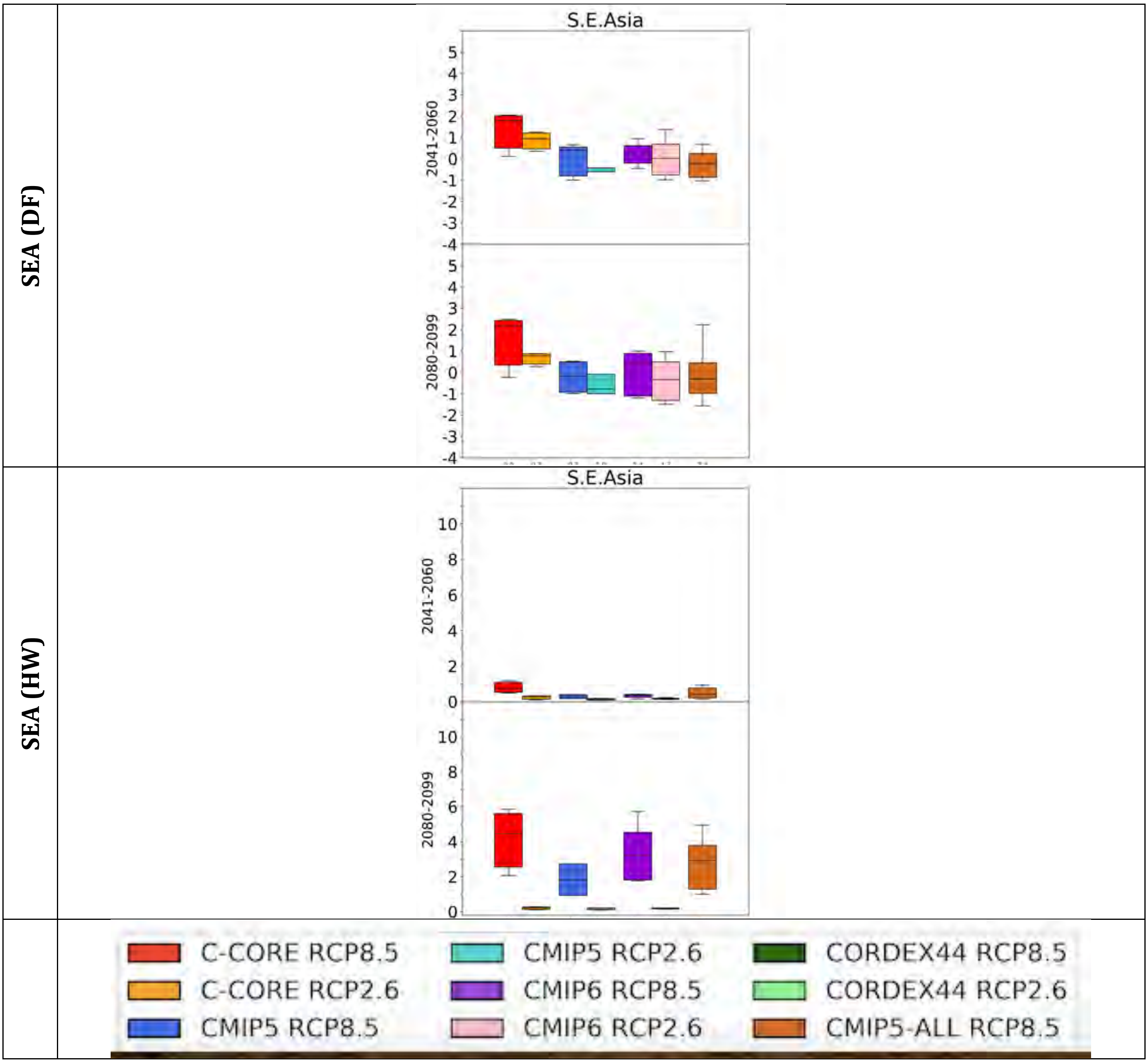
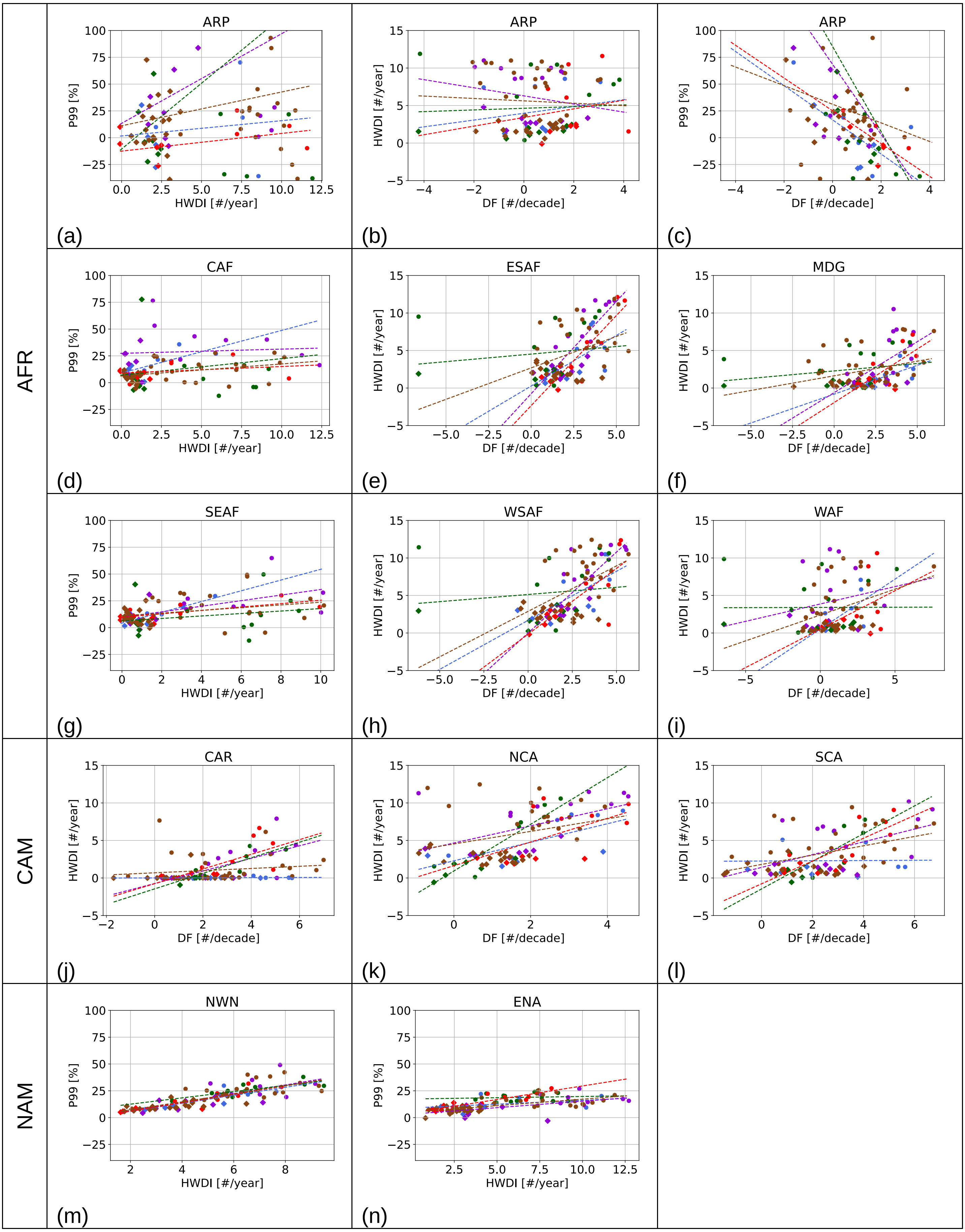
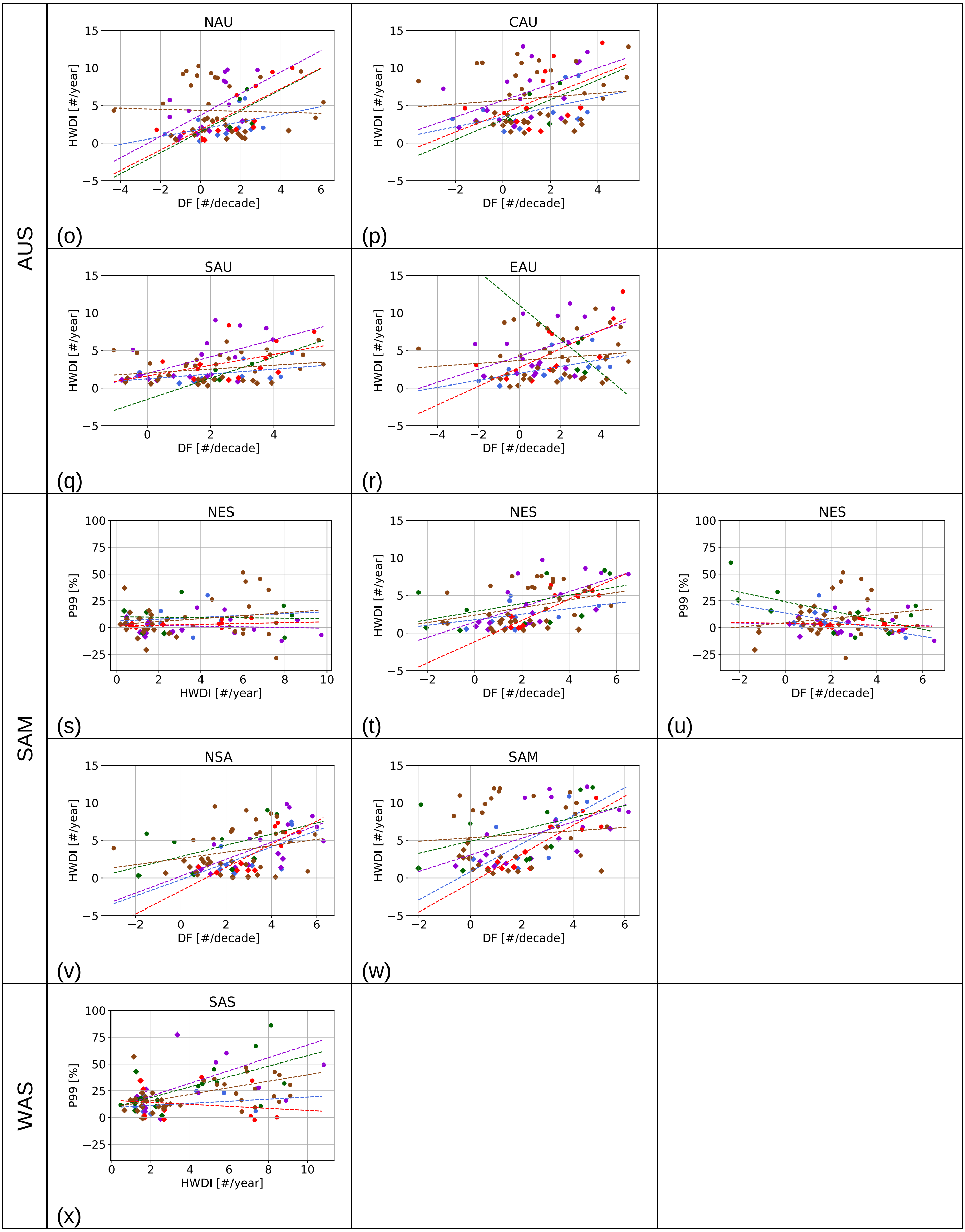


Fig. 12: The P99 (units=percent), the Drough Frequency (units= N. events / decade) and the Heat Waves (units= N.events/year) indices changes for mid (2041-2060) and far (2080-2099) future for all the regions from Iturbine et al. (2020). The colors indicate different ensembles (CORDEX-CORE, CMIP5 , CMIP6, CORDEX 0.44 and the CMIP5 full ensemble) under different scenarios (dark colors for RCP8.5 (SSP585 for CMIP6) and light colors for RCP2.6 (SSP126 for CMIP6)). Colored bars represent the model spread between the 25th and 75th percentiles, while the black bars indicate the 5th, the 50th and 95th percentiles.


AFR
CAM
NAM
ARP
P99 [%]
HWDI [#/year]
(a)
ARP
HWDI [#/year]
DF [#/decade]
(b)
ARP
P99 [%]
DF [#/decade]
(c)
CAF
P99 [%]
HWDI [#/year]
(d)
ESAF
HWDI [#/year]
DF [#/decade]
(e)
MDG
HWDI [#/year]
DF [#/decade]
(f)
SEAF
P99 [%]
HWDI [#/year]
(g)
WSAF
HWDI [#/year]
DF [#/decade]
(h)
WAF
HWDI [#/year]
DF [#/decade]
(i)
CAR
HWDI [#/year]
DF [#/decade]
(j)
NCA
HWDI [#/year]
DF [#/decade]
(k)
SCA
HWDI [#/year]
DF [#/decade]
(l)
NWN
P99 [%]
HWDI [#/year]
(m)
ENA
P99 [%]
HWDI [#/year]
(n)


AUS
NAU
HWDI [#/year]
DF [#/decade]
(o)
CAU
HWDI [#/year]
DF [#/decade]
(p)
SAU
HWDI [#/year]
DF [#/decade]
(q)
EAU
HWDI [#/year]
DF [#/decade]
(r)
SAM
NES
P99 [%]
HWDI [#/year]
(s)
NES
HWDI [#/year]
DF [#/decade]
(t)
NES
P99 [%]
DF [#/decade]
(u)
NSA
HWDI [#/year]
DF [#/decade]
(v)
SAM
HWDI [#/year]
DF [#/decade]
(w)
WAS
SAS
P99 [%]
HWDI [#/year]
(x)

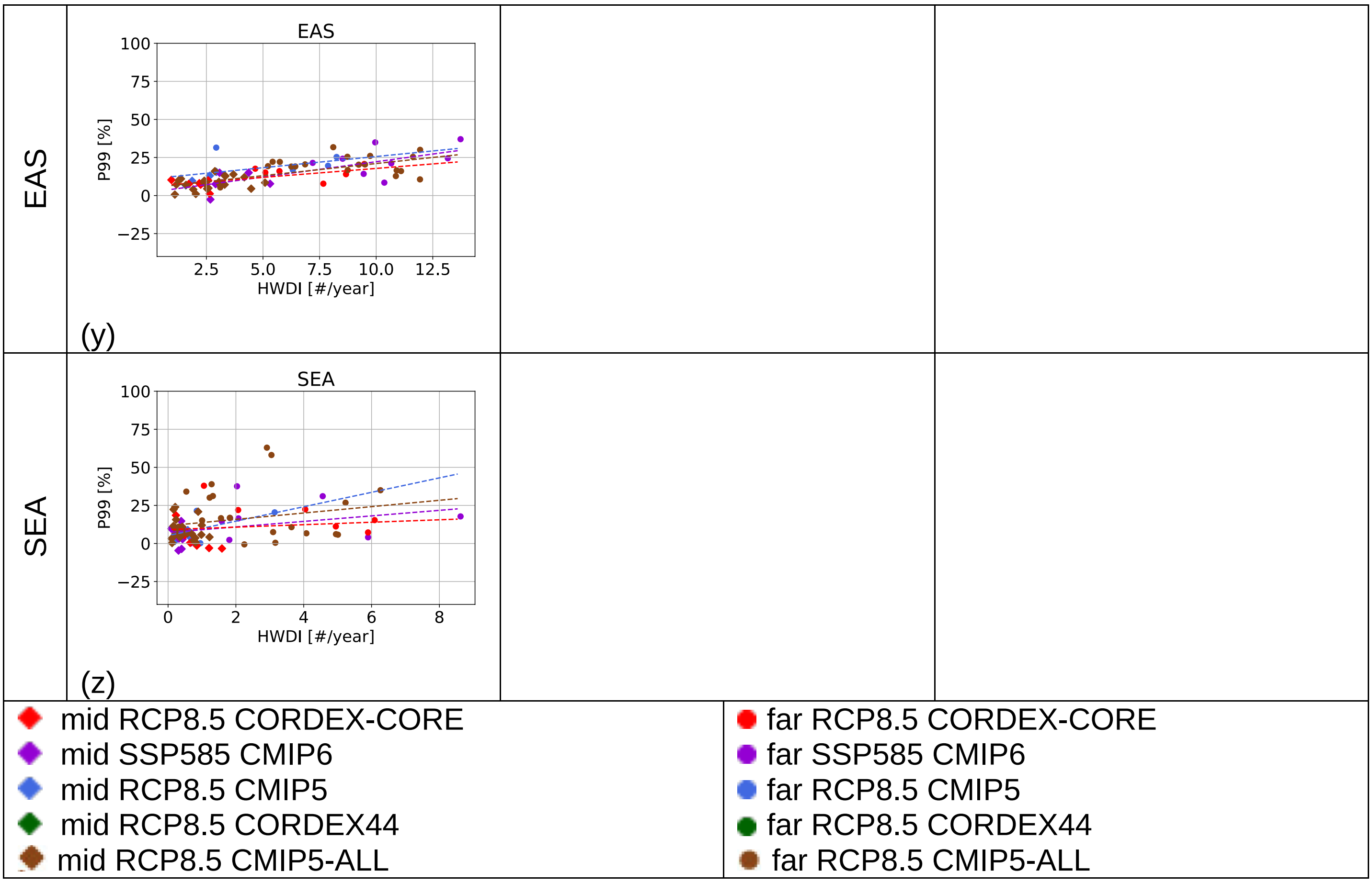


Fig. 13: The scatter plot of the change of HW indicator against P99 indicator, HW against DF , P99 against DF, for a subset of the IPCC regions shown in Figure 1 (bottom panel). All the model ensembles analized in Fig.12 are represented with the same colors. Dots refer to far future; diamonds to mid future; The dashed lines represent the linear regression of each ensemble.

Table

Hazard indices	Description/calculation; *frequency*	Critical sector of exposure	References
GDD *seasonal*	Growing degree days > 5°C	Ecosystems and crop growth	Ruosteenoja et al., 2016
TX>35 *annual*	Number of days with maximum daily temperature above 35 degrees	Human health, infrastructure, ecosystems and agriculture	Deryng et al., 2014 Petitti et al., 2016
P99 *annual*	99th percentile of daily precipitation	Pluvial floodin, ecosystems and crop growth	
DF *decadal*	Drought frequency based on a 6 months SPI	Ecosystems and agriculture	Spinoni et al., (2014)
Q100 *annual*	(1) The daily discharges for each climate experiment are produced for a 130 years period (e.i. 1970-2100). (2) Annual maximum river discharges were selected and a Gumbel distribution was fitted on time slices of 30 years. (3) From the distribution, the peak corresponding to the 100 years return period is calculated.	Flooding, infrastructure	Alfieri et al., 2015 Forzieri et al., 2016
CDD *annual*	Given a threshold Tb=22°C : $CDD_i = \begin{cases} 0 \\ \frac{T_X - T_b}{4} \\ \frac{T_X - T_b}{2} - \frac{T_b - T_N}{4} \\ T_M - T_b \end{cases} \quad if \quad \begin{cases} T_X \leq T_b \\ T_M \leq T_b < T_X \\ T_N \leq T_b < T_M \\ T_N \geq T_b \end{cases}$ then: $CDD = \sum_{i=1}^{365} CDD_i$	Energy consumption for cooling	Spinoni et al., 2015
HDD *annual*	Given a threshold Tb= 15.5°C : $HDD_i = \begin{cases} T_b - T_M \\ \frac{T_b - T_N}{2} - \frac{T_X - T_b}{4} \\ \frac{T_b - T_N}{4} \\ 0 \end{cases} \quad if \quad \begin{cases} T_X \leq T_b \\ T_M \leq T_b < T_X \\ T_N \leq T_b < T_M \\ T_N \geq T_b \end{cases}$ then $HDD = \sum_{i=1}^{365} HDD_i$	Energy demand for heating	Spinoni et al., 2015
HW *annual*	Number of heat waves	Human health, ecosystems	Jacob et al., 2013
NDD *annual*	Number of dry days (precipitation < 1 mm)	Ecosystems and crop growth	

Table 1: Hazard indices description.

Driving GCM	Ensemble	CORDEX-CORE 0.22	CORDEX REGION
MOCH-HadGEM2-ES	r1i1p1	GERICS-REMO2015	AFR, AUS, CAM, EAS, EUR, NAM, SAM, SEA, WAS
MOCH-HadGEM2-ES	r1i1p1	ICTP-RegCM4-6	AFR, AUS, CAM, EAS, NAM, SAM, SEA
MIROC5	r1i1p1	ICTP-RegCM4-6	WAS
MPI-ESM-MR	r1i1p1	ICTP-RegCM4-6	AUS, CAM, EAS, SAM, SEA, WAS
MPI-ESM-LR	r1i1p1	ICTP-RegCM4-6	EUR, NAM
MPI-ESM-LR	r1i1p1	GERICS-REMO2015	AFR, AUS, CAM, EAS, EUR, NAM, SAM, SEA, WAS
GFDL-ESM2M	r1i1p1	ICTP-RegCM4-6	CAM
NCC- NorESM1-M	r1i1p1	GERICS-REMO2015	AFR, AUS, CAM, EAS, EUR, NAM, SAM, SEA, WAS
NCC- NorESM1-M	r1i1p1	ICTP-RegCM4-6	AFR, AUS, EAS, NAM, SAM, SEA, WAS

CMIP6	Ensemble
BCC-CSM2-MR	r1i1p1f1
CNRM-CM6-1(1)	r1i1p1f2
CNRM-ESM2-1	r1i1p1f2
CanESM5	r1i1p1f1
EC-Earth3-Veg	r1i1p1f1
EC-Earth3	r1i1p1f1
GFDL-CM4	r1i1p1f1
IPSL-CM6A-LR	r1i1p1f1
MIROC6	r1i1p1f1
MRI-ESM2-0	r1i1p1f1
NESM3(1)	r1i1p1f1
UKESM1-0-LL	r1i1p1f2

Driving GCM	CORDEX 0.44	CORDEX REGION
MOHC-HadGEM2-ES	CLMcom-CCLM4	AFR(1)
MOHC-HadGEM2-ES	CLMcom-CCLM5	EUR
MOHC-HadGEM2-ES	KNMI-RACMO22E	EUR
MOHC-HadGEM2-ES	REMO2009	AFR
MOHC-HadGEM2-ES	WRFv3.5.1	NAM(1)
MOHC-HadGEM2-ES	SMHI-RCA4	AFR, CAM, EUR, SAM, WAS
MOHC-HadGEM2-ES	RegCM4-3	AFR(1), CAM(1), NAM(1), SAM(1)
MPI-M-MPI-ESM-LR	CLMcom-CCLM4	AFR(1), AUS(1), EUR
MPI-M-MPI-ESM-LR	CLMcom-CCLM5	EUR
MPI-M-MPI-ESM-LR	MPI-CSC-REMO2009	AFR
MPI-M-MPI-ESM-LR	SMHI-RCA4	AFR, CAM, EUR, SAM, WAS
MPI-M-MPI-ESM-LR	CRCM5-UQAM	NAM(1)
MPI-M-MPI-ESM-LR	REMO2009	EUR, SAM(1), WAS
MPI-M-MPI-ESM-LR	WRFv3.5.1	NAM(1)
MPI-M-MPI-ESM-LR	RegCM4-3	NAM(1)
MPI-M-MPI-ESM-MR	RegCM4-3	CAM(1), SAM(1), WAS
MPI-M-MPI-ESM-MR	CRCM5-UQAM	NAM(1)
MIROC5	REMO2009	AFR
MIROC5	CLMcom-CCLM4	EUR
MIROC5	SMHI-RCA4	AFR, CAM, EUR, SAM, WAS

ICHEC-EC-EARTH	SMHI-RCA4	AFR, CAM, NAM, EUR, SAM, WAS(
ICHEC-EC-EARTH	CLMcom-CCLM4	AFR(1), AUS(1), EUR
ICHEC-EC-EARTH	MPI-CSC-REMO2009	AFR(1)
ICHEC-EC-EARTH	KNMI-RACMO22E	EUR
ICHEC-EC-EARTH	DMI-HIRHAM5	AFR(1), EAS(1), EUR, NAM(1)
CCCma-CanESM2	CanRCM4	NAM(1)
CCCma-CanESM2	CRCM5-UQAM	NAM(1)
CCCma-CanESM2	RegCM4-3	WAS(1)
CCCma-CanESM2	SMHI-RCA4	AFR(1), CAM(1), EUR, NAM(1), SAM(1), WAS(1)
GFDL-ESM2M	SMHI-RCA4	AFR(1), CAM(1), SAM(1), WAS(1)
GFDL-ESM2M	RegCM4-3	NAM
GFDL-ESM2M	WRFv3.5.1	NAM
CSIRO-Mk3-6-0	SMHI-RCA4	AFR(1), CAM(1), EUR, SAM(1), WAS(1)
CSIRO-Mk3-6-0	RegCM4-3	WAS
IPSL-IPSL-CM5A-MR	WRF331F	EUR
IPSL-IPSL-CM5A-MR	SMHI-RCA4	AFR(1), CAM(1), EUR, SAM(1), WAS(1)
IPSL-IPSL-CM5A-LR	RegCM4-3	WAS
NCC- NorESM1-M	SMHI-RCA4	AFR, CAM, EUR, SAM, WAS
CNRM-CERFACS	RegCM4-3	WAS(1)
CNRM-CERFACS	CLMcom-CCLM4	AFR(1), EUR
CNRM-CERFACS	SMHI-RCA4	AFR(1), CAM(1), EUR, WAS(1)

CMIP5 Atlas	**Ensemble**
ACCESS1-0(1)	r1i1p1
ACCESS1-3(1)	r1i1p1
BCC-CSM1-1(1)	r1i1p1
BCC-CSM1-1-M(1)	r1i1p1
BNU-ESM(1)	r1i1p1
CanESM2(1)	r1i1p1
CCSM4(1)	r1i1p1
CESM1-BGC(1)	r1i1p1
CMCC-CM(1)	r1i1p1
CMCC-CMS(1)	r1i1p1
CNRM-CM5(1)	r1i1p1
CSIRO-Mk3-6-0(1)	r1i1p1
EC-EARTH(1)	r12i1p1
FGOALS-g2(1)	r1i1p1
GFDL-CM3(1)	r1i1p1
GFDL-ESM2G(1)	r1i1p1
GFDL-ESM2M(1)	r1i1p1
HadGEM2-CC(1)	r1i1p1
HadGEM2-ES(1)	r1i1p1
INMCM4(1)	r1i1p1
IPSL-CM5A-LR(1)	r1i1p1
IPSL-CM5A-MR(1)	r1i1p1
IPSL-CM5B-LR(1)	r1i1p1
MIROC-ESM(1)	r1i1p1
MIROC-ESM-CHEM(1)	r1i1p1
MIROC5(1)	r1i1p1
MPI-ESM-LR(1)	r1i1p1
MPI-ESM-MR(1)	r1i1p1
MRI-CGCM3(1)	r1i1p1
NorESM1-M(1)	r1i1p1

Table 2: the model data from CORDEX-CORE experiment at 0.22 degree resolution with their own driven GCM; the CMIP6 ensemble, the CORDEX data at 0.44 degree resolution and the whole CMIP5 ensemble. (1) RCP8.5 is the only scenario available.

TX35					
Region acronym	**Region**	**Ensemble**	**BIAS (N.days/ year)**	**RMSE (N.days/ year)**	**CORR**
ARP	Arabian-Peninsula	CMIP5-GLB	-17.72	38.48	0.87
ARP	Arabian-Peninsula	CMIP6-GLB	-10.63	35.25	0.89
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	-7.21	35.41	0.88
CAF	Central-Africa	CMIP5-GLB	-7.84	22.88	0.99
CAF	Central-Africa	CMIP6-GLB	12.05	18.50	0.99
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	28.60	36.92	0.97
CAR	Caribbean	CMIP5-GLB	-0.02	1.54	0.23
CAR	Caribbean	CMIP6-GLB	0.79	2.47	0.55
CAR	Caribbean	CORDEX-CORE-CAM-GLB	18.25	26.40	0.62
CAU	C.Australia	CMIP5-GLB	-8.99	16.28	0.95
CAU	C.Australia	CMIP6-GLB	13.93	20.56	0.94
CAU	C.Australia	CORDEX-CORE-AUS-GLB	20.84	27.14	0.92
CNA	C.North-America	CMIP5-CAM	7.97	11.91	0.95
CNA	C.North-America	CMIP6-CAM	8.42	11.78	0.95
CNA	C.North-America	CMIP5-GLB	9.22	11.44	0.95
CNA	C.North-America	CMIP6-GLB	9.12	11.58	0.96
CNA	C.North-America	CORDEX-CORE-NAM-GLB	-4.61	13.39	0.84
CNA	C.North-America	CORDEX-CORE-NAM	-5.46	15.02	0.83
EAS	E.Asia	CMIP5-GLB	0.87	6.50	0.72
EAS	E.Asia	CMIP6-GLB	1.50	5.94	0.74
EAS	E.Asia	CORDEX-CORE-EAS-GLB	6.40	12.78	0.86
EAS	E.Asia	CMIP5-EAS	-0.14	7.69	0.67
EAS	E.Asia	CMIP6-EAS	0.99	6.59	0.72
EAS	E.Asia	CORDEX-CORE-EAS	5.92	11.17	0.85
EAU	E.Australia	CMIP5-GLB	0.83	5.58	0.97
EAU	E.Australia	CMIP6-GLB	13.00	14.98	0.97
EAU	E.Australia	CORDEX-CORE-AUS-GLB	13.07	17.23	0.94
ECA	E.C.Asia	CMIP5-GLB	0.34	8.93	0.90
ECA	E.C.Asia	CMIP6-GLB	6.25	11.05	0.84
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	7.07	11.65	0.96
ECA	E.C.Asia	CMIP5-EAS	-2.58	13.28	0.89
ECA	E.C.Asia	CMIP6-WAS	2.86	14.77	0.84
ECA	E.C.Asia	CORDEX-CORE-WAS	1.63	11.11	0.92
EEU	E.Europe	CMIP5-GLB	3.88	5.70	0.94
EEU	E.Europe	CMIP6-GLB	4.02	6.05	0.97
EEU	E.Europe	CORDEX-CORE-EUR-GLB	-0.79	3.32	0.95
ENA	E.North-America	CMIP5-NAM	1.92	6.02	0.86
ENA	E.North-America	CMIP6-NAM	1.21	4.92	0.84
ENA	E.North-America	CMIP5-GLB	2.49	5.53	0.87
ENA	E.North-America	CMIP6-GLB	1.25	4.34	0.87
ENA	E.North-America	CORDEX-CORE-NAM-GLB	0.81	4.27	0.93
ENA	E.North-America	CORDEX-CORE-NAM	0.58	4.62	0.93
ESAF	E.Southern-Africa	CMIP5-GLB	1.69	9.82	0.78
ESAF	E.Southern-Africa	CMIP6-GLB	10.27	15.22	0.80
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	13.50	27.26	0.71
ESB	E.Siberia	CMIP5-GLB	0.24	0.46	0.91

ESB	E.Siberia	CMIP6-GLB	0.61	1.55	0.80
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	-0.10	0.59	0.72
MDG	Madagascar	CMIP5-GLB	-0.06	3.28	0.53
MDG	Madagascar	CMIP6-GLB	2.60	6.20	0.61
MDG	Madagascar	CORDEX-CORE-AFR-GLB	25.32	38.61	0.85
MED	Mediterranean	CMIP5-GLB	-3.28	18.74	0.95
MED	Mediterranean	CMIP6-GLB	-0.12	15.70	0.97
MED	Mediterranean	CORDEX-CORE-EUR-GLB	-3.11	20.16	0.94
MED	Mediterranean	CMIP5-EUR	4.33	18.02	0.93
MED	Mediterranean	CMIP6-EUR	7.74	17.15	0.94
MED	Mediterranean	CORDEX-CORE-EUR	4.39	17.07	0.94
NAU	N.Australia	CMIP5-GLB	-7.74	26.33	0.94
NAU	N.Australia	CMIP6-GLB	0.80	22.12	0.95
NAU	N.Australia	CORDEX-CORE-AUS-GLB	36.72	47.45	0.90
NCA	N.Central-America	CMIP5-CAM	-24.40	44.78	0.81
NCA	N.Central-America	CMIP6-CAM	-13.91	45.36	0.76
NCA	N.Central-America	CORDEX-CORE-CAM	-7.33	28.96	0.91
NCA	N.Central-America	CMIP5-GLB	-17.00	35.44	0.83
NCA	N.Central-America	CMIP6-GLB	-7.14	31.77	0.82
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	0.98	26.49	0.91
NEAF	N.Eastern-Africa	CMIP5-GLB	-1.96	25.19	0.95
NEAF	N.Eastern-Africa	CMIP6-GLB	29.39	42.41	0.94
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	61.30	79.54	0.90
NEN	N.E.North-America	CMIP5-GLB	0.36	0.96	0.89
NEN	N.E.North-America	CMIP6-GLB	0.11	0.38	0.92
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	-0.02	0.07	0.69
NES	N.E.South-America	CMIP5-GLB	5.48	32.71	0.71
NES	N.E.South-America	CMIP6-GLB	8.30	24.95	0.84
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	39.08	52.63	0.85
NEU	N.Europe	CMIP5-GLB	0.16	0.40	0.70
NEU	N.Europe	CMIP6-GLB	0.06	0.11	0.75
NEU	N.Europe	CORDEX-CORE-EUR-GLB	0.07	0.17	0.84
NEU	N.Europe	CMIP5-EUR	0.16	0.41	0.65
NEU	N.Europe	CMIP6-EUR	0.06	0.11	0.69
NEU	N.Europe	CORDEX-CORE-EUR	0.07	0.16	0.87
NSA	N.South-America	CMIP5-GLB	34.26	46.74	0.45
NSA	N.South-America	CMIP6-GLB	30.88	39.98	0.56
NSA	N.South-America	CORDEX-CORE-SAM-GLB	67.44	91.38	0.48
NWN	N.W.North-America	CMIP5-GLB	0.21	0.55	0.89
NWN	N.W.North-America	CMIP6-GLB	0.05	0.27	0.93
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	-0.03	0.15	0.74
NWS	N.W.South-America	CMIP5-GLB	1.36	14.12	0.77
NWS	N.W.South-America	CMIP6-GLB	-2.75	13.90	0.76
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	16.57	55.48	0.73
NZ	New-Zealand	CMIP5-GLB	-0.001	0.007	0.32
NZ	New-Zealand	CMIP6-GLB	-0.001	0.004	0.00
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	-0.002	0.009	0.50
RAR	Russian-Arctic	CMIP5-GLB	-0.005	0.03	0.53
RAR	Russian-Arctic	CMIP6-GLB	0.01	0.03	0.53
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	0.03	0.04	0.52

RFE	Russian-Far-East	CMIP5-GLB	-0.02	0.14	0.75
RFE	Russian-Far-East	CMIP6-GLB	-0.01	0.10	0.79
RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	0.05	0.15	0.81
SAH	Sahara	CMIP5-GLB	-29.90	41.94	0.91
SAH	Sahara	CMIP6-GLB	-14.31	28.87	0.94
SAH	Sahara	CORDEX-CORE-AFR-GLB	-11.89	34.96	0.89
SAM	South-American-Monsoon	CMIP5-GLB	16.00	26.95	0.79
SAM	South-American-Monsoon	CMIP6-GLB	11.12	20.24	0.87
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	42.22	51.18	0.86
SAS	S.Asia	CMIP5-GLB	6.05	24.30	0.95
SAS	S.Asia	CMIP6-GLB	6.51	25.66	0.95
SAS	S.Asia	CORDEX-CORE-WAS-GLB	17.73	31.07	0.94
SAS	S.Asia	CMIP5-WAS	1.22	22.87	0.94
SAS	S.Asia	CMIP6-WAS	0.81	25.21	0.94
SAS	S.Asia	CORDEX-CORE-WAS	11.69	35.14	0.89
SAU	S.Australia	CMIP5-GLB	2.03	5.59	0.97
SAU	S.Australia	CMIP6-GLB	13.38	16.33	0.97
SAU	S.Australia	CORDEX-CORE-AUS-GLB	16.43	20.09	0.95
SCA	S.Central-America	CMIP5-GLB	-1.12	17.62	0.77
SCA	S.Central-America	CMIP6-GLB	-6.33	20.18	0.73
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	33.08	49.99	0.86
SEA	S.E.Asia	CMIP5-GLB	2.64	12.00	0.93
SEA	S.E.Asia	CMIP6-GLB	-6.20	14.65	0.95
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	18.69	26.79	0.91
SEAF	S.Eastern-Africa	CMIP5-GLB	-1.88	10.88	0.96
SEAF	S.Eastern-Africa	CMIP6-GLB	8.40	15.49	0.93
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	34.72	52.93	0.91
SES	S.E.South-America	CMIP5-GLB	13.63	20.75	0.90
SES	S.E.South-America	CMIP6-GLB	9.75	17.83	0.89
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	13.38	18.75	0.95
SSA	S.South-America	CMIP5-GLB	-0.73	2.04	0.82
SSA	S.South-America	CMIP6-GLB	0.37	1.70	0.91
SSA	S.South-America	CORDEX-CORE-SAM-GLB	-0.29	0.97	0.97
SWS	S.W.South-America	CMIP5-GLB	0.64	1.10	0.88
SWS	S.W.South-America	CMIP6-GLB	3.39	5.64	0.65
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	2.74	7.97	0.65
TIB	Tibetan-Plateau	CMIP5-GLB	1.08	6.28	0.95
TIB	Tibetan-Plateau	CMIP6-GLB	3.73	10.75	0.93
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	3.68	13.25	0.98
TIB	Tibetan-Plateau	CMIP5-WAS	-12.06	22.08	0.77
TIB	Tibetan-Plateau	CMIP6-WAS	-10.82	20.25	0.89
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	-11.41	33.49	0.90
WAF	Western-Africa	CMIP5-GLB	-14.17	28.07	0.98
WAF	Western-Africa	CMIP6-GLB	5.15	26.49	0.97
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	26.40	40.13	0.96
WCA	W.C.Asia	CMIP5-GLB	-2.98	23.36	0.95
WCA	W.C.Asia	CMIP6-GLB	3.42	22.02	0.95

WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	0.63	17.25	0.97
WCE	West&Central-Europe	CMIP5-GLB	5.00	6.63	0.81
WCE	West&Central-Europe	CMIP6-GLB	2.66	4.11	0.91
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	2.80	4.18	0.91
WCE	West&Central-Europe	CMIP5-EUR	4.71	6.33	0.80
WCE	West&Central-Europe	CMIP6-EUR	2.34	3.68	0.89
WCE	West&Central-Europe	CORDEX-CORE-EUR	2.43	3.69	0.92
WNA	W.North-America	CMIP5-CAM	-2.99	14.48	0.86
WNA	W.North-America	CMIP6-CAM	-0.17	15.85	0.84
WNA	W.North-America	CMIP5-GLB	-0.97	10.39	0.90
WNA	W.North-America	CMIP6-GLB	0.26	12.04	0.89
WNA	W.North-America	CORDEX-CORE-NAM-GLB	-1.04	11.64	0.93
WNA	W.North-America	CORDEX-CORE-NAM	-2.00	12.12	0.93
WSAF	W.Southern-Africa	CMIP5-GLB	-4.62	22.56	0.74
WSAF	W.Southern-Africa	CMIP6-GLB	8.46	18.25	0.89
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	0.89	35.30	0.55
WSB	W.Siberia	CMIP5-GLB	3.85	5.40	0.95
WSB	W.Siberia	CMIP6-GLB	5.25	8.04	0.95
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	1.19	3.61	0.95

HW					
Region acronym	**Region**	**Ensemble**	**BIAS (N./year)**	**RMSE (N./year)**	**CORR**
ARP	Arabian-Peninsula	CMIP5_ALL-GLB	0.06	0.18	0.90
ARP	Arabian-Peninsula	CMIP5-GLB	-0.09	0.21	0.85
ARP	Arabian-Peninsula	CMIP6-GLB	0.17	0.41	0.75
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	-0.11	0.40	0.71
ARP	Arabian-Peninsula	CORDEX44-AFR-GLB	0.02	0.36	0.73
CAF	Central-Africa	CMIP5_ALL-GLB	0.02	0.08	0.91
CAF	Central-Africa	CMIP5-GLB	-0.02	0.08	0.95
CAF	Central-Africa	CMIP6-GLB	0.05	0.10	0.92
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	0.01	0.09	0.86
CAF	Central-Africa	CORDEX44-AFR-GLB	0.01	0.06	0.94
CAR	Caribbean	CMIP5_ALL-GLB	-0.37	0.75	0.33
CAR	Caribbean	CMIP5-GLB	-0.39	0.75	0.00
CAR	Caribbean	CMIP6-GLB	-0.05	0.14	0.00
CAR	Caribbean	CORDEX-CORE-CAM-GLB	-0.06	0.26	0.45
CAR	Caribbean	CORDEX44-CAM-GLB	-0.06	0.22	0.47
CAU	C.Australia	CMIP5_ALL-GLB	0.21	0.35	0.78
CAU	C.Australia	CMIP5-GLB	-0.03	0.29	0.76
CAU	C.Australia	CMIP6-GLB	0.42	0.51	0.79
CAU	C.Australia	CORDEX-CORE-AUS-GLB	-0.14	0.35	0.72
CAU	C.Australia	CORDEX44-AUS-GLB	0.66	0.85	0.47
CNA	C.North-America	CMIP5_ALL-CAM	-0.33	0.45	0.96
CNA	C.North-America	CMIP5-CAM	-0.54	0.65	0.93
CNA	C.North-America	CMIP6-CAM	-0.06	0.34	0.95
CNA	C.North-America	CMIP5_ALL-GLB	-0.05	0.27	0.97
CNA	C.North-America	CMIP5-GLB	-0.26	0.37	0.96
CNA	C.North-America	CMIP6-GLB	0.18	0.40	0.92
CNA	C.North-America	CORDEX-CORE-NAM-GLB	-0.22	0.41	0.95

CNA	C.North-America	CORDEX44-NAM-GLB	-0.27	0.37	0.96
CNA	C.North-America	CORDEX-CORE-NAM	-0.52	0.65	0.95
CNA	C.North-America	CORDEX44-NAM	-0.57	0.63	0.97
EAS	E.Asia	CMIP5_ALL-GLB	-0.13	0.41	0.86
EAS	E.Asia	CMIP5-GLB	-0.36	0.52	0.87
EAS	E.Asia	CMIP6-GLB	-0.10	0.41	0.83
EAS	E.Asia	CORDEX-CORE-EAS-GLB	-0.23	0.53	0.76
EAS	E.Asia	CORDEX44-EAS-GLB	0.13	0.42	0.85
EAS	E.Asia	CMIP5_ALL-EAS	-0.24	0.37	0.82
EAS	E.Asia	CMIP5-EAS	-0.47	0.50	0.84
EAS	E.Asia	CMIP6-EAS	-0.17	0.31	0.87
EAS	E.Asia	CORDEX-CORE-EAS	-0.33	0.51	0.76
EAS	E.Asia	CORDEX44-EAS	0.03	0.36	0.85
EAU	E.Australia	CMIP5_ALL-GLB	0.12	0.16	0.97
EAU	E.Australia	CMIP5-GLB	-0.11	0.18	0.97
EAU	E.Australia	CMIP6-GLB	0.25	0.30	0.94
EAU	E.Australia	CORDEX-CORE-AUS-GLB	-0.13	0.29	0.83
EAU	E.Australia	CORDEX44-AUS-GLB	0.26	0.33	0.92
ECA	E.C.Asia	CMIP5_ALL-GLB	-0.58	0.63	0.85
ECA	E.C.Asia	CMIP5-GLB	-0.71	0.77	0.77
ECA	E.C.Asia	CMIP6-GLB	-0.13	0.30	0.87
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	-0.79	0.87	0.74
ECA	E.C.Asia	CORDEX44-WAS-GLB	-0.49	0.57	0.87
ECA	E.C.Asia	CMIP5_ALL-EAS	-0.51	0.61	0.88
ECA	E.C.Asia	CMIP5-EAS	-0.65	0.74	0.85
ECA	E.C.Asia	CMIP6-WAS	0.001	0.26	0.93
ECA	E.C.Asia	CORDEX-CORE-WAS	-0.69	0.79	0.81
ECA	E.C.Asia	CORDEX44-WAS	-0.40	0.55	0.89
EEU	E.Europe	CMIP5_ALL-GLB	-0.25	0.41	0.85
EEU	E.Europe	CMIP5-GLB	-0.55	0.65	0.83
EEU	E.Europe	CMIP6-GLB	-0.16	0.40	0.79
EEU	E.Europe	CORDEX-CORE-EUR-GLB	-0.68	0.77	0.88
ENA	E.North-America	CMIP5_ALL-NAM	-0.32	0.38	0.91
ENA	E.North-America	CMIP5-NAM	-0.38	0.42	0.92
ENA	E.North-America	CMIP6-NAM	-0.27	0.35	0.93
ENA	E.North-America	CMIP5_ALL-GLB	-0.14	0.37	0.88
ENA	E.North-America	CMIP5-GLB	-0.21	0.42	0.87
ENA	E.North-America	CMIP6-GLB	-0.08	0.35	0.89
ENA	E.North-America	CORDEX-CORE-NAM-GLB	-0.28	0.49	0.83
ENA	E.North-America	CORDEX44-NAM-GLB	-0.40	0.52	0.89
ENA	E.North-America	CORDEX-CORE-NAM	-0.50	0.55	0.86
ENA	E.North-America	CORDEX44-NAM	-0.63	0.62	0.92
ESAF	E.Southern-Africa	CMIP5_ALL-GLB	0.25	0.39	0.62
ESAF	E.Southern-Africa	CMIP5-GLB	0.05	0.24	0.60
ESAF	E.Southern-Africa	CMIP6-GLB	0.28	0.38	0.75
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	0.05	0.21	0.56
ESAF	E.Southern-Africa	CORDEX44-AFR-GLB	0.27	0.37	0.73
ESB	E.Siberia	CMIP5_ALL-GLB	-0.86	0.96	0.95
ESB	E.Siberia	CMIP5-GLB	-1.09	1.18	0.94
ESB	E.Siberia	CMIP6-GLB	-0.66	0.79	0.96

ESB	E.Siberia	CORDEX-CORE-EAS-GLB	-1.12	1.03	0.92
ESB	E.Siberia	CORDEX44-EAS-GLB	-1.08	0.70	0.84
MDG	Madagascar	CMIP5_ALL-GLB	0.05	0.19	0.50
MDG	Madagascar	CMIP5-GLB	-0.03	0.16	0.45
MDG	Madagascar	CMIP6-GLB	-0.03	0.27	0.57
MDG	Madagascar	CORDEX-CORE-AFR-GLB	0.06	0.17	0.46
MDG	Madagascar	CORDEX44-AFR-GLB	0.10	0.25	0.48
MED	Mediterranean	CMIP5_ALL-GLB	-0.26	0.61	0.77
MED	Mediterranean	CMIP5-GLB	-0.52	0.79	0.71
MED	Mediterranean	CMIP6-GLB	-0.17	0.57	0.79
MED	Mediterranean	CORDEX-CORE-EUR-GLB	-0.29	0.60	0.78
MED	Mediterranean	CMIP5_ALL-EUR	-1.09	2.09	0.65
MED	Mediterranean	CMIP5-EUR	-1.34	2.24	0.66
MED	Mediterranean	CMIP6-EUR	-1.07	2.13	0.64
MED	Mediterranean	CORDEX-CORE-EUR	-1.21	2.20	0.55
NAU	N.Australia	CMIP5_ALL-GLB	0.16	0.41	0.59
NAU	N.Australia	CMIP5-GLB	0.05	0.36	0.60
NAU	N.Australia	CMIP6-GLB	0.28	0.68	0.52
NAU	N.Australia	CORDEX-CORE-AUS-GLB	0.14	0.32	0.57
NAU	N.Australia	CORDEX44-AUS-GLB	0.51	0.63	0.68
NCA	N.Central-America	CMIP5_ALL-CAM	0.05	0.31	0.89
NCA	N.Central-America	CMIP5-CAM	-0.17	0.37	0.87
NCA	N.Central-America	CMIP6-CAM	0.18	0.42	0.87
NCA	N.Central-America	CORDEX-CORE-CAM	0.04	0.36	0.87
NCA	N.Central-America	CORDEX44-CAM	-0.39	0.53	0.87
NCA	N.Central-America	CMIP5_ALL-GLB	0.19	0.29	0.93
NCA	N.Central-America	CMIP5-GLB	-0.03	0.21	0.94
NCA	N.Central-America	CMIP6-GLB	0.28	0.39	0.94
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	0.16	0.44	0.80
NCA	N.Central-America	CORDEX44-CAM-GLB	-0.28	0.48	0.81
NEAF	N.Eastern-Africa	CMIP5_ALL-GLB	0.08	0.09	0.88
NEAF	N.Eastern-Africa	CMIP5-GLB	0.01	0.05	0.92
NEAF	N.Eastern-Africa	CMIP6-GLB	0.17	0.24	0.68
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	0.06	0.15	0.72
NEAF	N.Eastern-Africa	CORDEX44-AFR-GLB	0.04	0.10	0.83
NEN	N.E.North-America	CMIP5_ALL-GLB	-0.21	0.57	0.78
NEN	N.E.North-America	CMIP5-GLB	-0.23	0.60	0.75
NEN	N.E.North-America	CMIP6-GLB	-0.03	0.55	0.77
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	-0.53	0.72	0.79
NEN	N.E.North-America	CORDEX44-NAM-GLB	-0.17	0.63	0.76
NES	N.E.South-America	CMIP5_ALL-GLB	0.24	0.34	0.71
NES	N.E.South-America	CMIP5-GLB	0.10	0.15	0.62
NES	N.E.South-America	CMIP6-GLB	0.25	0.29	0.72
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	0.18	0.22	0.57
NES	N.E.South-America	CORDEX44-SAM-GLB	0.07	0.12	0.56
NEU	N.Europe	CMIP5_ALL-GLB	0.16	0.53	0.93
NEU	N.Europe	CMIP5-GLB	-0.07	0.49	0.92
NEU	N.Europe	CMIP6-GLB	-0.08	0.44	0.93
NEU	N.Europe	CORDEX-CORE-EUR-GLB	-0.37	0.53	0.92
NEU	N.Europe	CMIP5_ALL-EUR	0.16	0.52	0.94

NEU	N.Europe	CMIP5-EUR	-0.07	0.46	0.94
NEU	N.Europe	CMIP6-EUR	-0.10	0.39	0.95
NEU	N.Europe	CORDEX-CORE-EUR	-0.39	0.54	0.92
NSA	N.South-America	CMIP5_ALL-GLB	0.20	0.27	0.40
NSA	N.South-America	CMIP5-GLB	0.05	0.17	0.45
NSA	N.South-America	CMIP6-GLB	0.12	0.16	0.46
NSA	N.South-America	CORDEX-CORE-SAM-GLB	0.20	0.30	0.48
NSA	N.South-America	CORDEX44-SAM-GLB	0.11	0.14	0.47
NWN	N.W.North-America	CMIP5_ALL-GLB	0.01	0.73	0.85
NWN	N.W.North-America	CMIP5-GLB	0.06	0.68	0.87
NWN	N.W.North-America	CMIP6-GLB	0.15	0.70	0.88
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	-0.30	0.89	0.81
NWN	N.W.North-America	CORDEX44-NAM-GLB	0.02	0.73	0.86
NWS	N.W.South-America	CMIP5_ALL-GLB	0.07	0.14	0.43
NWS	N.W.South-America	CMIP5-GLB	-0.01	0.11	0.41
NWS	N.W.South-America	CMIP6-GLB	0.005	0.18	0.39
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	0.03	0.12	0.51
NWS	N.W.South-America	CORDEX44-SAM-GLB	0.02	0.13	0.42
NZ	New-Zealand	CMIP5_ALL-GLB	0.01	0.04	0.93
NZ	New-Zealand	CMIP5-GLB	-0.01	0.04	0.92
NZ	New-Zealand	CMIP6-GLB	-0.05	0.12	0.62
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	0.11	0.17	0.47
NZ	New-Zealand	CORDEX44-AUS-GLB	0.15	0.20	0.57
RAR	Russian-Arctic	CMIP5_ALL-GLB	-0.38	0.79	0.77
RAR	Russian-Arctic	CMIP5-GLB	-0.54	0.86	0.79
RAR	Russian-Arctic	CMIP6-GLB	-0.36	0.71	0.82
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	-0.34	0.75	0.85
RFE	Russian-Far-East	CMIP5_ALL-GLB	-0.48	0.71	0.93
RFE	Russian-Far-East	CMIP5-GLB	-0.35	0.67	0.91
RFE	Russian-Far-East	CMIP6-GLB	-0.39	0.58	0.96
RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	-0.86	0.60	0.86
RFE	Russian-Far-East	CORDEX44-EAS-GLB	-0.98	0.62	0.83
SAH	Sahara	CMIP5_ALL-GLB	-0.11	0.40	0.79
SAH	Sahara	CMIP5-GLB	-0.23	0.46	0.76
SAH	Sahara	CMIP6-GLB	0.08	0.36	0.79
SAH	Sahara	CORDEX-CORE-AFR-GLB	-0.33	0.51	0.70
SAH	Sahara	CORDEX44-AFR-GLB	-0.02	0.36	0.77
SAM	South-American-Monsoon	CMIP5_ALL-GLB	0.22	0.30	0.91
SAM	South-American-Monsoon	CMIP5-GLB	-0.01	0.23	0.94
SAM	South-American-Monsoon	CMIP6-GLB	0.19	0.24	0.94
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	0.15	0.29	0.81
SAM	South-American-Monsoon	CORDEX44-SAM-GLB	0.01	0.23	0.93
SAS	S.Asia	CMIP5_ALL-GLB	0.29	0.36	0.85
SAS	S.Asia	CMIP5-GLB	0.05	0.25	0.81
SAS	S.Asia	CMIP6-GLB	0.33	0.40	0.91

SAS	S.Asia	CORDEX-CORE-WAS-GLB	0.18	0.35	0.77
SAS	S.Asia	CORDEX44-WAS-GLB	0.21	0.38	0.78
SAS	S.Asia	CMIP5_ALL-WAS	0.26	1.04	0.52
SAS	S.Asia	CMIP5-WAS	0.03	1.00	0.53
SAS	S.Asia	CMIP6-WAS	0.35	0.90	0.54
SAS	S.Asia	CORDEX-CORE-WAS	0.23	0.74	0.60
SAS	S.Asia	CORDEX44-WAS	0.26	0.75	0.58
SAU	S.Australia	CMIP5_ALL-GLB	-0.09	0.33	0.82
SAU	S.Australia	CMIP5-GLB	-0.20	0.40	0.76
SAU	S.Australia	CMIP6-GLB	0.06	0.32	0.85
SAU	S.Australia	CORDEX-CORE-AUS-GLB	0.02	0.37	0.76
SAU	S.Australia	CORDEX44-AUS-GLB	0.11	0.39	0.75
SCA	S.Central-America	CMIP5_ALL-GLB	0.08	0.46	0.55
SCA	S.Central-America	CMIP5-GLB	-0.04	0.45	0.54
SCA	S.Central-America	CMIP6-GLB	0.02	0.34	0.49
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	0.17	0.34	0.45
SCA	S.Central-America	CORDEX44-CAM-GLB	0.02	0.21	0.48
SEA	S.E.Asia	CMIP5_ALL-GLB	0.09	0.26	0.64
SEA	S.E.Asia	CMIP5-GLB	0.02	0.16	0.70
SEA	S.E.Asia	CMIP6-GLB	0.03	0.24	0.54
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	0.16	0.29	0.56
SEAF	S.Eastern-Africa	CMIP5_ALL-GLB	0.08	0.09	0.62
SEAF	S.Eastern-Africa	CMIP5-GLB	0.01	0.03	0.56
SEAF	S.Eastern-Africa	CMIP6-GLB	0.11	0.12	0.39
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	0.06	0.11	0.59
SEAF	S.Eastern-Africa	CORDEX44-AFR-GLB	0.02	0.06	0.48
SES	S.E.South-America	CMIP5_ALL-GLB	0.08	0.35	0.88
SES	S.E.South-America	CMIP5-GLB	-0.30	0.51	0.81
SES	S.E.South-America	CMIP6-GLB	0.15	0.34	0.91
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	-0.10	0.40	0.84
SES	S.E.South-America	CORDEX44-SAM-GLB	-0.10	0.36	0.87
SSA	S.South-America	CMIP5_ALL-GLB	-0.07	0.32	0.66
SSA	S.South-America	CMIP5-GLB	-0.06	0.32	0.68
SSA	S.South-America	CMIP6-GLB	0.02	0.15	0.84
SSA	S.South-America	CORDEX-CORE-SAM-GLB	-0.07	0.18	0.79
SSA	S.South-America	CORDEX44-SAM-GLB	0.01	0.17	0.80
SWS	S.W.South-America	CMIP5_ALL-GLB	0.23	0.30	0.77
SWS	S.W.South-America	CMIP5-GLB	0.21	0.27	0.85
SWS	S.W.South-America	CMIP6-GLB	0.17	0.35	0.59
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	0.18	0.42	0.55
SWS	S.W.South-America	CORDEX44-SAM-GLB	0.15	0.35	0.59
TIB	Tibetan-Plateau	CMIP5_ALL-GLB	0.01	0.31	0.58
TIB	Tibetan-Plateau	CMIP5-GLB	-0.15	0.37	0.49
TIB	Tibetan-Plateau	CMIP6-GLB	0.16	0.35	0.77
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	0.01	0.39	0.59
TIB	Tibetan-Plateau	CORDEX44-WAS-GLB	-0.13	0.35	0.67
TIB	Tibetan-Plateau	CMIP5_ALL-WAS	-0.01	1.25	0.48
TIB	Tibetan-Plateau	CMIP5-WAS	-0.17	1.29	0.39
TIB	Tibetan-Plateau	CMIP6-WAS	-0.55	2.29	0.67
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	-0.56	2.13	0.45

TIB	Tibetan-Plateau	CORDEX44-WAS	-0.73	2.15	0.61
WAF	Western-Africa	CMIP5_ALL-GLB	-0.04	0.11	0.97
WAF	Western-Africa	CMIP5-GLB	-0.06	0.13	0.96
WAF	Western-Africa	CMIP6-GLB	-0.004	0.14	0.92
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	-0.05	0.17	0.90
WAF	Western-Africa	CORDEX44-AFR-GLB	-0.01	0.10	0.95
WCA	W.C.Asia	CMIP5_ALL-GLB	-0.22	0.55	0.83
WCA	W.C.Asia	CMIP5-GLB	-0.52	0.71	0.85
WCA	W.C.Asia	CMIP6-GLB	0.09	0.52	0.83
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	-0.42	0.67	0.82
WCA	W.C.Asia	CORDEX44-WAS-GLB	-0.30	0.68	0.73
WCE	West&Central-Europe	CMIP5_ALL-GLB	-0.25	0.41	0.93
WCE	West&Central-Europe	CMIP5-GLB	-0.44	0.54	0.93
WCE	West&Central-Europe	CMIP6-GLB	-0.13	0.35	0.94
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	-0.37	0.52	0.89
WCE	West&Central-Europe	CMIP5_ALL-EUR	-0.24	0.39	0.94
WCE	West&Central-Europe	CMIP5-EUR	-0.42	0.51	0.94
WCE	West&Central-Europe	CMIP6-EUR	-0.11	0.35	0.94
WCE	West&Central-Europe	CORDEX-CORE-EUR	-0.33	0.50	0.88
WNA	W.North-America	CMIP5_ALL-CAM	-0.66	0.83	0.78
WNA	W.North-America	CMIP5-CAM	-0.86	1.02	0.72
WNA	W.North-America	CMIP6-CAM	-0.44	0.63	0.87
WNA	W.North-America	CMIP5_ALL-GLB	-0.49	0.77	0.75
WNA	W.North-America	CMIP5-GLB	-0.69	0.95	0.67
WNA	W.North-America	CMIP6-GLB	-0.29	0.56	0.89
WNA	W.North-America	CORDEX-CORE-NAM-GLB	-0.30	0.89	0.53
WNA	W.North-America	CORDEX44-NAM-GLB	-0.53	0.85	0.70
WNA	W.North-America	CORDEX-CORE-NAM	-0.42	0.89	0.58
WNA	W.North-America	CORDEX44-NAM	-0.64	0.90	0.73
WSAF	W.Southern-Africa	CMIP5_ALL-GLB	0.004	0.49	0.57
WSAF	W.Southern-Africa	CMIP5-GLB	-0.11	0.48	0.62
WSAF	W.Southern-Africa	CMIP6-GLB	0.13	0.49	0.57
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	-0.15	0.29	0.74
WSAF	W.Southern-Africa	CORDEX44-AFR-GLB	0.07	0.33	0.67
WSB	W.Siberia	CMIP5_ALL-GLB	-0.54	0.70	0.88
WSB	W.Siberia	CMIP5-GLB	-0.76	0.85	0.90
WSB	W.Siberia	CMIP6-GLB	-0.44	0.59	0.93
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	-1.26	1.03	0.84
WSB	W.Siberia	CORDEX44-EAS-GLB	-1.01	0.63	0.87

GDD					
Region acronym	**Region**	**Ensemble**	**BIAS (Deg./ year)**	**RMSE (Deg./ year)**	**CORR**
ARP	Arabian-Peninsula	CMIP5-GLB	-2.67	15.56	0.87
ARP	Arabian-Peninsula	CMIP6-GLB	-1.56	14.78	0.90
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	-3.33	13.63	0.94
CAF	Central-Africa	CMIP5-GLB	-10.01	12.69	0.92
CAF	Central-Africa	CMIP6-GLB	-4.23	8.76	0.91
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	-1.43	12.51	0.88
CAR	Caribbean	CMIP5-GLB	8.82	18.53	0.53

CAR	Caribbean	CMIP6-GLB	2.92	14.54	0.66
CAR	Caribbean	CORDEX-CORE-CAM-GLB	-8.49	11.94	0.86
CAU	C.Australia	CMIP5-GLB	-2.88	9.38	0.95
CAU	C.Australia	CMIP6-GLB	3.91	10.35	0.95
CAU	C.Australia	CORDEX-CORE-AUS-GLB	6.29	11.21	0.94
CNA	C.North-America	CMIP5-CAM	9.56	13.49	0.99
CNA	C.North-America	CMIP6-CAM	6.45	9.91	0.99
CNA	C.North-America	CMIP5-GLB	10.29	13.28	0.99
CNA	C.North-America	CMIP6-GLB	6.36	8.90	0.99
CNA	C.North-America	CORDEX-CORE-NAM-GLB	-11.61	13.67	0.99
CNA	C.North-America	CORDEX-CORE-NAM	-9.86	11.61	0.99
EAS	E.Asia	CMIP5-GLB	-8.16	17.82	0.96
EAS	E.Asia	CMIP6-GLB	-9.95	17.82	0.97
EAS	E.Asia	CORDEX-CORE-EAS-GLB	-15.06	19.31	0.98
EAS	E.Asia	CMIP5-EAS	-6.63	14.12	0.98
EAS	E.Asia	CMIP6-EAS	-6.52	15.22	0.98
EAS	E.Asia	CORDEX-CORE-EAS	-10.46	12.07	0.99
EAU	E.Australia	CMIP5-GLB	-6.69	11.58	0.96
EAU	E.Australia	CMIP6-GLB	-0.64	12.51	0.96
EAU	E.Australia	CORDEX-CORE-AUS-GLB	-7.96	12.79	0.96
ECA	E.C.Asia	CMIP5-GLB	-0.07	29.30	0.81
ECA	E.C.Asia	CMIP6-GLB	-10.25	33.71	0.82
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	-0.23	19.06	0.97
ECA	E.C.Asia	CMIP5-EAS	0.50	36.08	0.86
ECA	E.C.Asia	CMIP6-WAS	-7.38	32.40	0.88
ECA	E.C.Asia	CORDEX-CORE-WAS	-3.51	12.13	0.99
EEU	E.Europe	CMIP5-GLB	5.97	10.37	0.99
EEU	E.Europe	CMIP6-GLB	3.98	8.72	0.99
EEU	E.Europe	CORDEX-CORE-EUR-GLB	-4.32	8.97	0.99
ENA	E.North-America	CMIP5-NAM	0.17	10.86	0.99
ENA	E.North-America	CMIP6-NAM	-1.10	9.10	0.99
ENA	E.North-America	CMIP5-GLB	5.88	10.57	0.99
ENA	E.North-America	CMIP6-GLB	4.20	8.66	0.99
ENA	E.North-America	CORDEX-CORE-NAM-GLB	-13.83	17.13	0.99
ENA	E.North-America	CORDEX-CORE-NAM	-18.08	14.54	0.99
ESAF	E.Southern-Africa	CMIP5-GLB	-0.17	13.66	0.92
ESAF	E.Southern-Africa	CMIP6-GLB	0.30	11.67	0.93
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	1.85	8.11	0.98
ESB	E.Siberia	CMIP5-GLB	-3.60	10.70	0.89
ESB	E.Siberia	CMIP6-GLB	-4.65	10.01	0.94
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	-6.25	11.08	0.97
MDG	Madagascar	CMIP5-GLB	-1.08	12.47	0.86
MDG	Madagascar	CMIP6-GLB	0.28	13.94	0.84
MDG	Madagascar	CORDEX-CORE-AFR-GLB	-5.73	11.82	0.95
MED	Mediterranean	CMIP5-GLB	2.99	18.15	0.94
MED	Mediterranean	CMIP6-GLB	2.25	17.66	0.95
MED	Mediterranean	CORDEX-CORE-EUR-GLB	-9.28	17.19	0.97
MED	Mediterranean	CMIP5-EUR	11.81	19.92	0.94
MED	Mediterranean	CMIP6-EUR	10.20	18.54	0.94
MED	Mediterranean	CORDEX-CORE-EUR	0.89	11.90	0.97

NAU	N.Australia	CMIP5-GLB	-6.58	9.96	0.88
NAU	N.Australia	CMIP6-GLB	-5.45	8.84	0.91
NAU	N.Australia	CORDEX-CORE-AUS-GLB	-5.12	9.13	0.95
NCA	N.Central-America	CMIP5-CAM	-4.72	24.10	0.85
NCA	N.Central-America	CMIP6-CAM	5.67	28.64	0.84
NCA	N.Central-America	CORDEX-CORE-CAM	3.47	17.78	0.94
NCA	N.Central-America	CMIP5-GLB	-15.07	25.20	0.88
NCA	N.Central-America	CMIP6-GLB	-8.58	24.26	0.87
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	-10.05	18.79	0.95
NEAF	N.Eastern-Africa	CMIP5-GLB	-1.43	14.45	0.96
NEAF	N.Eastern-Africa	CMIP6-GLB	5.64	19.08	0.93
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	5.80	13.55	0.97
NEN	N.E.North-America	CMIP5-GLB	-0.56	9.42	0.97
NEN	N.E.North-America	CMIP6-GLB	1.61	8.11	0.98
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	-5.30	15.10	0.91
NES	N.E.South-America	CMIP5-GLB	-6.49	11.00	0.86
NES	N.E.South-America	CMIP6-GLB	-9.53	12.37	0.89
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	-9.15	13.29	0.92
NEU	N.Europe	CMIP5-GLB	-0.26	7.44	0.97
NEU	N.Europe	CMIP6-GLB	-2.62	6.71	0.97
NEU	N.Europe	CORDEX-CORE-EUR-GLB	-8.59	10.78	0.97
NEU	N.Europe	CMIP5-EUR	1.73	7.22	0.97
NEU	N.Europe	CMIP6-EUR	-0.58	5.88	0.97
NEU	N.Europe	CORDEX-CORE-EUR	-6.42	8.79	0.98
NSA	N.South-America	CMIP5-GLB	-3.91	13.16	0.72
NSA	N.South-America	CMIP6-GLB	-3.03	11.82	0.78
NSA	N.South-America	CORDEX-CORE-SAM-GLB	-5.53	11.14	0.88
NWN	N.W.North-America	CMIP5-GLB	-3.48	10.99	0.92
NWN	N.W.North-America	CMIP6-GLB	-2.43	9.95	0.93
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	-14.31	19.28	0.92
NWS	N.W.South-America	CMIP5-GLB	-3.99	35.05	0.87
NWS	N.W.South-America	CMIP6-GLB	-5.01	38.57	0.86
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	-13.94	24.36	0.97
NZ	New-Zealand	CMIP5-GLB	10.91	14.97	0.92
NZ	New-Zealand	CMIP6-GLB	8.76	16.02	0.88
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	-8.61	13.11	0.97
RAR	Russian-Arctic	CMIP5-GLB	-1.17	5.47	0.94
RAR	Russian-Arctic	CMIP6-GLB	0.16	5.23	0.95
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	1.65	6.63	0.98
RFE	Russian-Far-East	CMIP5-GLB	-8.37	12.31	0.96
RFE	Russian-Far-East	CMIP6-GLB	-3.86	10.15	0.96
RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	6.48	9.78	0.98
SAH	Sahara	CMIP5-GLB	-9.45	17.82	0.87
SAH	Sahara	CMIP6-GLB	-5.86	12.68	0.93
SAH	Sahara	CORDEX-CORE-AFR-GLB	-8.67	15.35	0.91
SAM	South-American-Monsoon	CMIP5-GLB	-2.45	15.43	0.97
SAM	South-American-Monsoon	CMIP6-GLB	-6.50	17.14	0.97
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	-9.22	15.04	0.99
SAS	S.Asia	CMIP5-GLB	-0.05	19.74	0.94
SAS	S.Asia	CMIP6-GLB	-3.61	18.77	0.93

SAS	S.Asia	CORDEX-CORE-WAS-GLB	-2.50	15.01	0.98
SAS	S.Asia	CMIP5-WAS	-6.14	25.72	0.87
SAS	S.Asia	CMIP6-WAS	-7.67	21.73	0.85
SAS	S.Asia	CORDEX-CORE-WAS	-6.29	20.05	0.89
SAU	S.Australia	CMIP5-GLB	11.10	19.69	0.93
SAU	S.Australia	CMIP6-GLB	12.59	17.75	0.94
SAU	S.Australia	CORDEX-CORE-AUS-GLB	10.91	16.97	0.96
SCA	S.Central-America	CMIP5-GLB	7.39	26.74	0.91
SCA	S.Central-America	CMIP6-GLB	-1.91	19.57	0.84
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	-15.50	19.98	0.96
SEA	S.E.Asia	CMIP5-GLB	-5.11	14.31	0.73
SEA	S.E.Asia	CMIP6-GLB	-6.20	16.76	0.74
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	-19.61	22.93	0.91
SEAF	S.Eastern-Africa	CMIP5-GLB	-2.66	18.14	0.91
SEAF	S.Eastern-Africa	CMIP6-GLB	-5.37	15.52	0.90
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	3.30	13.25	0.95
SES	S.E.South-America	CMIP5-GLB	4.04	16.91	0.93
SES	S.E.South-America	CMIP6-GLB	1.76	16.55	0.93
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	-19.81	21.39	0.99
SSA	S.South-America	CMIP5-GLB	-5.96	13.98	0.97
SSA	S.South-America	CMIP6-GLB	-7.95	12.91	0.97
SSA	S.South-America	CORDEX-CORE-SAM-GLB	-23.10	24.43	0.99
SWS	S.W.South-America	CMIP5-GLB	17.08	32.65	0.75
SWS	S.W.South-America	CMIP6-GLB	9.17	33.43	0.73
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	-14.43	25.37	0.94
TIB	Tibetan-Plateau	CMIP5-GLB	-12.86	27.66	0.95
TIB	Tibetan-Plateau	CMIP6-GLB	-10.13	32.09	0.92
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	-20.60	28.22	0.98
TIB	Tibetan-Plateau	CMIP5-WAS	19.73	14.57	0.83
TIB	Tibetan-Plateau	CMIP6-WAS	19.97	22.38	0.72
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	13.35	11.37	0.96
WAF	Western-Africa	CMIP5-GLB	-7.40	10.18	0.96
WAF	Western-Africa	CMIP6-GLB	-2.41	7.73	0.97
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	-4.12	8.06	0.97
WCA	W.C.Asia	CMIP5-GLB	0.76	25.86	0.93
WCA	W.C.Asia	CMIP6-GLB	-0.20	24.87	0.93
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	-4.72	24.16	0.97
WCE	West&Central-Europe	CMIP5-GLB	10.34	14.39	0.91
WCE	West&Central-Europe	CMIP6-GLB	3.25	10.31	0.91
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	4.64	10.35	0.95
WCE	West&Central-Europe	CMIP5-EUR	10.99	15.44	0.90
WCE	West&Central-Europe	CMIP6-EUR	4.17	12.27	0.88
WCE	West&Central-Europe	CORDEX-CORE-EUR	5.84	8.85	0.98
WNA	W.North-America	CMIP5-CAM	4.04	24.83	0.88
WNA	W.North-America	CMIP6-CAM	4.08	25.05	0.86
WNA	W.North-America	CMIP5-GLB	0.54	17.10	0.91
WNA	W.North-America	CMIP6-GLB	-1.60	19.73	0.89
WNA	W.North-America	CORDEX-CORE-NAM-GLB	-10.83	18.49	0.96
WNA	W.North-America	CORDEX-CORE-NAM	-4.21	14.19	0.97
WSAF	W.Southern-Africa	CMIP5-GLB	1.58	18.84	0.73

WSAF	W.Southern-Africa	CMIP6-GLB	2.84	14.24	0.87
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	5.14	15.75	0.84
WSB	W.Siberia	CMIP5-GLB	7.37	12.73	0.98
WSB	W.Siberia	CMIP6-GLB	5.33	11.87	0.98
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	12.77	9.55	0.99

CDD					
Region acronym	**Region**	**Ensemble**	**BIAS (Deg./ year)**	**RMSE (Deg./ year)**	**CORR**
ARP	Arabian-Peninsula	CMIP5-GLB	-10.69	22.97	0.84
ARP	Arabian-Peninsula	CMIP6-GLB	-2.54	21.03	0.87
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	-4.05	16.47	0.93
CAF	Central-Africa	CMIP5-GLB	-9.69	16.15	0.95
CAF	Central-Africa	CMIP6-GLB	0.97	10.85	0.96
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	6.85	12.61	0.96
CAR	Caribbean	CMIP5-GLB	22.34	36.43	0.54
CAR	Caribbean	CMIP6-GLB	8.83	23.83	0.62
CAR	Caribbean	CORDEX-CORE-CAM-GLB	-3.76	14.50	0.77
CAU	C.Australia	CMIP5-GLB	-11.03	13.86	0.97
CAU	C.Australia	CMIP6-GLB	3.88	10.65	0.96
CAU	C.Australia	CORDEX-CORE-AUS-GLB	7.37	11.96	0.95
CNA	C.North-America	CMIP5-CAM	8.07	9.52	0.97
CNA	C.North-America	CMIP6-CAM	4.36	6.02	0.98
CNA	C.North-America	CMIP5-GLB	7.42	9.20	0.97
CNA	C.North-America	CMIP6-GLB	3.87	5.28	0.99
CNA	C.North-America	CORDEX-CORE-NAM-GLB	-4.33	5.89	0.98
CNA	C.North-America	CORDEX-CORE-NAM	-3.33	5.10	0.98
EAS	E.Asia	CMIP5-GLB	-4.07	10.58	0.90
EAS	E.Asia	CMIP6-GLB	-3.29	8.45	0.95
EAS	E.Asia	CORDEX-CORE-EAS-GLB	-2.59	6.26	0.97
EAS	E.Asia	CMIP5-EAS	0.89	11.36	0.84
EAS	E.Asia	CMIP6-EAS	2.11	11.89	0.82
EAS	E.Asia	CORDEX-CORE-EAS	3.14	12.80	0.84
EAU	E.Australia	CMIP5-GLB	-10.36	13.82	0.94
EAU	E.Australia	CMIP6-GLB	-2.29	9.01	0.96
EAU	E.Australia	CORDEX-CORE-AUS-GLB	-2.43	8.20	0.96
ECA	E.C.Asia	CMIP5-GLB	0.69	8.20	0.80
ECA	E.C.Asia	CMIP6-GLB	-0.17	9.18	0.81
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	0.17	4.67	0.96
ECA	E.C.Asia	CMIP5-EAS	1.15	10.08	0.83
ECA	E.C.Asia	CMIP6-WAS	2.92	10.15	0.83
ECA	E.C.Asia	CORDEX-CORE-WAS	3.05	7.02	0.94
EEU	E.Europe	CMIP5-GLB	3.26	5.15	0.96
EEU	E.Europe	CMIP6-GLB	1.64	3.64	0.99
EEU	E.Europe	CORDEX-CORE-EUR-GLB	-1.55	3.30	0.96
ENA	E.North-America	CMIP5-NAM	2.46	4.98	0.97
ENA	E.North-America	CMIP6-NAM	0.27	3.54	0.98
ENA	E.North-America	CMIP5-GLB	2.07	4.42	0.98
ENA	E.North-America	CMIP6-GLB	-0.14	2.89	0.99

ENA	E.North-America	CORDEX-CORE-NAM-GLB	-2.73	4.11	0.99
ENA	E.North-America	CORDEX-CORE-NAM	-2.26	4.20	0.99
ESAF	E.Southern-Africa	CMIP5-GLB	0.29	10.94	0.91
ESAF	E.Southern-Africa	CMIP6-GLB	2.06	10.96	0.90
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	7.52	13.22	0.94
ESB	E.Siberia	CMIP5-GLB	0.03	1.29	0.89
ESB	E.Siberia	CMIP6-GLB	-0.68	1.62	0.89
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	-0.92	1.65	0.95
MDG	Madagascar	CMIP5-GLB	8.13	8.38	0.87
MDG	Madagascar	CMIP6-GLB	13.33	16.67	0.62
MDG	Madagascar	CORDEX-CORE-AFR-GLB	0.67	7.28	0.89
MED	Mediterranean	CMIP5-GLB	-0.18	11.52	0.95
MED	Mediterranean	CMIP6-GLB	0.48	9.07	0.97
MED	Mediterranean	CORDEX-CORE-EUR-GLB	-4.43	11.04	0.97
MED	Mediterranean	CMIP5-EUR	10.76	18.38	0.76
MED	Mediterranean	CMIP6-EUR	9.42	18.87	0.76
MED	Mediterranean	CORDEX-CORE-EUR	6.81	16.11	0.78
NAU	N.Australia	CMIP5-GLB	-11.92	16.98	0.85
NAU	N.Australia	CMIP6-GLB	-7.24	13.89	0.86
NAU	N.Australia	CORDEX-CORE-AUS-GLB	-2.28	12.31	0.91
NCA	N.Central-America	CMIP5-CAM	-11.03	21.33	0.82
NCA	N.Central-America	CMIP6-CAM	-1.97	20.66	0.81
NCA	N.Central-America	CORDEX-CORE-CAM	1.05	14.99	0.92
NCA	N.Central-America	CMIP5-GLB	-13.75	21.77	0.87
NCA	N.Central-America	CMIP6-GLB	-6.71	21.84	0.82
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	-4.22	13.81	0.94
NEAF	N.Eastern-Africa	CMIP5-GLB	-11.13	21.65	0.95
NEAF	N.Eastern-Africa	CMIP6-GLB	5.87	22.15	0.93
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	16.25	24.29	0.95
NEN	N.E.North-America	CMIP5-GLB	0.97	2.17	0.95
NEN	N.E.North-America	CMIP6-GLB	0.14	0.68	0.95
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	-0.36	0.68	0.95
NES	N.E.South-America	CMIP5-GLB	-19.04	23.32	0.91
NES	N.E.South-America	CMIP6-GLB	-16.78	20.91	0.93
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	-4.26	10.63	0.96
NEU	N.Europe	CMIP5-GLB	0.44	0.91	0.93
NEU	N.Europe	CMIP6-GLB	-0.29	0.44	0.93
NEU	N.Europe	CORDEX-CORE-EUR-GLB	-0.30	0.48	0.91
NEU	N.Europe	CMIP5-EUR	0.45	0.91	0.92
NEU	N.Europe	CMIP6-EUR	-0.25	0.50	0.89
NEU	N.Europe	CORDEX-CORE-EUR	-0.26	0.48	0.91
NSA	N.South-America	CMIP5-GLB	-22.03	28.16	0.75
NSA	N.South-America	CMIP6-GLB	-7.78	18.70	0.76
NSA	N.South-America	CORDEX-CORE-SAM-GLB	-5.50	18.96	0.79
NWN	N.W.North-America	CMIP5-GLB	0.65	1.52	0.91
NWN	N.W.North-America	CMIP6-GLB	-0.09	0.64	0.91
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	-0.44	0.74	0.94
NWS	N.W.South-America	CMIP5-GLB	-21.90	34.90	0.85
NWS	N.W.South-America	CMIP6-GLB	-17.22	32.86	0.86
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	-8.14	24.29	0.91

NZ	New-Zealand	CMIP5-GLB	-0.35	0.73	0.73
NZ	New-Zealand	CMIP6-GLB	-0.43	0.72	0.75
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	0.32	0.66	0.91
RAR	Russian-Arctic	CMIP5-GLB	-0.05	0.28	0.83
RAR	Russian-Arctic	CMIP6-GLB	-0.23	0.38	0.87
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	-0.23	0.45	0.92
RFE	Russian-Far-East	CMIP5-GLB	-0.58	1.18	0.93
RFE	Russian-Far-East	CMIP6-GLB	-0.74	1.27	0.94
RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	0.51	1.07	0.94
SAH	Sahara	CMIP5-GLB	-18.89	27.49	0.89
SAH	Sahara	CMIP6-GLB	-8.95	17.33	0.94
SAH	Sahara	CORDEX-CORE-AFR-GLB	-10.21	19.05	0.93
SAM	South-American-Monsoon	CMIP5-GLB	-12.98	17.29	0.96
SAM	South-American-Monsoon	CMIP6-GLB	-10.29	16.19	0.95
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	0.76	9.62	0.97
SAS	S.Asia	CMIP5-GLB	-6.61	21.25	0.90
SAS	S.Asia	CMIP6-GLB	-3.67	18.64	0.91
SAS	S.Asia	CORDEX-CORE-WAS-GLB	-2.27	13.85	0.96
SAS	S.Asia	CMIP5-WAS	6.07	35.47	0.72
SAS	S.Asia	CMIP6-WAS	11.97	34.98	0.78
SAS	S.Asia	CORDEX-CORE-WAS	15.17	42.71	0.66
SAU	S.Australia	CMIP5-GLB	0.23	6.00	0.94
SAU	S.Australia	CMIP6-GLB	8.18	10.85	0.94
SAU	S.Australia	CORDEX-CORE-AUS-GLB	10.24	13.03	0.94
SCA	S.Central-America	CMIP5-GLB	-1.24	24.97	0.87
SCA	S.Central-America	CMIP6-GLB	-4.90	25.03	0.80
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	-11.04	20.20	0.92
SEA	S.E.Asia	CMIP5-GLB	-14.11	28.45	0.65
SEA	S.E.Asia	CMIP6-GLB	-13.12	26.79	0.65
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	-19.19	24.40	0.90
SEAF	S.Eastern-Africa	CMIP5-GLB	-5.33	16.79	0.94
SEAF	S.Eastern-Africa	CMIP6-GLB	-1.16	16.54	0.92
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	14.96	20.72	0.95
SES	S.E.South-America	CMIP5-GLB	1.09	10.74	0.94
SES	S.E.South-America	CMIP6-GLB	2.47	9.96	0.95
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	5.78	9.09	0.98
SSA	S.South-America	CMIP5-GLB	-1.67	3.31	0.88
SSA	S.South-America	CMIP6-GLB	-0.41	1.94	0.95
SSA	S.South-America	CORDEX-CORE-SAM-GLB	-0.43	1.47	0.97
SWS	S.W.South-America	CMIP5-GLB	1.86	5.41	0.59
SWS	S.W.South-America	CMIP6-GLB	2.22	8.91	0.55
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	5.48	12.85	0.73
TIB	Tibetan-Plateau	CMIP5-GLB	-1.07	10.10	0.94
TIB	Tibetan-Plateau	CMIP6-GLB	2.03	9.68	0.92
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	0.74	6.04	0.99
TIB	Tibetan-Plateau	CMIP5-WAS	-5.95	17.31	0.83
TIB	Tibetan-Plateau	CMIP6-WAS	-3.30	16.43	0.85

TIB	Tibetan-Plateau	CORDEX-CORE-WAS	-4.10	19.67	0.83
WAF	Western-Africa	CMIP5-GLB	-18.98	22.79	0.92
WAF	Western-Africa	CMIP6-GLB	-11.52	16.36	0.95
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	-7.91	14.22	0.95
WCA	W.C.Asia	CMIP5-GLB	-1.98	15.19	0.94
WCA	W.C.Asia	CMIP6-GLB	3.82	15.04	0.93
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	0.62	11.71	0.97
WCE	West&Central-Europe	CMIP5-GLB	5.95	7.21	0.92
WCE	West&Central-Europe	CMIP6-GLB	1.12	2.57	0.94
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	1.98	2.98	0.96
WCE	West&Central-Europe	CMIP5-EUR	5.80	7.06	0.92
WCE	West&Central-Europe	CMIP6-EUR	1.02	2.80	0.91
WCE	West&Central-Europe	CORDEX-CORE-EUR	1.97	2.88	0.97
WNA	W.North-America	CMIP5-CAM	0.26	7.16	0.88
WNA	W.North-America	CMIP6-CAM	-0.81	7.95	0.88
WNA	W.North-America	CMIP5-GLB	0.99	5.35	0.92
WNA	W.North-America	CMIP6-GLB	-1.06	6.80	0.90
WNA	W.North-America	CORDEX-CORE-NAM-GLB	-3.18	6.96	0.92
WNA	W.North-America	CORDEX-CORE-NAM	-2.75	6.87	0.94
WSAF	W.Southern-Africa	CMIP5-GLB	0.75	17.25	0.62
WSAF	W.Southern-Africa	CMIP6-GLB	3.20	13.82	0.80
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	7.59	19.93	0.67
WSB	W.Siberia	CMIP5-GLB	3.52	4.88	0.97
WSB	W.Siberia	CMIP6-GLB	2.42	4.64	0.97
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	1.86	2.32	0.98

HDD					
Region acronym	**Region**	**Ensemble**	**BIAS (Deg./ year)**	**RMSE (Deg./ year)**	**CORR**
ARP	Arabian-Peninsula	CMIP5-GLB	7.16	9.51	0.95
ARP	Arabian-Peninsula	CMIP6-GLB	6.04	7.79	0.96
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	5.94	7.78	0.96
CAF	Central-Africa	CMIP5-GLB	0.18	0.97	0.82
CAF	Central-Africa	CMIP6-GLB	-0.18	0.98	0.84
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	-0.27	1.08	0.80
CAR	Caribbean	CMIP5-GLB	-0.85	1.41	0.97
CAR	Caribbean	CMIP6-GLB	-0.76	2.06	0.53
CAR	Caribbean	CORDEX-CORE-CAM-GLB	-0.25	0.83	0.85
CAU	C.Australia	CMIP5-GLB	2.21	4.14	0.94
CAU	C.Australia	CMIP6-GLB	1.48	4.12	0.92
CAU	C.Australia	CORDEX-CORE-AUS-GLB	-3.93	5.35	0.93
CNA	C.North-America	CMIP5-CAM	-1.97	39.96	0.90
CNA	C.North-America	CMIP6-CAM	0.46	22.09	0.97
CNA	C.North-America	CMIP5-GLB	-8.82	11.77	0.99
CNA	C.North-America	CMIP6-GLB	-1.41	9.60	0.99
CNA	C.North-America	CORDEX-CORE-NAM-GLB	6.19	10.85	0.99
CNA	C.North-America	CORDEX-CORE-NAM	4.75	19.60	0.98
EAS	E.Asia	CMIP5-GLB	9.19	27.15	0.97
EAS	E.Asia	CMIP6-GLB	19.92	33.40	0.97
EAS	E.Asia	CORDEX-CORE-EAS-GLB	5.85	23.49	0.98

EAS	E.Asia	CMIP5-EAS	26.17	44.61	0.94
EAS	E.Asia	CMIP6-EAS	36.45	58.49	0.92
EAS	E.Asia	CORDEX-CORE-EAS	18.32	53.85	0.90
EAU	E.Australia	CMIP5-GLB	-0.51	6.40	0.93
EAU	E.Australia	CMIP6-GLB	-1.24	9.39	0.90
EAU	E.Australia	CORDEX-CORE-AUS-GLB	-0.07	6.84	0.95
ECA	E.C.Asia	CMIP5-GLB	14.46	38.85	0.87
ECA	E.C.Asia	CMIP6-GLB	37.88	59.90	0.80
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	0.19	35.53	0.95
ECA	E.C.Asia	CMIP5-EAS	44.10	102.35	0.60
ECA	E.C.Asia	CMIP6-WAS	77.96	122.73	0.67
ECA	E.C.Asia	CORDEX-CORE-WAS	38.68	103.08	0.73
EEU	E.Europe	CMIP5-GLB	-6.96	20.81	0.99
EEU	E.Europe	CMIP6-GLB	0.68	14.18	0.99
EEU	E.Europe	CORDEX-CORE-EUR-GLB	5.34	14.12	0.99
ENA	E.North-America	CMIP5-NAM	8.94	54.44	0.88
ENA	E.North-America	CMIP6-NAM	11.31	52.23	0.89
ENA	E.North-America	CMIP5-GLB	-10.56	15.65	0.99
ENA	E.North-America	CMIP6-GLB	-7.09	14.90	0.99
ENA	E.North-America	CORDEX-CORE-NAM-GLB	9.28	14.78	0.99
ENA	E.North-America	CORDEX-CORE-NAM	24.62	51.39	0.91
ESAF	E.Southern-Africa	CMIP5-GLB	-4.26	10.16	0.96
ESAF	E.Southern-Africa	CMIP6-GLB	-3.96	8.23	0.96
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	-4.08	7.45	0.97
ESB	E.Siberia	CMIP5-GLB	4.47	19.97	0.97
ESB	E.Siberia	CMIP6-GLB	6.69	21.99	0.98
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	-30.72	26.89	0.96
MDG	Madagascar	CMIP5-GLB	-2.00	3.63	0.85
MDG	Madagascar	CMIP6-GLB	-2.09	4.65	0.81
MDG	Madagascar	CORDEX-CORE-AFR-GLB	-0.20	2.64	0.94
MED	Mediterranean	CMIP5-GLB	-7.98	22.43	0.91
MED	Mediterranean	CMIP6-GLB	-1.76	21.28	0.92
MED	Mediterranean	CORDEX-CORE-EUR-GLB	7.37	18.66	0.95
MED	Mediterranean	CMIP5-EUR	16.07	6.56	0.41
MED	Mediterranean	CMIP6-EUR	28.47	8.22	0.42
MED	Mediterranean	CORDEX-CORE-EUR	37.19	15.18	0.40
NAU	N.Australia	CMIP5-GLB	-0.31	1.04	0.88
NAU	N.Australia	CMIP6-GLB	-0.38	1.20	0.87
NAU	N.Australia	CORDEX-CORE-AUS-GLB	-1.10	1.61	0.84
NCA	N.Central-America	CMIP5-CAM	-5.30	18.90	0.88
NCA	N.Central-America	CMIP6-CAM	-7.82	22.71	0.85
NCA	N.Central-America	CORDEX-CORE-CAM	-10.14	15.64	0.95
NCA	N.Central-America	CMIP5-GLB	4.57	12.23	0.94
NCA	N.Central-America	CMIP6-GLB	4.72	13.87	0.93
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	2.26	9.43	0.97
NEAF	N.Eastern-Africa	CMIP5-GLB	-0.55	3.86	0.92
NEAF	N.Eastern-Africa	CMIP6-GLB	-0.55	5.34	0.86
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	0.33	3.80	0.94
NEN	N.E.North-America	CMIP5-GLB	43.54	76.75	0.95
NEN	N.E.North-America	CMIP6-GLB	6.97	51.96	0.95

NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	-10.15	38.94	0.96
NES	N.E.South-America	CMIP5-GLB	0.36	0.77	0.94
NES	N.E.South-America	CMIP6-GLB	0.10	0.61	0.93
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	-0.01	0.65	0.91
NEU	N.Europe	CMIP5-GLB	-1.20	21.20	0.98
NEU	N.Europe	CMIP6-GLB	9.00	20.89	0.98
NEU	N.Europe	CORDEX-CORE-EUR-GLB	7.39	17.10	0.99
NEU	N.Europe	CMIP5-EUR	-23.08	16.32	0.50
NEU	N.Europe	CMIP6-EUR	-12.02	8.50	0.49
NEU	N.Europe	CORDEX-CORE-EUR	-13.92	9.84	0.51
NSA	N.South-America	CMIP5-GLB	-0.12	0.60	0.55
NSA	N.South-America	CMIP6-GLB	-0.15	1.23	0.62
NSA	N.South-America	CORDEX-CORE-SAM-GLB	0.06	1.74	0.82
NWN	N.W.North-America	CMIP5-GLB	25.29	59.55	0.93
NWN	N.W.North-America	CMIP6-GLB	15.66	40.67	0.95
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	25.34	48.96	0.95
NWS	N.W.South-America	CMIP5-GLB	-9.76	32.29	0.81
NWS	N.W.South-America	CMIP6-GLB	-10.31	32.89	0.86
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	4.93	20.18	0.96
NZ	New-Zealand	CMIP5-GLB	50.76	2576.77	0.10
NZ	New-Zealand	CMIP6-GLB	54.74	2996.47	0.21
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	95.06	9025.00	0.12
RAR	Russian-Arctic	CMIP5-GLB	14.75	46.38	0.88
RAR	Russian-Arctic	CMIP6-GLB	-12.30	30.67	0.96
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	-115.19	17.40	0.98
RFE	Russian-Far-East	CMIP5-GLB	-5.95	29.34	0.98
RFE	Russian-Far-East	CMIP6-GLB	-17.35	37.06	0.98
SAH	Sahara	CMIP5-GLB	5.71	7.48	0.94
SAH	Sahara	CMIP6-GLB	5.93	7.33	0.96
SAH	Sahara	CORDEX-CORE-AFR-GLB	9.78	11.67	0.95
SAM	South-American-Monsoon	CMIP5-GLB	-3.93	18.54	0.98
SAM	South-American-Monsoon	CMIP6-GLB	-1.75	14.55	0.97
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	2.52	14.07	0.98
SAS	S.Asia	CMIP5-GLB	4.34	16.49	0.95
SAS	S.Asia	CMIP6-GLB	9.24	21.87	0.91
SAS	S.Asia	CORDEX-CORE-WAS-GLB	6.57	21.18	0.98
SAS	S.Asia	CMIP5-WAS	13.47	26.55	0.53
SAS	S.Asia	CMIP6-WAS	15.66	26.66	0.60
SAS	S.Asia	CORDEX-CORE-WAS	12.24	18.78	0.55
SAU	S.Australia	CMIP5-GLB	-0.39	5.60	0.37
SAU	S.Australia	CMIP6-GLB	0.41	4.75	0.30
SAU	S.Australia	CORDEX-CORE-AUS-GLB	3.36	4.50	0.22
SCA	S.Central-America	CMIP5-GLB	-5.17	12.75	0.91
SCA	S.Central-America	CMIP6-GLB	-0.90	4.77	0.87
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	2.35	5.63	0.95
SEA	S.E.Asia	CMIP5-GLB	0.20	1.15	0.90
SEA	S.E.Asia	CMIP6-GLB	-0.11	2.58	0.57
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	0.45	2.14	0.91
SEAF	S.Eastern-Africa	CMIP5-GLB	-1.32	5.55	0.62
SEAF	S.Eastern-Africa	CMIP6-GLB	-0.61	3.09	0.75

SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	-0.49	3.09	0.89
SES	S.E.South-America	CMIP5-GLB	-4.91	14.47	0.95
SES	S.E.South-America	CMIP6-GLB	-1.39	13.46	0.96
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	-7.08	12.86	0.97
SSA	S.South-America	CMIP5-GLB	-5.82	29.76	0.90
SSA	S.South-America	CMIP6-GLB	6.38	26.55	0.50
SSA	S.South-America	CORDEX-CORE-SAM-GLB	7.00	18.78	0.49
SWS	S.W.South-America	CMIP5-GLB	-23.27	40.20	0.87
SWS	S.W.South-America	CMIP6-GLB	-8.01	47.96	0.81
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	21.09	50.39	0.95
TIB	Tibetan-Plateau	CMIP5-GLB	70.67	92.05	0.94
TIB	Tibetan-Plateau	CMIP6-GLB	86.95	104.56	0.92
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	146.61	161.67	0.97
TIB	Tibetan-Plateau	CMIP5-WAS	312.60	337.78	0.46
TIB	Tibetan-Plateau	CMIP6-WAS	334.83	353.93	0.45
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	390.72	424.43	0.48
WAF	Western-Africa	CMIP5-GLB	0.64	0.83	0.89
WAF	Western-Africa	CMIP6-GLB	0.60	0.90	0.84
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	0.53	0.85	0.89
WCA	W.C.Asia	CMIP5-GLB	4.19	37.86	0.88
WCA	W.C.Asia	CMIP6-GLB	17.93	41.78	0.90
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	17.31	54.38	0.93
WCE	West&Central-Europe	CMIP5-GLB	-9.90	16.48	0.97
WCE	West&Central-Europe	CMIP6-GLB	2.19	13.81	0.96
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	-5.07	16.59	0.97
WCE	West&Central-Europe	CMIP5-EUR	-9.76	18.72	0.95
WCE	West&Central-Europe	CMIP6-EUR	9.60	79.13	0.73
WCE	West&Central-Europe	CORDEX-CORE-EUR	7.08	146.03	0.66
WNA	W.North-America	CMIP5-CAM	-12.28	42.99	0.87
WNA	W.North-America	CMIP6-CAM	-1.36	39.57	0.88
WNA	W.North-America	CMIP5-GLB	0.10	25.29	0.93
WNA	W.North-America	CMIP6-GLB	12.68	30.37	0.93
WNA	W.North-America	CORDEX-CORE-NAM-GLB	31.35	39.19	0.96
WNA	W.North-America	CORDEX-CORE-NAM	16.65	29.61	0.96
WSAF	W.Southern-Africa	CMIP5-GLB	-4.25	6.33	0.96
WSAF	W.Southern-Africa	CMIP6-GLB	-6.18	7.74	0.96
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	-6.96	9.01	0.96
WSB	W.Siberia	CMIP5-GLB	1.87	17.14	0.98
WSB	W.Siberia	CMIP6-GLB	2.57	16.15	0.98
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	-43.24	29.16	0.98

DF					
Region acronym	**Region**	**Ensemble**	**BIAS (N./decade)**	**RMSE (N./decade)**	**CORR**
ARP	Arabian-Peninsula	CMIP5_ALL-GLB	0.97	1.33	0.44
ARP	Arabian-Peninsula	CMIP5-GLB	1.26	1.45	0.66
ARP	Arabian-Peninsula	CMIP6-GLB	0.72	1.09	0.51
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	0.78	1.20	0.49
ARP	Arabian-Peninsula	CORDEX44-AFR-GLB	0.55	0.96	0.56
CAF	Central-Africa	CMIP5_ALL-GLB	0.87	1.17	0.44
CAF	Central-Africa	CMIP5-GLB	1.12	1.30	0.42

CAF	Central-Africa	CMIP6-GLB	0.98	1.22	0.45
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	1.15	1.34	0.54
CAF	Central-Africa	CORDEX44-AFR-GLB	1.04	1.25	0.49
CAR	Caribbean	CMIP5_ALL-GLB	2.07	2.14	0.63
CAR	Caribbean	CMIP5-GLB	1.75	1.86	0.44
CAR	Caribbean	CMIP6-GLB	1.86	1.97	0.35
CAR	Caribbean	CORDEX-CORE-CAM-GLB	1.80	1.90	0.56
CAR	Caribbean	CORDEX44-CAM-GLB	1.76	1.85	0.53
CAU	C.Australia	CMIP5_ALL-GLB	1.04	1.26	0.50
CAU	C.Australia	CMIP5-GLB	0.71	1.01	0.52
CAU	C.Australia	CMIP6-GLB	0.55	0.84	0.57
CAU	C.Australia	CORDEX-CORE-AUS-GLB	0.49	0.90	0.43
CAU	C.Australia	CORDEX44-AUS-GLB	0.67	0.99	0.58
CNA	C.North-America	CMIP5_ALL-CAM	0.85	1.19	0.40
CNA	C.North-America	CMIP5-CAM	0.79	1.04	0.44
CNA	C.North-America	CMIP6-CAM	0.78	1.06	0.42
CNA	C.North-America	CMIP5_ALL-GLB	0.81	1.04	0.54
CNA	C.North-America	CMIP5-GLB	0.75	0.95	0.41
CNA	C.North-America	CMIP6-GLB	0.82	1.00	0.45
CNA	C.North-America	CORDEX-CORE-NAM-GLB	0.88	1.06	0.54
CNA	C.North-America	CORDEX44-NAM-GLB	0.74	1.02	0.51
CNA	C.North-America	CORDEX-CORE-NAM	0.83	1.10	0.50
CNA	C.North-America	CORDEX44-NAM	0.68	1.02	0.57
EAS	E.Asia	CMIP5_ALL-GLB	0.84	1.18	0.47
EAS	E.Asia	CMIP5-GLB	0.71	1.01	0.52
EAS	E.Asia	CMIP6-GLB	0.78	1.05	0.46
EAS	E.Asia	CORDEX-CORE-EAS-GLB	1.29	1.49	0.55
EAS	E.Asia	CORDEX44-EAS-GLB	0.59	1.04	0.54
EAS	E.Asia	CMIP5_ALL-EAS	1.45	2.00	0.43
EAS	E.Asia	CMIP5-EAS	1.32	1.81	0.56
EAS	E.Asia	CMIP6-EAS	1.39	1.87	0.51
EAS	E.Asia	CORDEX-CORE-EAS	1.87	2.22	0.60
EAS	E.Asia	CORDEX44-EAS	1.16	1.72	0.56
EAU	E.Australia	CMIP5_ALL-GLB	1.37	1.44	0.47
EAU	E.Australia	CMIP5-GLB	0.97	1.08	0.35
EAU	E.Australia	CMIP6-GLB	0.95	1.09	0.44
EAU	E.Australia	CORDEX-CORE-AUS-GLB	1.05	1.20	0.52
EAU	E.Australia	CORDEX44-AUS-GLB	0.98	1.22	0.36
ECA	E.C.Asia	CMIP5_ALL-GLB	0.02	0.83	0.31
ECA	E.C.Asia	CMIP5-GLB	0.69	0.99	0.59
ECA	E.C.Asia	CMIP6-GLB	0.85	1.11	0.68
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	0.75	1.13	0.53
ECA	E.C.Asia	CORDEX44-WAS-GLB	0.74	1.07	0.45
ECA	E.C.Asia	CMIP5_ALL-EAS	0.69	1.46	0.25
ECA	E.C.Asia	CMIP5-EAS	1.36	1.79	0.53
ECA	E.C.Asia	CMIP6-WAS	1.64	1.85	0.64
ECA	E.C.Asia	CORDEX-CORE-WAS	1.72	2.22	0.48
ECA	E.C.Asia	CORDEX44-WAS	1.77	1.85	0.99
EEU	E.Europe	CMIP5_ALL-GLB	0.53	0.88	0.43
EEU	E.Europe	CMIP5-GLB	1.05	1.22	0.61

EEU	E.Europe	CMIP6-GLB	1.02	1.25	0.45
EEU	E.Europe	CORDEX-CORE-EUR-GLB	1.01	1.27	0.50
EEU	E.Europe	CORDEX44-EUR-GLB	1.03	1.31	0.49
ENA	E.North-America	CMIP5_ALL-NAM	0.90	1.35	0.44
ENA	E.North-America	CMIP5-NAM	1.24	1.52	0.58
ENA	E.North-America	CMIP6-NAM	1.21	1.52	0.46
ENA	E.North-America	CMIP5_ALL-GLB	0.96	1.21	0.56
ENA	E.North-America	CMIP5-GLB	1.29	1.52	0.30
ENA	E.North-America	CMIP6-GLB	1.33	1.54	0.38
ENA	E.North-America	CORDEX-CORE-NAM-GLB	1.32	1.53	0.48
ENA	E.North-America	CORDEX44-NAM-GLB	1.29	1.56	0.43
ENA	E.North-America	CORDEX-CORE-NAM	1.20	1.53	0.46
ENA	E.North-America	CORDEX44-NAM	1.16	1.52	0.51
ESAF	E.Southern-Africa	CMIP5_ALL-GLB	0.78	1.03	0.47
ESAF	E.Southern-Africa	CMIP5-GLB	0.51	0.83	0.53
ESAF	E.Southern-Africa	CMIP6-GLB	0.31	0.70	0.51
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	0.44	0.85	0.47
ESAF	E.Southern-Africa	CORDEX44-AFR-GLB	0.44	0.79	0.46
ESB	E.Siberia	CMIP5_ALL-GLB	0.19	0.79	0.40
ESB	E.Siberia	CMIP5-GLB	0.85	1.14	0.40
ESB	E.Siberia	CMIP6-GLB	0.76	1.10	0.33
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	1.45	1.66	0.53
ESB	E.Siberia	CORDEX44-EAS-GLB	0.72	1.04	0.46
MDG	Madagascar	CMIP5_ALL-GLB	1.05	1.23	0.29
MDG	Madagascar	CMIP5-GLB	0.70	0.93	0.50
MDG	Madagascar	CMIP6-GLB	0.71	1.00	0.29
MDG	Madagascar	CORDEX-CORE-AFR-GLB	0.58	0.88	0.53
MDG	Madagascar	CORDEX44-AFR-GLB	0.48	0.81	0.51
MED	Mediterranean	CMIP5_ALL-GLB	1.45	1.56	0.63
MED	Mediterranean	CMIP5-GLB	1.01	1.17	0.54
MED	Mediterranean	CMIP6-GLB	0.94	1.14	0.59
MED	Mediterranean	CORDEX-CORE-EUR-GLB	0.97	1.19	0.59
MED	Mediterranean	CORDEX44-EUR-GLB	0.98	1.18	0.61
MED	Mediterranean	CMIP5_ALL-EUR	2.82	3.12	0.60
MED	Mediterranean	CMIP5-EUR	2.38	2.73	0.58
MED	Mediterranean	CMIP6-EUR	2.19	2.56	0.66
MED	Mediterranean	CORDEX-CORE-EUR	2.20	2.59	0.60
MED	Mediterranean	CORDEX44-EUR	2.24	2.60	0.71
NAU	N.Australia	CMIP5_ALL-GLB	0.87	1.19	0.35
NAU	N.Australia	CMIP5-GLB	0.58	0.92	0.53
NAU	N.Australia	CMIP6-GLB	0.51	0.85	0.58
NAU	N.Australia	CORDEX-CORE-AUS-GLB	0.39	0.81	0.53
NAU	N.Australia	CORDEX44-AUS-GLB	0.49	0.99	0.40
NCA	N.Central-America	CMIP5_ALL-CAM	1.55	1.67	0.42
NCA	N.Central-America	CMIP5-CAM	0.92	1.10	0.50
NCA	N.Central-America	CMIP6-CAM	1.05	1.24	0.52
NCA	N.Central-America	CORDEX-CORE-CAM	0.95	1.18	0.50
NCA	N.Central-America	CORDEX44-CAM	1.01	1.22	0.50
NCA	N.Central-America	CMIP5_ALL-GLB	1.71	1.80	0.48
NCA	N.Central-America	CMIP5-GLB	1.07	1.21	0.55

NCA	N.Central-America	CMIP6-GLB	1.09	1.24	0.41
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	1.02	1.19	0.50
NCA	N.Central-America	CORDEX44-CAM-GLB	1.06	1.24	0.40
NEAF	N.Eastern-Africa	CMIP5_ALL-GLB	1.00	1.19	0.66
NEAF	N.Eastern-Africa	CMIP5-GLB	1.36	1.54	0.52
NEAF	N.Eastern-Africa	CMIP6-GLB	1.23	1.45	0.49
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	1.14	1.41	0.53
NEAF	N.Eastern-Africa	CORDEX44-AFR-GLB	1.19	1.42	0.52
NEN	N.E.North-America	CMIP5_ALL-GLB	1.10	1.39	0.58
NEN	N.E.North-America	CMIP5-GLB	1.74	1.96	0.47
NEN	N.E.North-America	CMIP6-GLB	1.80	2.01	0.49
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	1.84	2.15	0.47
NEN	N.E.North-America	CORDEX44-NAM-GLB	1.73	2.07	0.50
NES	N.E.South-America	CMIP5_ALL-GLB	1.38	1.47	0.76
NES	N.E.South-America	CMIP5-GLB	0.82	1.05	0.43
NES	N.E.South-America	CMIP6-GLB	0.75	0.94	0.60
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	0.79	1.02	0.56
NES	N.E.South-America	CORDEX44-SAM-GLB	0.78	0.99	0.57
NEU	N.Europe	CMIP5_ALL-GLB	1.01	1.24	0.43
NEU	N.Europe	CMIP5-GLB	1.56	1.67	0.57
NEU	N.Europe	CMIP6-GLB	1.50	1.63	0.43
NEU	N.Europe	CORDEX-CORE-EUR-GLB	1.51	1.68	0.47
NEU	N.Europe	CORDEX44-EUR-GLB	1.47	1.61	0.51
NEU	N.Europe	CMIP5_ALL-EUR	0.46	1.05	0.41
NEU	N.Europe	CMIP5-EUR	1.01	1.33	0.44
NEU	N.Europe	CMIP6-EUR	0.90	1.21	0.46
NEU	N.Europe	CORDEX-CORE-EUR	0.96	1.25	0.54
NEU	N.Europe	CORDEX44-EUR	0.92	1.20	0.53
NSA	N.South-America	CMIP5_ALL-GLB	1.33	1.48	0.61
NSA	N.South-America	CMIP5-GLB	1.26	1.44	0.46
NSA	N.South-America	CMIP6-GLB	1.21	1.37	0.39
NSA	N.South-America	CORDEX-CORE-SAM-GLB	1.37	1.54	0.47
NSA	N.South-America	CORDEX44-SAM-GLB	1.42	1.57	0.48
NWN	N.W.North-America	CMIP5_ALL-GLB	1.24	1.48	0.55
NWN	N.W.North-America	CMIP5-GLB	1.90	2.08	0.46
NWN	N.W.North-America	CMIP6-GLB	1.90	2.07	0.47
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	1.80	1.98	0.48
NWN	N.W.North-America	CORDEX44-NAM-GLB	1.93	2.12	0.48
NWS	N.W.South-America	CMIP5_ALL-GLB	1.48	1.67	0.51
NWS	N.W.South-America	CMIP5-GLB	1.92	2.07	0.49
NWS	N.W.South-America	CMIP6-GLB	1.77	1.92	0.49
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	1.84	1.98	0.59
NWS	N.W.South-America	CORDEX44-SAM-GLB	1.82	1.97	0.56
NZ	New-Zealand	CMIP5_ALL-GLB	1.56	1.62	0.80
NZ	New-Zealand	CMIP5-GLB	1.75	1.84	0.39
NZ	New-Zealand	CMIP6-GLB	1.95	2.01	0.57
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	1.73	1.82	0.49
NZ	New-Zealand	CORDEX44-AUS-GLB	1.75	1.88	0.43
RAR	Russian-Arctic	CMIP5_ALL-GLB	0.49	1.07	0.31
RAR	Russian-Arctic	CMIP5-GLB	1.33	1.56	0.56

RAR	Russian-Arctic	CMIP6-GLB	1.34	1.58	0.50
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	1.25	1.83	0.38
RAR	Russian-Arctic	CORDEX44-EUR-GLB	1.32	1.69	0.47
RFE	Russian-Far-East	CMIP5_ALL-GLB	0.33	1.10	0.45
RFE	Russian-Far-East	CMIP5-GLB	0.80	1.29	0.49
RFE	Russian-Far-East	CMIP6-GLB	0.93	1.33	0.43
RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	1.43	1.69	0.53
RFE	Russian-Far-East	CORDEX44-EAS-GLB	0.80	1.17	0.56
SAH	Sahara	CMIP5_ALL-GLB	0.87	1.36	0.62
SAH	Sahara	CMIP5-GLB	1.25	1.68	0.45
SAH	Sahara	CMIP6-GLB	0.66	1.18	0.70
SAH	Sahara	CORDEX-CORE-AFR-GLB	0.51	1.22	0.57
SAH	Sahara	CORDEX44-AFR-GLB	0.52	1.08	0.73
SAM	South-American-Monsoon	CMIP5_ALL-GLB	1.13	1.32	0.58
SAM	South-American-Monsoon	CMIP5-GLB	1.01	1.19	0.65
SAM	South-American-Monsoon	CMIP6-GLB	0.80	1.06	0.46
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	1.01	1.24	0.52
SAM	South-American-Monsoon	CORDEX44-SAM-GLB	0.98	1.20	0.54
SAS	S.Asia	CMIP5_ALL-GLB	0.93	1.17	0.53
SAS	S.Asia	CMIP5-GLB	0.90	1.14	0.55
SAS	S.Asia	CMIP6-GLB	0.71	1.06	0.51
SAS	S.Asia	CORDEX-CORE-WAS-GLB	0.61	1.01	0.53
SAS	S.Asia	CORDEX44-WAS-GLB	0.67	1.05	0.54
SAS	S.Asia	CMIP5_ALL-WAS	0.78	1.09	0.46
SAS	S.Asia	CMIP5-WAS	0.75	1.07	0.50
SAS	S.Asia	CMIP6-WAS	0.71	1.07	0.49
SAS	S.Asia	CORDEX-CORE-WAS	0.58	0.95	0.54
SAS	S.Asia	CORDEX44-WAS	0.63	1.04	0.47
SAU	S.Australia	CMIP5_ALL-GLB	0.93	1.20	0.45
SAU	S.Australia	CMIP5-GLB	0.56	0.92	0.40
SAU	S.Australia	CMIP6-GLB	0.58	0.88	0.48
SAU	S.Australia	CORDEX-CORE-AUS-GLB	0.57	0.94	0.42
SAU	S.Australia	CORDEX44-AUS-GLB	0.57	0.93	0.56
SCA	S.Central-America	CMIP5_ALL-GLB	1.16	1.37	0.72
SCA	S.Central-America	CMIP5-GLB	1.06	1.34	0.55
SCA	S.Central-America	CMIP6-GLB	1.23	1.41	0.67
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	1.26	1.50	0.51
SCA	S.Central-America	CORDEX44-CAM-GLB	1.36	1.59	0.54
SEA	S.E.Asia	CMIP5_ALL-GLB	1.38	1.54	0.57
SEA	S.E.Asia	CMIP5-GLB	1.22	1.40	0.48
SEA	S.E.Asia	CMIP6-GLB	1.21	1.43	0.41
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	1.23	1.45	0.44
SEAF	S.Eastern-Africa	CMIP5_ALL-GLB	0.69	0.93	0.57
SEAF	S.Eastern-Africa	CMIP5-GLB	0.89	1.12	0.33
SEAF	S.Eastern-Africa	CMIP6-GLB	0.72	0.97	0.49

SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	0.72	0.98	0.50
SEAF	S.Eastern-Africa	CORDEX44-AFR-GLB	0.80	1.02	0.45
SES	S.E.South-America	CMIP5_ALL-GLB	0.85	1.15	0.49
SES	S.E.South-America	CMIP5-GLB	0.84	1.10	0.51
SES	S.E.South-America	CMIP6-GLB	0.89	1.15	0.41
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	0.88	1.15	0.48
SES	S.E.South-America	CORDEX44-SAM-GLB	0.95	1.17	0.59
SSA	S.South-America	CMIP5_ALL-GLB	1.59	1.72	0.86
SSA	S.South-America	CMIP5-GLB	1.20	1.57	0.23
SSA	S.South-America	CMIP6-GLB	1.19	1.44	0.48
SSA	S.South-America	CORDEX-CORE-SAM-GLB	1.13	1.41	0.56
SSA	S.South-America	CORDEX44-SAM-GLB	1.29	1.51	0.72
SWS	S.W.South-America	CMIP5_ALL-GLB	2.07	2.18	0.63
SWS	S.W.South-America	CMIP5-GLB	1.30	1.48	0.55
SWS	S.W.South-America	CMIP6-GLB	1.44	1.60	0.63
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	1.32	1.50	0.63
SWS	S.W.South-America	CORDEX44-SAM-GLB	1.36	1.52	0.67
TIB	Tibetan-Plateau	CMIP5_ALL-GLB	0.12	1.01	0.41
TIB	Tibetan-Plateau	CMIP5-GLB	0.68	1.06	0.35
TIB	Tibetan-Plateau	CMIP6-GLB	0.88	1.18	0.47
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	0.79	1.13	0.46
TIB	Tibetan-Plateau	CORDEX44-WAS-GLB	0.75	1.08	0.47
TIB	Tibetan-Plateau	CMIP5_ALL-WAS	0.75	1.43	0.71
TIB	Tibetan-Plateau	CMIP5-WAS	1.31	1.56	0.25
TIB	Tibetan-Plateau	CMIP6-WAS	1.34	1.72	0.51
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	1.37	1.76	0.33
TIB	Tibetan-Plateau	CORDEX44-WAS	1.37	1.66	0.29
WAF	Western-Africa	CMIP5_ALL-GLB	0.71	1.15	0.41
WAF	Western-Africa	CMIP5-GLB	1.07	1.36	0.46
WAF	Western-Africa	CMIP6-GLB	0.82	1.18	0.48
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	1.10	1.42	0.45
WAF	Western-Africa	CORDEX44-AFR-GLB	0.96	1.29	0.43
WCA	W.C.Asia	CMIP5_ALL-GLB	1.52	1.77	0.45
WCA	W.C.Asia	CMIP5-GLB	1.39	1.65	0.43
WCA	W.C.Asia	CMIP6-GLB	1.36	1.62	0.42
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	1.36	1.66	0.48
WCA	W.C.Asia	CORDEX44-WAS-GLB	1.29	1.61	0.39
WCE	West&Central-Europe	CMIP5_ALL-GLB	0.62	1.07	0.42
WCE	West&Central-Europe	CMIP5-GLB	0.85	1.16	0.54
WCE	West&Central-Europe	CMIP6-GLB	0.92	1.18	0.56
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	0.82	1.13	0.54
WCE	West&Central-Europe	CORDEX44-EUR-GLB	0.89	1.16	0.54
WCE	West&Central-Europe	CMIP5_ALL-EUR	0.51	0.89	0.48
WCE	West&Central-Europe	CMIP5-EUR	0.75	1.00	0.57
WCE	West&Central-Europe	CMIP6-EUR	0.79	1.04	0.58
WCE	West&Central-Europe	CORDEX-CORE-EUR	0.69	1.01	0.49
WCE	West&Central-Europe	CORDEX44-EUR	0.75	1.02	0.50
WNA	W.North-America	CMIP5_ALL-CAM	1.31	1.46	0.54
WNA	W.North-America	CMIP5-CAM	0.91	1.11	0.51
WNA	W.North-America	CMIP6-CAM	1.05	1.31	0.43

WNA	W.North-America	CMIP5_ALL-GLB	1.43	1.56	0.53
WNA	W.North-America	CMIP5-GLB	1.03	1.22	0.36
WNA	W.North-America	CMIP6-GLB	1.02	1.23	0.44
WNA	W.North-America	CORDEX-CORE-NAM-GLB	1.00	1.24	0.41
WNA	W.North-America	CORDEX44-NAM-GLB	1.08	1.32	0.47
WNA	W.North-America	CORDEX-CORE-NAM	0.98	1.22	0.49
WNA	W.North-America	CORDEX44-NAM	1.05	1.33	0.47
WSAF	W.Southern-Africa	CMIP5_ALL-GLB	1.33	1.51	0.65
WSAF	W.Southern-Africa	CMIP5-GLB	0.91	1.15	0.65
WSAF	W.Southern-Africa	CMIP6-GLB	0.75	1.01	0.70
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	0.90	1.16	0.62
WSAF	W.Southern-Africa	CORDEX44-AFR-GLB	0.77	1.05	0.63
WSB	W.Siberia	CMIP5_ALL-GLB	0.43	0.86	0.45
WSB	W.Siberia	CMIP5-GLB	1.00	1.19	0.61
WSB	W.Siberia	CMIP6-GLB	0.95	1.19	0.51
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	1.24	1.61	0.34
WSB	W.Siberia	CORDEX44-EAS-GLB	1.05	1.48	0.62

NDD					
Region acronym	**Region**	**Ensemble**	**BIAS (N.days/year)**	**RMSE (N.days/year)**	**CORR**
ARP	Arabian-Peninsula	CMIP5-GLB	-346.80	347.54	0.50
ARP	Arabian-Peninsula	CMIP6-GLB	-340.78	342.32	0.58
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	-354.12	355.03	0.56
CAF	Central-Africa	CMIP5_ALL-GLB	-363.94	364.89	0.94
CAF	Central-Africa	CMIP5-GLB	-347.23	348.73	0.94
CAF	Central-Africa	CMIP6-GLB	-339.92	341.37	0.92
CAR	Caribbean	CMIP5_ALL-GLB	-305.09	309.35	0.70
CAR	Caribbean	CMIP5-GLB	-323.59	333.13	0.55
CAR	Caribbean	CMIP6-GLB	-291.48	304.95	0.30
CAU	C.Australia	CMIP5_ALL-GLB	-331.61	331.89	0.78
CAU	C.Australia	CMIP5-GLB	-323.20	323.55	0.77
CAU	C.Australia	CMIP6-GLB	-331.93	332.15	0.88
CNA	C.North-America	CMIP5_ALL-CAM	-14.46	23.56	0.76
CNA	C.North-America	CMIP5-CAM	-3.97	15.56	0.89
CNA	C.North-America	CMIP6-CAM	-25.71	40.96	0.39
CNA	C.North-America	CMIP5-GLB	-287.29	288.84	0.78
CNA	C.North-America	CMIP6-GLB	-276.46	277.79	0.91
CNA	C.North-America	CORDEX-CORE-NAM-GLB	-223.78	226.17	0.82
CNA	C.North-America	CORDEX-CORE-NAM	48.91	52.99	0.78
EAS	E.Asia	CMIP5-GLB	-267.81	271.49	0.90
EAS	E.Asia	CMIP6-GLB	-267.06	269.57	0.95
EAS	E.Asia	CORDEX-CORE-EAS-GLB	-258.12	262.74	0.86
EAS	E.Asia	CMIP5-EAS	-31.10	35.98	0.91
EAS	E.Asia	CMIP6-EAS	-27.23	28.48	0.96
EAS	E.Asia	CORDEX-CORE-EAS	-18.57	27.43	0.91
EAU	E.Australia	CMIP5-GLB	-289.95	291.39	0.94
EAU	E.Australia	CMIP6-GLB	-281.65	283.28	0.96
EAU	E.Australia	CORDEX-CORE-AUS-GLB	-302.00	302.60	0.98
ECA	E.C.Asia	CMIP5-GLB	-350.80	352.12	0.78

ECA	E.C.Asia	CMIP6-GLB	-339.18	340.15	0.86
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	-344.81	346.16	0.85
ECA	E.C.Asia	CMIP5-EAS	-19.45	41.57	0.68
ECA	E.C.Asia	CMIP6-WAS	-13.31	24.80	0.86
ECA	E.C.Asia	CORDEX-CORE-WAS	-18.76	28.52	0.92
EEU	E.Europe	CMIP5-GLB	-282.66	284.37	0.99
EEU	E.Europe	CMIP6-GLB	-271.11	274.54	0.91
EEU	E.Europe	CORDEX-CORE-EUR-GLB	-288.57	287.45	0.85
ENA	E.North-America	CMIP5-NAM	6.91	19.13	0.77
ENA	E.North-America	CMIP6-NAM	9.80	19.25	0.81
ENA	E.North-America	CMIP5-GLB	-239.45	240.29	0.79
ENA	E.North-America	CMIP6-GLB	-239.28	240.50	0.79
ENA	E.North-America	CORDEX-CORE-NAM-GLB	-165.25	166.85	0.75
ENA	E.North-America	CORDEX-CORE-NAM	83.60	85.76	0.87
ESAF	E.Southern-Africa	CMIP5-GLB	-325.54	326.46	0.82
ESAF	E.Southern-Africa	CMIP6-GLB	-323.34	323.78	0.90
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	-308.52	309.50	0.78
ESB	E.Siberia	CMIP5-GLB	-320.97	322.64	0.86
ESB	E.Siberia	CMIP6-GLB	-307.55	309.04	0.90
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	-316.41	321.34	0.79
MDG	Madagascar	CMIP5-GLB	-246.86	260.06	0.86
MDG	Madagascar	CMIP6-GLB	-275.76	284.98	0.89
MDG	Madagascar	CORDEX-CORE-AFR-GLB	-251.07	260.35	0.85
MED	Mediterranean	CMIP5-GLB	-311.32	312.65	0.97
MED	Mediterranean	CMIP6-GLB	-302.32	304.25	0.95
MED	Mediterranean	CORDEX-CORE-EUR-GLB	-303.77	305.72	0.95
MED	Mediterranean	CMIP5-EUR	36.48	97.53	0.47
MED	Mediterranean	CMIP6-EUR	38.20	89.81	0.48
MED	Mediterranean	CORDEX-CORE-EUR	34.72	89.70	0.45
NAU	N.Australia	CMIP5-GLB	-284.44	286.76	0.90
NAU	N.Australia	CMIP6-GLB	-287.84	289.81	0.94
NAU	N.Australia	CORDEX-CORE-AUS-GLB	-291.08	293.03	0.91
NCA	N.Central-America	CMIP5-CAM	-48.61	55.09	0.90
NCA	N.Central-America	CMIP6-CAM	-37.10	45.50	0.89
NCA	N.Central-America	CORDEX-CORE-CAM	-30.87	35.56	0.91
NCA	N.Central-America	CMIP5-GLB	-333.19	334.13	0.92
NCA	N.Central-America	CMIP6-GLB	-319.72	320.62	0.93
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	-311.74	313.36	0.88
NEAF	N.Eastern-Africa	CMIP5-GLB	-333.00	334.43	0.95
NEAF	N.Eastern-Africa	CMIP6-GLB	-318.35	320.74	0.91
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	-297.46	300.58	0.90
NEN	N.E.North-America	CMIP5-GLB	-298.78	302.42	0.90
NEN	N.E.North-America	CMIP6-GLB	-296.12	300.76	0.88
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	-248.77	240.30	0.92
NES	N.E.South-America	CMIP5-GLB	-229.05	236.95	0.84
NES	N.E.South-America	CMIP6-GLB	-260.12	267.13	0.85
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	-218.32	224.43	0.94
NEU	N.Europe	CMIP5-GLB	-264.54	267.48	0.85
NEU	N.Europe	CMIP6-GLB	-257.60	259.88	0.89
NEU	N.Europe	CORDEX-CORE-EUR-GLB	-255.00	257.82	0.89

NEU	N.Europe	CMIP5-EUR	-29.14	32.45	0.86
NEU	N.Europe	CMIP6-EUR	-19.60	24.95	0.88
NEU	N.Europe	CORDEX-CORE-EUR	-18.89	23.79	0.88
NSA	N.South-America	CMIP5-GLB	-146.86	155.77	0.87
NSA	N.South-America	CMIP6-GLB	-155.70	164.07	0.85
NSA	N.South-America	CORDEX-CORE-SAM-GLB	-152.89	163.10	0.84
NWN	N.W.North-America	CMIP5-GLB	-326.51	330.38	0.85
NWN	N.W.North-America	CMIP6-GLB	-315.69	319.57	0.88
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	-247.92	251.58	0.86
NWS	N.W.South-America	CMIP5-GLB	-270.73	288.76	0.84
NWS	N.W.South-America	CMIP6-GLB	-291.27	308.05	0.83
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	-280.82	301.20	0.75
NZ	New-Zealand	CMIP5-GLB	-257.56	261.12	0.75
NZ	New-Zealand	CMIP6-GLB	-220.90	224.32	0.81
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	-244.32	247.60	0.89
RAR	Russian-Arctic	CMIP5-GLB	-311.90	315.89	0.85
RAR	Russian-Arctic	CMIP6-GLB	-309.02	311.72	0.90
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	-333.05	257.87	0.64
RFE	Russian-Far-East	CMIP5-GLB	-321.28	322.72	0.76
RFE	Russian-Far-East	CMIP6-GLB	-311.42	313.17	0.81
RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	-314.41	294.31	0.84
SAH	Sahara	CMIP5-GLB	-338.69	338.88	0.97
SAH	Sahara	CMIP6-GLB	-332.34	332.67	0.94
SAH	Sahara	CORDEX-CORE-AFR-GLB	-338.64	338.97	0.91
SAM	South-American-Monsoon	CMIP5-GLB	-229.38	238.13	0.57
SAM	South-American-Monsoon	CMIP6-GLB	-241.38	247.69	0.69
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	-223.41	232.46	0.61
SAS	S.Asia	CMIP5-GLB	-285.46	289.02	0.93
SAS	S.Asia	CMIP6-GLB	-281.35	284.95	0.93
SAS	S.Asia	CORDEX-CORE-WAS-GLB	-287.64	291.24	0.93
SAS	S.Asia	CMIP5-WAS	-26.21	30.68	0.93
SAS	S.Asia	CMIP6-WAS	-20.75	30.18	0.93
SAS	S.Asia	CORDEX-CORE-WAS	-27.32	39.01	0.90
SAU	S.Australia	CMIP5-GLB	-284.29	288.41	0.95
SAU	S.Australia	CMIP6-GLB	-281.01	283.78	0.96
SAU	S.Australia	CORDEX-CORE-AUS-GLB	-301.67	304.12	0.97
SCA	S.Central-America	CMIP5-GLB	-243.34	247.18	0.69
SCA	S.Central-America	CMIP6-GLB	-265.64	268.69	0.74
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	-233.91	237.80	0.76
SEA	S.E.Asia	CMIP5-GLB	-237.64	244.47	0.86
SEA	S.E.Asia	CMIP6-GLB	-252.91	259.24	0.87
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	-199.39	209.00	0.83
SEAF	S.Eastern-Africa	CMIP5-GLB	-298.77	303.72	0.70
SEAF	S.Eastern-Africa	CMIP6-GLB	-311.99	316.49	0.71
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	-275.12	281.84	0.68
SES	S.E.South-America	CMIP5-GLB	-262.34	266.93	0.83
SES	S.E.South-America	CMIP6-GLB	-260.43	263.83	0.88

SES	S.E.South-America	CORDEX-CORE-SAM-GLB	-254.50	258.68	0.87
SSA	S.South-America	CMIP5-GLB	-358.80	370.06	0.86
SSA	S.South-America	CMIP6-GLB	-353.55	357.68	0.89
SSA	S.South-America	CORDEX-CORE-SAM-GLB	-341.80	347.49	0.89
SWS	S.W.South-America	CMIP5-GLB	-341.51	350.97	0.88
SWS	S.W.South-America	CMIP6-GLB	-323.55	333.60	0.90
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	-322.90	330.62	0.91
TIB	Tibetan-Plateau	CMIP5-GLB	-353.44	357.18	0.83
TIB	Tibetan-Plateau	CMIP6-GLB	-339.72	344.07	0.81
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	-329.33	333.36	0.83
TIB	Tibetan-Plateau	CMIP5-WAS	-48.45	61.60	0.80
TIB	Tibetan-Plateau	CMIP6-WAS	-30.71	53.98	0.74
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	-18.56	54.47	0.76
WAF	Western-Africa	CMIP5-GLB	-339.46	341.35	0.90
WAF	Western-Africa	CMIP6-GLB	-311.03	312.59	0.93
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	-321.65	323.33	0.91
WCA	W.C.Asia	CMIP5-GLB	-309.97	321.49	0.75
WCA	W.C.Asia	CMIP6-GLB	-304.91	317.83	0.72
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	-302.88	317.47	0.66
WCE	West&Central-Europe	CMIP5-GLB	-274.90	275.73	0.89
WCE	West&Central-Europe	CMIP6-GLB	-265.14	265.87	0.91
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	-264.55	265.19	0.93
WCE	West&Central-Europe	CMIP5-EUR	-32.12	35.65	0.89
WCE	West&Central-Europe	CMIP6-EUR	-22.24	25.51	0.92
WCE	West&Central-Europe	CORDEX-CORE-EUR	-22.36	24.57	0.95
WNA	W.North-America	CMIP5-CAM	-35.14	46.59	0.84
WNA	W.North-America	CMIP6-CAM	-28.63	39.17	0.88
WNA	W.North-America	CMIP5-GLB	-292.19	296.94	0.90
WNA	W.North-America	CMIP6-GLB	-289.01	293.55	0.91
WNA	W.North-America	CORDEX-CORE-NAM-GLB	-222.87	231.02	0.93
WNA	W.North-America	CORDEX-CORE-NAM	36.95	47.72	0.90
WSAF	W.Southern-Africa	CMIP5-GLB	-358.95	359.53	0.94
WSAF	W.Southern-Africa	CMIP6-GLB	-347.63	348.31	0.92
WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	-344.55	345.30	0.92
WSB	W.Siberia	CMIP5-GLB	-282.11	284.02	0.95
WSB	W.Siberia	CMIP6-GLB	-273.49	275.66	0.96
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	-268.23	297.37	0.90

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Region acronym	**Region**	**Ensemble**	**BIAS (mm/day)**	**BIAS %**	**RMSE (mm/day)**	**CORR**
ARP	Arabian-Peninsula	CMIP5_ALL-GLB	2.71	97.60	3.57	0.65
ARP	Arabian-Peninsula	CMIP5-GLB	2.59	93.38	3.65	0.67
ARP	Arabian-Peninsula	CMIP6-GLB	1.11	39.79	2.08	0.74
ARP	Arabian-Peninsula	CORDEX-CORE-AFR-GLB	5.13	183.56	7.32	0.73
ARP	Arabian-Peninsula	CORDEX44-AFR-GLB	2.98	106.09	5.00	0.73
CAF	Central-Africa	CMIP5_ALL-GLB	-12.38	-32.74	14.23	0.81
CAF	Central-Africa	CMIP5-GLB	-11.23	-29.70	13.98	0.67
CAF	Central-Africa	CMIP6-GLB	-1.16	-3.16	7.18	0.87
CAF	Central-Africa	CORDEX-CORE-AFR-GLB	-2.16	-5.84	7.74	0.83

CAF	Central-Africa	CORDEX44-AFR-GLB	-12.35	-33.36	16.20	0.57
CAR	Caribbean	CMIP5_ALL-GLB	-9.55	-34.02	10.58	0.70
CAR	Caribbean	CMIP5-GLB	-5.60	-19.95	7.69	0.68
CAR	Caribbean	CMIP6-GLB	-5.86	-21.65	6.96	0.79
CAR	Caribbean	CORDEX-CORE-CAM-GLB	13.96	48.63	17.55	0.73
CAR	Caribbean	CORDEX44-CAM-GLB	7.06	25.08	11.52	0.56
CAU	C.Australia	CMIP5_ALL-GLB	0.58	3.37	3.13	0.91
CAU	C.Australia	CMIP5-GLB	4.72	27.42	5.61	0.88
CAU	C.Australia	CMIP6-GLB	3.58	21.01	4.33	0.93
CAU	C.Australia	CORDEX-CORE-AUS-GLB	0.001	0.006	2.83	0.90
CNA	C.North-America	CMIP5_ALL-NAM	-0.19	-0.74	3.42	0.96
CNA	C.North-America	CMIP5-NAM	0.54	2.15	3.82	0.96
CNA	C.North-America	CMIP6-NAM	3.51	14.04	4.68	0.97
CNA	C.North-America	CMIP5_ALL-GLB	-4.52	-15.26	6.31	0.98
CNA	C.North-America	CMIP5-GLB	-3.79	-12.80	6.18	0.97
CNA	C.North-America	CMIP6-GLB	-0.57	-1.97	4.19	0.98
CNA	C.North-America	CORDEX-CORE-NAM-GLB	3.17	10.89	4.31	0.98
CNA	C.North-America	CORDEX44-NAM-GLB	-2.52	-8.63	4.62	0.97
CNA	C.North-America	CORDEX-CORE-NAM	7.29	29.18	8.02	0.97
CNA	C.North-America	CORDEX44-NAM	1.60	6.38	3.79	0.96
EAS	E.Asia	CMIP5_ALL-GLB	-0.24	-0.69	7.82	0.91
EAS	E.Asia	CMIP5-GLB	2.01	5.81	7.90	0.92
EAS	E.Asia	CMIP6-GLB	2.48	7.37	6.63	0.94
EAS	E.Asia	CORDEX-CORE-EAS-GLB	5.51	16.39	12.43	0.79
EAS	E.Asia	CMIP5_ALL-EAS	0.35	1.03	8.72	0.90
EAS	E.Asia	CMIP5-EAS	2.60	7.65	7.84	0.92
EAS	E.Asia	CMIP6-EAS	3.10	9.38	6.67	0.94
EAS	E.Asia	CORDEX-CORE-EAS	5.80	17.39	12.63	0.70
EAU	E.Australia	CMIP5_ALL-GLB	-6.04	-18.73	10.83	0.87
EAU	E.Australia	CMIP5-GLB	-3.41	-10.56	9.53	0.89
EAU	E.Australia	CMIP6-GLB	0.82	2.76	4.44	0.93
EAU	E.Australia	CORDEX-CORE-AUS-GLB	-0.73	-2.46	3.54	0.94
ECA	E.C.Asia	CMIP5_ALL-GLB	2.78	43.00	3.75	0.90
ECA	E.C.Asia	CMIP5-GLB	3.21	49.61	4.61	0.83
ECA	E.C.Asia	CMIP6-GLB	1.61	23.80	2.94	0.91
ECA	E.C.Asia	CORDEX-CORE-WAS-GLB	7.00	104.15	10.89	0.85
ECA	E.C.Asia	CORDEX44-WAS-GLB	4.02	59.87	5.10	0.85
ECA	E.C.Asia	CMIP5_ALL-EAS	2.90	45.78	3.84	0.92
ECA	E.C.Asia	CMIP5-EAS	3.33	52.52	4.75	0.87
ECA	E.C.Asia	CMIP6-WAS	1.72	25.89	3.09	0.92
ECA	E.C.Asia	CORDEX-CORE-WAS	-16.47	-54.55	14.98	0.52
ECA	E.C.Asia	CORDEX44-WAS	10.64	160.00	7.52	0.88
EEU	E.Europe	CMIP5_ALL-GLB	-0.50	-3.73	1.46	0.95
EEU	E.Europe	CMIP5-GLB	0.09	0.68	1.31	0.94
EEU	E.Europe	CMIP6-GLB	0.66	4.95	1.59	0.92
EEU	E.Europe	CORDEX-CORE-EUR-GLB	5.65	42.50	9.58	0.34
EEU	E.Europe	CMIP5_ALL-EUR	0.08	0.58	1.59	0.77
EEU	E.Europe	CMIP5-EUR	0.67	5.19	2.05	0.67
EEU	E.Europe	CMIP6-EUR	0.95	7.27	2.58	0.59
EEU	E.Europe	CORDEX-CORE-EUR	6.05	46.86	3.40	0.54

ENA	E.North-America	CMIP5_ALL-CAM	2.37	8.60	6.01	0.93
ENA	E.North-America	CMIP5-CAM	1.92	6.95	5.89	0.93
ENA	E.North-America	CMIP6-CAM	6.68	24.32	8.25	0.93
ENA	E.North-America	CMIP5_ALL-GLB	0.10	0.35	4.87	0.92
ENA	E.North-America	CMIP5-GLB	-0.35	-1.17	4.96	0.92
ENA	E.North-America	CMIP6-GLB	4.05	13.48	5.95	0.94
ENA	E.North-America	CORDEX-CORE-NAM-GLB	8.36	27.81	9.51	0.92
ENA	E.North-America	CORDEX44-NAM-GLB	2.99	9.92	5.48	0.91
ENA	E.North-America	CORDEX-CORE-NAM	11.41	41.70	12.09	0.94
ENA	E.North-America	CORDEX44-NAM	5.65	20.56	7.42	0.91
ESAF	E.Southern-Africa	CMIP5_ALL-GLB	-2.88	-8.86	6.93	0.69
ESAF	E.Southern-Africa	CMIP5-GLB	-0.80	-2.45	6.89	0.63
ESAF	E.Southern-Africa	CMIP6-GLB	2.83	8.95	5.88	0.80
ESAF	E.Southern-Africa	CORDEX-CORE-AFR-GLB	7.36	23.40	10.57	0.71
ESAF	E.Southern-Africa	CORDEX44-AFR-GLB	-1.75	-5.57	6.59	0.74
ESB	E.Siberia	CMIP5_ALL-GLB	2.19	17.45	2.87	0.94
ESB	E.Siberia	CMIP5-GLB	3.23	25.72	3.77	0.94
ESB	E.Siberia	CMIP6-GLB	2.79	22.52	3.31	0.95
ESB	E.Siberia	CORDEX-CORE-EAS-GLB	4.75	38.24	5.63	0.86
ESB	E.Siberia	CMIP5_ALL-EAS	-2.66	-15.28	3.53	0.94
ESB	E.Siberia	CMIP5-EAS	-1.62	-9.32	5.47	0.93
ESB	E.Siberia	CMIP6-EAS	-1.91	-11.15	4.67	0.92
ESB	E.Siberia	CORDEX-CORE-EAS	0.07	0.44	6.05	0.92
MDG	Madagascar	CMIP5_ALL-GLB	-14.77	-30.70	17.65	0.82
MDG	Madagascar	CMIP5-GLB	-17.17	-35.69	20.57	0.74
MDG	Madagascar	CMIP6-GLB	-3.62	-8.02	8.37	0.87
MDG	Madagascar	CORDEX-CORE-AFR-GLB	20.03	43.57	28.32	0.83
MDG	Madagascar	CORDEX44-AFR-GLB	2.29	4.99	11.24	0.86
MED	Mediterranean	CMIP5_ALL-GLB	-3.35	-20.60	5.66	0.93
MED	Mediterranean	CMIP5-GLB	-2.37	-14.59	5.07	0.93
MED	Mediterranean	CMIP6-GLB	-1.63	-9.93	4.35	0.94
MED	Mediterranean	CORDEX-CORE-EUR-GLB	0.85	5.19	6.99	0.91
MED	Mediterranean	CMIP5_ALL-EUR	-3.09	-19.29	4.90	0.88
MED	Mediterranean	CMIP5-EUR	-2.11	-13.19	4.47	0.88
MED	Mediterranean	CMIP6-EUR	-1.74	-10.51	4.26	0.90
MED	Mediterranean	CORDEX-CORE-EUR	0.74	4.45	8.57	0.85
NAU	N.Australia	CMIP5_ALL-GLB	-7.93	-21.31	8.66	0.94
NAU	N.Australia	CMIP5-GLB	-2.69	-7.24	5.50	0.88
NAU	N.Australia	CMIP6-GLB	-2.00	-5.29	4.63	0.93
NAU	N.Australia	CORDEX-CORE-AUS-GLB	0.22	0.59	12.40	0.91
NCA	N.Central-America	CMIP5_ALL-CAM	3.41	16.80	5.94	0.90
NCA	N.Central-America	CMIP5-CAM	3.29	16.23	6.23	0.87
NCA	N.Central-America	CMIP6-CAM	5.07	24.09	8.65	0.84
NCA	N.Central-America	CORDEX-CORE-CAM	9.70	45.88	14.56	0.85
NCA	N.Central-America	CORDEX44-CAM	9.37	44.41	14.43	0.83
NCA	N.Central-America	CMIP5_ALL-GLB	1.56	7.03	5.45	0.92
NCA	N.Central-America	CMIP5-GLB	1.44	6.51	5.99	0.88
NCA	N.Central-America	CMIP6-GLB	4.12	18.68	7.79	0.87
NCA	N.Central-America	CORDEX-CORE-CAM-GLB	8.91	40.09	14.09	0.87
NCA	N.Central-America	CORDEX44-CAM-GLB	8.27	37.26	13.30	0.86

NEAF	N.Eastern-Africa	CMIP5_ALL-GLB	-2.43	-11.58	5.99	0.87
NEAF	N.Eastern-Africa	CMIP5-GLB	-1.65	-7.85	5.11	0.92
NEAF	N.Eastern-Africa	CMIP6-GLB	-1.17	-5.56	5.75	0.87
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR-GLB	0.40	1.89	6.81	0.80
NEAF	N.Eastern-Africa	CORDEX44-AFR-GLB	-1.32	-6.29	6.54	0.82
NEN	N.E.North-America	CMIP5_ALL-GLB	1.11	8.67	2.50	0.96
NEN	N.E.North-America	CMIP5-GLB	0.89	6.90	2.28	0.96
NEN	N.E.North-America	CMIP6-GLB	2.92	22.79	3.69	0.96
NEN	N.E.North-America	CORDEX-CORE-NAM-GLB	3.34	26.28	4.34	0.94
NEN	N.E.North-America	CORDEX44-NAM-GLB	4.11	32.49	3.89	0.93
NES	N.E.South-America	CMIP5_ALL-GLB	-3.28	-9.20	7.94	0.64
NES	N.E.South-America	CMIP5-GLB	-5.38	-15.08	8.83	0.69
NES	N.E.South-America	CMIP6-GLB	7.10	20.37	10.81	0.57
NES	N.E.South-America	CORDEX-CORE-SAM-GLB	8.95	25.64	12.25	0.78
NES	N.E.South-America	CORDEX44-SAM-GLB	-8.22	-23.60	11.69	0.52
NEU	N.Europe	CMIP5_ALL-GLB	-0.71	-4.35	3.04	0.92
NEU	N.Europe	CMIP5-GLB	-0.41	-2.54	3.14	0.92
NEU	N.Europe	CMIP6-GLB	1.10	6.79	2.79	0.94
NEU	N.Europe	CORDEX-CORE-EUR-GLB	2.74	16.91	5.36	0.88
NEU	N.Europe	CMIP5_ALL-EUR	-1.36	-8.04	3.98	0.92
NEU	N.Europe	CMIP5-EUR	-1.07	-6.30	4.02	0.92
NEU	N.Europe	CMIP6-EUR	0.22	1.26	4.57	0.92
NEU	N.Europe	CORDEX-CORE-EUR	1.91	11.24	4.41	0.90
NSA	N.South-America	CMIP5_ALL-GLB	-19.88	-42.57	20.42	0.86
NSA	N.South-America	CMIP5-GLB	-17.86	-38.23	18.72	0.80
NSA	N.South-America	CMIP6-GLB	-12.28	-26.09	13.68	0.84
NSA	N.South-America	CORDEX-CORE-SAM-GLB	-8.20	-17.48	13.05	0.75
NSA	N.South-America	CORDEX44-SAM-GLB	-25.14	-53.60	26.16	0.67
NWN	N.W.North-America	CMIP5_ALL-GLB	0.86	6.51	4.02	0.92
NWN	N.W.North-America	CMIP5-GLB	1.02	7.69	4.14	0.92
NWN	N.W.North-America	CMIP6-GLB	2.03	15.15	4.89	0.92
NWN	N.W.North-America	CORDEX-CORE-NAM-GLB	4.57	34.28	8.73	0.90
NWN	N.W.North-America	CORDEX44-NAM-GLB	3.40	25.55	6.43	0.92
NWS	N.W.South-America	CMIP5_ALL-GLB	-1.19	-3.17	17.60	0.59
NWS	N.W.South-America	CMIP5-GLB	-6.41	-17.00	17.27	0.68
NWS	N.W.South-America	CMIP6-GLB	6.80	18.37	16.92	0.74
NWS	N.W.South-America	CORDEX-CORE-SAM-GLB	20.16	87.68	57.55	0.57
NWS	N.W.South-America	CORDEX44-SAM-GLB	-9.11	-24.77	23.63	0.46
NZ	New-Zealand	CMIP5_ALL-GLB	-0.90	-2.94	8.33	0.75
NZ	New-Zealand	CMIP5-GLB	-2.23	-7.25	8.72	0.72
NZ	New-Zealand	CMIP6-GLB	2.45	8.19	6.32	0.86
NZ	New-Zealand	CORDEX-CORE-AUS-GLB	19.23	60.53	25.63	0.88
NZ	New-Zealand	CORDEX44-AUS-GLB	27.97	2908.80	981.06	0.92
RAR	Russian-Arctic	CMIP5_ALL-GLB	2.35	28.94	2.95	0.83
RAR	Russian-Arctic	CMIP5-GLB	2.70	33.21	3.25	0.83
RAR	Russian-Arctic	CMIP6-GLB	3.37	39.79	3.86	0.85
RAR	Russian-Arctic	CORDEX-CORE-EUR-GLB	13.23	156.49	19.07	0.38
RFE	Russian-Far-East	CMIP5_ALL-GLB	3.91	25.76	4.59	0.93
RFE	Russian-Far-East	CMIP5-GLB	4.25	28.04	4.89	0.93
RFE	Russian-Far-East	CMIP6-GLB	5.00	33.42	5.64	0.93

RFE	Russian-Far-East	CORDEX-CORE-EAS-GLB	12.35	82.97	10.51	0.83
SAH	Sahara	CMIP5_ALL-GLB	-1.79	-28.68	4.64	0.98
SAH	Sahara	CMIP5-GLB	-0.51	-8.18	3.23	0.97
SAH	Sahara	CMIP6-GLB	-2.40	-47.88	4.32	0.96
SAH	Sahara	CORDEX-CORE-AFR-GLB	-0.33	-6.13	3.38	0.93
SAH	Sahara	CORDEX44-AFR-GLB	0.42	7.66	2.41	0.96
SAM	South-American-Monsoon	CMIP5_ALL-GLB	-8.50	-20.78	14.60	0.42
SAM	South-American-Monsoon	CMIP5-GLB	-6.12	-14.97	12.60	0.50
SAM	South-American-Monsoon	CMIP6-GLB	1.44	3.50	8.43	0.73
SAM	South-American-Monsoon	CORDEX-CORE-SAM-GLB	4.40	10.76	19.13	0.41
SAM	South-American-Monsoon	CORDEX44-SAM-GLB	-13.07	-31.92	19.85	0.39
SAS	S.Asia	CMIP5_ALL-GLB	-7.92	-23.73	17.68	0.77
SAS	S.Asia	CMIP5-GLB	-3.45	-10.34	15.15	0.81
SAS	S.Asia	CMIP6-GLB	-2.78	-8.33	14.51	0.82
SAS	S.Asia	CORDEX-CORE-WAS-GLB	7.31	21.83	19.56	0.85
SAS	S.Asia	CORDEX44-WAS-GLB	2.38	7.10	14.57	0.82
SAS	S.Asia	CMIP5_ALL-WAS	-18.80	-42.47	22.26	0.75
SAS	S.Asia	CMIP5-WAS	-14.33	-32.37	18.12	0.76
SAS	S.Asia	CMIP6-WAS	-16.17	-34.59	20.96	0.81
SAS	S.Asia	CORDEX-CORE-WAS	-5.82	-12.48	17.91	0.83
SAS	S.Asia	CORDEX44-WAS	-10.53	-22.70	17.56	0.83
SAU	S.Australia	CMIP5_ALL-GLB	-0.43	-2.52	3.27	0.91
SAU	S.Australia	CMIP5-GLB	1.20	7.05	3.83	0.85
SAU	S.Australia	CMIP6-GLB	1.20	7.07	3.23	0.93
SAU	S.Australia	CORDEX-CORE-AUS-GLB	2.24	13.11	3.94	0.95
SCA	S.Central-America	CMIP5_ALL-GLB	-15.40	-38.46	17.59	0.62
SCA	S.Central-America	CMIP5-GLB	-14.54	-36.32	16.44	0.68
SCA	S.Central-America	CMIP6-GLB	-7.26	-17.44	13.39	0.62
SCA	S.Central-America	CORDEX-CORE-CAM-GLB	13.90	33.41	31.10	0.65
SCA	S.Central-America	CORDEX44-CAM-GLB	1.20	2.88	25.04	0.53
SEA	S.E.Asia	CMIP5_ALL-GLB	-10.65	-19.66	17.44	0.65
SEA	S.E.Asia	CMIP5-GLB	-18.49	-34.15	23.74	0.52
SEA	S.E.Asia	CMIP6-GLB	-1.28	-2.37	13.52	0.67
SEA	S.E.Asia	CORDEX-CORE-SEA-GLB	-6.54	-12.15	23.25	0.62
SEAF	S.Eastern-Africa	CMIP5_ALL-GLB	-5.12	-17.23	7.52	0.71
SEAF	S.Eastern-Africa	CMIP5-GLB	-6.59	-22.19	8.52	0.72
SEAF	S.Eastern-Africa	CMIP6-GLB	0.31	1.05	8.48	0.66
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR-GLB	-4.26	-14.38	10.15	0.62
SEAF	S.Eastern-Africa	CORDEX44-AFR-GLB	-3.32	-11.18	11.62	0.62
SES	S.E.South-America	CMIP5_ALL-GLB	-8.51	-21.95	11.84	0.83
SES	S.E.South-America	CMIP5-GLB	-7.17	-18.49	11.06	0.82
SES	S.E.South-America	CMIP6-GLB	-1.31	-3.42	7.42	0.89
SES	S.E.South-America	CORDEX-CORE-SAM-GLB	9.38	24.46	13.59	0.85
SES	S.E.South-America	CORDEX44-SAM-GLB	-8.17	-21.27	12.37	0.79
SSA	S.South-America	CMIP5_ALL-GLB	1.50	9.73	6.83	0.89

SSA	S.South-America	CMIP5-GLB	1.18	7.64	6.74	0.89
SSA	S.South-America	CMIP6-GLB	3.58	24.51	6.74	0.81
SSA	S.South-America	CORDEX-CORE-SAM-GLB	9.61	64.41	22.88	0.72
SSA	S.South-America	CORDEX44-SAM-GLB	3.63	24.04	11.34	0.76
SWS	S.W.South-America	CMIP5_ALL-GLB	4.76	28.23	9.06	0.92
SWS	S.W.South-America	CMIP5-GLB	6.09	36.12	10.81	0.87
SWS	S.W.South-America	CMIP6-GLB	6.44	38.98	8.33	0.95
SWS	S.W.South-America	CORDEX-CORE-SAM-GLB	21.68	137.24	32.77	0.80
SWS	S.W.South-America	CORDEX44-SAM-GLB	12.90	82.44	18.23	0.87
TIB	Tibetan-Plateau	CMIP5_ALL-GLB	7.26	44.07	10.61	0.90
TIB	Tibetan-Plateau	CMIP5-GLB	10.40	63.15	13.43	0.92
TIB	Tibetan-Plateau	CMIP6-GLB	5.20	35.60	9.75	0.87
TIB	Tibetan-Plateau	CORDEX-CORE-WAS-GLB	15.30	104.93	25.43	0.87
TIB	Tibetan-Plateau	CORDEX44-WAS-GLB	5.74	39.89	11.76	0.88
TIB	Tibetan-Plateau	CMIP5_ALL-WAS	-28.84	-54.87	22.55	0.93
TIB	Tibetan-Plateau	CMIP5-WAS	-25.70	-48.89	16.06	0.96
TIB	Tibetan-Plateau	CMIP6-WAS	-28.13	-58.67	21.60	0.88
TIB	Tibetan-Plateau	CORDEX-CORE-WAS	-17.74	-37.26	26.42	0.87
TIB	Tibetan-Plateau	CORDEX44-WAS	-27.55	-57.77	20.26	0.77
WAF	Western-Africa	CMIP5_ALL-GLB	-10.90	-29.63	13.02	0.85
WAF	Western-Africa	CMIP5-GLB	-4.54	-12.35	10.56	0.67
WAF	Western-Africa	CMIP6-GLB	-0.30	-0.85	9.27	0.85
WAF	Western-Africa	CORDEX-CORE-AFR-GLB	5.46	15.42	20.31	0.83
WAF	Western-Africa	CORDEX44-AFR-GLB	-2.49	-7.00	9.56	0.82
WCA	W.C.Asia	CMIP5_ALL-GLB	0.29	2.56	4.62	0.86
WCA	W.C.Asia	CMIP5-GLB	1.12	9.90	4.74	0.86
WCA	W.C.Asia	CMIP6-GLB	1.70	15.51	4.73	0.86
WCA	W.C.Asia	CORDEX-CORE-WAS-GLB	4.67	42.56	10.23	0.84
WCA	W.C.Asia	CORDEX44-WAS-GLB	3.47	31.55	6.31	0.86
WCE	West&Central-Europe	CMIP5_ALL-GLB	-1.97	-10.85	2.71	0.88
WCE	West&Central-Europe	CMIP5-GLB	-1.88	-10.34	2.79	0.85
WCE	West&Central-Europe	CMIP6-GLB	-0.72	-3.88	2.14	0.91
WCE	West&Central-Europe	CORDEX-CORE-EUR-GLB	0.17	0.93	4.45	0.87
WCE	West&Central-Europe	CMIP5_ALL-EUR	-0.32	-1.91	2.19	0.92
WCE	West&Central-Europe	CMIP5-EUR	-0.22	-1.34	2.39	0.89
WCE	West&Central-Europe	CMIP6-EUR	0.78	4.54	3.20	0.90
WCE	West&Central-Europe	CORDEX-CORE-EUR	1.66	9.71	4.69	0.86
WNA	W.North-America	CMIP5_ALL-CAM	3.02	18.07	9.88	0.80
WNA	W.North-America	CMIP5-CAM	2.22	13.28	9.91	0.79
WNA	W.North-America	CMIP6-CAM	2.88	16.64	9.79	0.84
WNA	W.North-America	CMIP5_ALL-GLB	2.96	17.62	5.80	0.92
WNA	W.North-America	CMIP5-GLB	2.16	12.85	5.70	0.92
WNA	W.North-America	CMIP6-GLB	3.49	20.91	6.13	0.92
WNA	W.North-America	CORDEX-CORE-NAM-GLB	9.19	54.61	12.82	0.91
WNA	W.North-America	CORDEX44-NAM-GLB	4.89	29.15	8.09	0.95
WNA	W.North-America	CORDEX-CORE-NAM	8.73	50.98	13.28	0.87
WNA	W.North-America	CORDEX44-NAM	4.65	27.34	8.96	0.91
WSAF	W.Southern-Africa	CMIP5_ALL-GLB	2.16	11.99	4.95	0.90
WSAF	W.Southern-Africa	CMIP5-GLB	5.79	32.19	7.42	0.91
WSAF	W.Southern-Africa	CMIP6-GLB	5.58	29.76	7.67	0.89

WSAF	W.Southern-Africa	CORDEX-CORE-AFR-GLB	9.67	51.36	11.73	0.85
WSAF	W.Southern-Africa	CORDEX44-AFR-GLB	3.44	18.42	6.64	0.84
WSB	W.Siberia	CMIP5_ALL-GLB	0.27	2.38	1.64	0.90
WSB	W.Siberia	CMIP5-GLB	0.53	4.71	1.61	0.91
WSB	W.Siberia	CMIP6-GLB	1.26	11.46	2.00	0.92
WSB	W.Siberia	CORDEX-CORE-EAS-GLB	2.08	18.89	5.71	0.74

Table 3: the area average values (land point only) for the bias, bias in %, RMSE and spatial correlation for TX35, HW, GDD, CDD, HDD, DF, NDD and P99 indicator. CMIP5-ALL is the whole CMIP5 ensemble; CMIP5 is the ensemble of the driving GCMs; CMIP6 is the CMIP6 ensemble; CORDEX-CORE-"CORDEX REGION" is the CORDEX-CORE ensemble over a specific CORDEX Region, as in Table 2; CORDEX44-"CORDEX REGION" is the CORDEX 0.44 ensemble over a specific CORDEX Region, as inTable 2. Each ensemble is compared with the CPC Global Dataset (CMIP5-ALL-GBL; CMIP5-GBL; CMIP6-GBL; CORDEX-CORE-"CORDEX REGION"-GBL; CORDEX44-"CORDEX REGION"-GBL) and with the regional one, where available (CMIP5-ALL-"CORDEX REGION"; CMIP5-"CORDEX REGION"; CMIP6-"CORDEX REGION"; CORDEX-CORE-"CORDEX REGION"; CORDEX44-"CORDEX REGION").

Region acronym	**Region**	**Ensemble**	**HW (N./year)**	**TX>35 (N.days/ year)**	**GDD (Deg./ year)**	**CDD (Deg./ year)**	**HDD (Deg./ year)**
ARP	Arabian-Peninsula	CMIP5-ALL	8.81	//	//	//	//
ARP	Arabian-Peninsula	CMIP5	7.90	52.65	45.16	56.94	-11.39
ARP	Arabian-Peninsula	CMIP6	9.48	68.89	53.85	79.33	-10.22
ARP	Arabian-Peninsula	CORDEX-CORE-AFR	8.78	69.24	49.42	72.41	-9.61
ARP	Arabian-Peninsula	CORDEX44-AFR	9.20	//	//	//	//
CAF	Central-Africa	CMIP5-ALL	5.61	//	//	//	//
CAF	Central-Africa	CMIP5	4.69	76.86	32.81	56.51	-0.85
CAF	Central-Africa	CMIP6	6.57	92.91	40.99	70.64	-0.57
CAF	Central-Africa	CORDEX-CORE-AFR	6.33	118.42	39.42	67.98	-0.41
CAF	Central-Africa	CORDEX44-AFR	7.12	//	//	//	//
CAR	Caribbean	CMIP5-ALL	1.69	//	//	//	//
CAR	Caribbean	CMIP5	0.09	19.20	27.76	46.93	0.00
CAR	Caribbean	CMIP6	2.65	23.55	34.38	66.78	0.00
CAR	Caribbean	CORDEX-CORE-CAM	3.57	75.02	31.51	51.94	-0.22
CAR	Caribbean	CORDEX44-CAM	2.56	//	//	//	//
CAU	C.Australia	CMIP5-ALL	8.97	//	//	//	//
CAU	C.Australia	CMIP5	6.34	54.29	28.47	33.99	-9.88
CAU	C.Australia	CMIP6	9.42	73.89	46.18	62.49	-9.75
CAU	C.Australia	CORDEX-CORE-AUS	8.60	71.20	38.27	54.57	-5.98
CAU	C.Australia	CORDEX44-AUS	7.27	//	//	//	//

CNA	C.North-America	CMIP5-ALL	8.86	//	//	//	//
CNA	C.North-America	CMIP5	9.24	41.59	46.42	31.44	-53.83
CNA	C.North-America	CMIP6	9.79	53.35	57.77	39.86	-57.12
CNA	C.North-America	CORDEX-CORE-NAM	7.00	40.62	38.62	22.08	-42.20
CNA	C.North-America	CORDEX44-NAM	7.04	//	//	//	//
EAS	E.Asia	CMIP5-ALL	8.62	//	//	//	//
EAS	E.Asia	CMIP5	7.42	21.16	38.75	23.87	-42.34
EAS	E.Asia	CMIP6	10.00	31.01	48.37	31.29	-48.89
EAS	E.Asia	CORDEX-CORE-EAS	6.88	29.27	35.49	23.38	-46.62
EAS	E.Asia	CORDEX44-EAS	7.08	//	//	//	//
EAU	E.Australia	CMIP5-ALL	6.26	//	//	//	//
EAU	E.Australia	CMIP5	3.82	37.94	26.65	25.04	-12.17
EAU	E.Australia	CMIP6	7.62	53.13	42.54	45.50	-13.91
EAU	E.Australia	CORDEX-CORE-AUS	7.05	56.79	35.26	35.28	-12.77
EAU	E.Australia	CORDEX44-AUS	6.32	//	//	//	//
ECA	E.C.Asia	CMIP5-ALL	10.27	//	//	//	//
ECA	E.C.Asia	CMIP5	9.11	25.75	42.79	19.42	-66.12
ECA	E.C.Asia	CMIP6	11.03	38.32	56.80	26.92	-69.33
ECA	E.C.Asia	CORDEX-CORE-EAS	9.51	28.14	40.44	21.34	-61.50
ECA	E.C.Asia	CORDEX44-EAS	7.68	//	//	//	//
EEU	E.Europe	CMIP5-ALL	7.65	//	//	//	//
EEU	E.Europe	CMIP5	7.55	17.45	41.92	17.51	-71.54
EEU	E.Europe	CMIP6	7.87	24.03	53.16	20.74	-84.59
EEU	E.Europe	CORDEX-CORE-EUR	7.74	15.32	41.60	13.51	-74.73
EEU	E.Europe	CORDEX44-EUR	//	//	//	//	//
ENA	E.North-America	CMIP5-ALL	8.25	//	//	//	//
ENA	E.North-America	CMIP5	8.58	22.51	44.15	22.61	-61.87
ENA	E.North-America	CMIP6	9.78	24.91	52.68	28.61	-63.51
ENA	E.North-America	CORDEX-CORE-NAM	6.00	18.10	37.23	13.52	-50.60
ENA	E.North-America	CORDEX44-NAM	6.47	//	//	//	//
ESAF	E.Southern-Africa	CMIP5-ALL	7.43	//	//	//	//
ESAF	E.Southern-	CMIP5	6.89	53.36	31.89	41.79	-7.89

	Africa						
ESAF	E.Southern-Africa	CMIP6	8.83	72.53	46.44	58.52	-8.38
ESAF	E.Southern-Africa	CORDEX-CORE-AFR	8.98	101.37	45.01	58.00	-7.86
ESAF	E.Southern-Africa	CORDEX44-AFR	8.77	//	//	//	//
ESB	E.Siberia	CMIP5-ALL	8.68				
ESB	E.Siberia	CMIP5	8.47	4.62	34.36	7.50	-93.56
ESB	E.Siberia	CMIP6	9.25	8.91	50.19	11.48	-106.72
ESB	E.Siberia	CORDEX-CORE-EAS	7.28	3.77	33.80	7.71	-114.71
ESB	E.Siberia	CORDEX44-EAS	7.13	//	//	//	//
MDG	Madagascar	CMIP5-ALL	3.66	//	//	//	//
MDG	Madagascar	CMIP5	2.68	26.23	25.28	44.26	-1.01
MDG	Madagascar	CMIP6	5.20	38.66	36.84	56.35	-1.37
MDG	Madagascar	CORDEX-CORE-AFR	5.20	80.89	36.72	45.16	-2.73
MDG	Madagascar	CORDEX44-AFR	5.03	//	//	//	//
MED	Mediterranean	CMIP5-ALL	8.25	//	//	//	//
MED	Mediterranean	CMIP5	7.37	39.62	44.36	33.50	-25.53
MED	Mediterranean	CMIP6	9.02	52.91	56.22	44.53	-32.26
MED	Mediterranean	CORDEX-CORE-EUR	8.10	47.74	44.95	31.58	-31.27
MED	Mediterranean	CORDEX44-EUR	//	//	//	//	//
NAU	N.Australia	CMIP5-ALL	6.90	//	//	//	//
NAU	N.Australia	CMIP5	3.88	69.95	22.62	43.82	-1.51
NAU	N.Australia	CMIP6	6.72	86.81	37.62	68.99	-1.63
NAU	N.Australia	CORDEX-CORE-AUS	6.15	91.16	32.15	56.56	-0.97
NAU	N.Australia	CORDEX44-AUS	6.51	//	//	//	//
NCA	N.Central-America	CMIP5-ALL	8.51	//	//	//	//
NCA	N.Central-America	CMIP5	8.27	43.73	39.45	33.49	-20.89
NCA	N.Central-America	CMIP6	9.84	59.60	48.65	48.77	-22.16
NCA	N.Central-America	CORDEX-CORE-CAM	8.64	61.16	38.45	38.90	-15.55
NCA	N.Central-America	CORDEX44-CAM	7.23	//	//	//	//
NEAF	N.Eastern-Africa	CMIP5-ALL	5.96	//	//	//	//
NEAF	N.Eastern-Africa	CMIP5	4.73	91.64	36.06	49.18	-1.56
NEAF	N.Eastern-Africa	CMIP6	7.14	92.65	40.37	67.74	-1.61

NEAF	N.Eastern-Africa	CORDEX-CORE-AFR	6.82	118.01	44.04	73.29	-2.11
NEAF	N.Eastern-Africa	CORDEX44-AFR	8.00	//	//	//	//
NEN	N.E.North-America	CMIP5-ALL	6.89	//	//	//	//
NEN	N.E.North-America	CMIP5	7.38	3.70	25.72	4.50	-163.72
NEN	N.E.North-America	CMIP6	6.72	3.52	37.70	5.05	-150.27
NEN	N.E.North-America	CORDEX-CORE-NAM	5.59	0.58	19.73	1.36	-109.26
NEN	N.E.North-America	CORDEX44-NAM	6.23	//	//	//	//
NES	N.E.South-America	CMIP5-ALL	5.68	//	//	//	//
NES	N.E.South-America	CMIP5	4.24	71.16	27.51	55.92	-0.83
NES	N.E.South-America	CMIP6	6.43	93.34	44.01	74.01	-0.64
NES	N.E.South-America	CORDEX-CORE-SAM	5.33	108.91	37.39	61.16	-0.50
NES	N.E.South-America	CORDEX44-SAM	6.55	//	//	//	//
NEU	N.Europe	CMIP5-ALL	6.64	//	//	//	//
NEU	N.Europe	CMIP5	5.80	2.01	32.46	4.84	-72.41
NEU	N.Europe	CMIP6	7.34	0.73	41.98	3.69	-86.79
NEU	N.Europe	CORDEX-CORE-EUR	5.73	0.48	28.81	1.74	-68.55
NEU	N.Europe	CORDEX44-EUR	//	//	//	//	//
NSA	N.South-America	CMIP5-ALL	5.88	//	//	//	//
NSA	N.South-America	CMIP5	5.94	115.70	35.17	72.09	-0.02
NSA	N.South-America	CMIP6	6.27	139.46	52.54	93.34	-0.02
NSA	N.South-America	CORDEX-CORE-SAM	6.14	140.77	43.39	79.36	-0.14
NSA	N.South-America	CORDEX44-SAM	6.66	//	//	//	//
NWN	N.W.North-America	CMIP5-ALL	6.95	//	//	//	//
NWN	N.W.North-America	CMIP5	6.67	3.15	30.15	4.76	-124.41
NWN	N.W.North-America	CMIP6	6.80	2.62	42.26	4.63	-130.47
NWN	N.W.North-America	CORDEX-CORE-NAM	5.84	0.77	23.67	1.66	-99.03
NWN	N.W.North-America	CORDEX44-NAM	8.92	//	//	//	//

NWS	N.W.South-America	CMIP5-ALL	5.27	//	//	//	//
NWS	N.W.South-America	CMIP5	5.19	41.37	28.57	47.14	-2.38
NWS	N.W.South-America	CMIP6	6.73	59.56	44.72	63.20	-4.80
NWS	N.W.South-America	CORDEX-CORE-SAM	4.43	63.17	35.16	46.00	-11.48
NWS	N.W.South-America	CORDEX44-SAM	6.82	//	//	//	//
NZ	New-Zealand	CMIP5-ALL	1.85	//	//	//	//
NZ	New-Zealand	CMIP5	0.75	0.10	21.28	2.91	-30.95
NZ	New-Zealand	CMIP6	2.43	0.01	30.83	3.70	-34.97
NZ	New-Zealand	CORDEX-CORE-AUS	2.13	0.10	25.26	3.35	-36.83
NZ	New-Zealand	CORDEX44-AUS	1.71	//	//	//	//
RAR	Russian-Arctic	CMIP5-ALL	6.72	//	//	//	//
RAR	Russian-Arctic	CMIP5	7.35	0.55	23.19	1.51	-160.64
RAR	Russian-Arctic	CMIP6	6.52	0.63	39.50	2.56	-164.93
RAR	Russian-Arctic	CORDEX-CORE-EUR	7.37	0.53	37.79	2.19	-124.24
RAR	Russian-Arctic	CORDEX44-EUR	//	//	//	//	//
RFE	Russian-Far-East	CMIP5-ALL	7.84	//	//	//	//
RFE	Russian-Far-East	CMIP5	7.47	1.01	29.55	3.21	-114.64
RFE	Russian-Far-East	CMIP6	8.08	1.76	43.38	5.07	-121.89
RFE	Russian-Far-East	CORDEX-CORE-EAS	6.83	1.94	31.45	5.58	-123.05
RFE	Russian-Far-East	CORDEX44-EAS	7.05	//	//	//	//
SAH	Sahara	CMIP5-ALL	9.05	//	//	//	//
SAH	Sahara	CMIP5	7.96	58.95	44.38	54.80	-9.86
SAH	Sahara	CMIP6	9.74	71.06	54.74	77.20	-10.61
SAH	Sahara	CORDEX-CORE-AFR	8.52	76.04	49.05	72.06	-10.76
SAH	Sahara	CORDEX44-AFR	8.93	//	//	//	//
SAM	South-American-Monsoon	CMIP5-ALL	8.95	//	//	//	//
SAM	South-American-Monsoon	CMIP5	8.90	99.86	34.84	63.70	-6.61
SAM	South-American-Monsoon	CMIP6	8.81	120.35	52.45	85.70	-6.45
SAM	South-	CORDEX-	7.76	125.87	43.93	70.67	-6.79

	American-Monsoon	CORE-SAM					
SAM	South-American-Monsoon	CORDEX44-SAM	9.93	//	//	//	//
SAS	S.Asia	CMIP5-ALL	6.99	//	//	//	//
SAS	S.Asia	CMIP5	6.26	47.12	35.00	43.25	-10.56
SAS	S.Asia	CMIP6	7.36	58.93	40.37	61.76	-11.24
SAS	S.Asia	CORDEX-CORE-WAS	6.83	72.00	36.79	56.89	-7.03
SAS	S.Asia	CORDEX44-WAS	5.79	//	//	//	//
SAU	S.Australia	CMIP5-ALL	3.98	//	//	//	//
SAU	S.Australia	CMIP5	2.99	24.11	24.34	15.02	-18.31
SAU	S.Australia	CMIP6	5.57	37.28	39.69	29.83	-19.65
SAU	S.Australia	CORDEX-CORE-AUS	5.41	46.08	34.30	27.74	-17.92
SAU	S.Australia	CORDEX44-AUS	2.83	//	//	//	//
SCA	S.Central-America	CMIP5-ALL	5.24	//	//	//	//
SCA	S.Central-America	CMIP5	4.34	66.00	35.45	53.11	-0.77
SCA	S.Central-America	CMIP6	6.56	68.75	41.51	68.86	-1.11
SCA	S.Central-America	CORDEX-CORE-CAM	6.07	86.35	35.85	48.11	-3.18
SCA	S.Central-America	CORDEX44-CAM	5.20	//	//	//	//
SEA	S.E.Asia	CMIP5-ALL	2.74	//	//	//	//
SEA	S.E.Asia	CMIP5	1.85	27.15	25.66	49.17	-0.48
SEA	S.E.Asia	CMIP6	3.25	34.22	34.81	64.74	-0.40
SEA	S.E.Asia	CORDEX-CORE-SEA	3.99	58.53	29.81	49.72	-0.76
SEA	S.E.Asia	CORDEX44-SEA	//	//	//	//	//
SEAF	S.Eastern-Africa	CMIP5-ALL	5.20	//	//	//	//
SEAF	S.Eastern-Africa	CMIP5	3.75	44.75	25.70	42.51	-1.92
SEAF	S.Eastern-Africa	CMIP6	6.31	63.73	38.75	57.93	-1.29
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR	5.96	109.62	40.41	58.96	-1.50
SEAF	S.Eastern-Africa	CORDEX44-AFR	6.73	//	//	//	//
SES	S.Eastern-Africa	CMIP5-ALL	7.80	//	//	//	//
SES	S.E.South-America	CMIP5	6.52	44.18	27.21	26.74	-13.45
SES	S.E.South-	CMIP6	7.39	57.48	42.92	43.88	-15.97

	America						
SES	S.E.South-America	CORDEX-CORE-SAM	4.42	56.16	30.50	32.54	-12.46
SES	S.E.South-America	CORDEX44-SAM	6.87	//	//	//	//
SSA	S.South-America	CMIP5-ALL	2.01	//	//	//	//
SSA	S.South-America	CMIP5	1.48	1.59	17.47	2.07	-37.09
SSA	S.South-America	CMIP6	3.83	4.59	30.33	4.67	-43.90
SSA	S.South-America	CORDEX-CORE-SAM	1.83	2.91	18.27	3.82	-37.58
SSA	S.South-America	CORDEX44-SAM	2.91	//	//	//	//
SWS	S.W.South-America	CMIP5-ALL	6.37	//	//	//	//
SWS	S.W.South-America	CMIP5	5.99	7.43	28.06	9.24	-35.00
SWS	S.W.South-America	CMIP6	7.53	8.64	40.71	13.04	-45.74
SWS	S.W.South-America	CORDEX-CORE-SAM	5.47	19.21	27.50	11.17	-48.15
SWS	S.W.South-America	CORDEX44-SAM	7.65	//	//	//	//
TIB	Tibetan-Plateau	CMIP5-ALL	9.12	//	//	//	//
TIB	Tibetan-Plateau	CMIP5	8.87	4.01	25.14	3.65	-91.75
TIB	Tibetan-Plateau	CMIP6	10.07	7.59	30.48	7.78	-95.61
TIB	Tibetan-Plateau	CORDEX-CORE-EAS	8.36	6.68	20.44	5.88	-97.95
TIB	Tibetan-Plateau	CORDEX44-EAS	7.41	//	//	//	//
WAF	Western-Africa	CMIP5-ALL	5.60	//	//	//	//
WAF	Western-Africa	CMIP5	4.72	89.03	36.42	57.86	-0.98
WAF	Western-Africa	CMIP6	6.67	92.95	41.15	74.85	-0.89
WAF	Western-Africa	CORDEX-CORE-AFR	6.43	112.96	41.63	76.17	-0.87
WAF	Western-Africa	CORDEX44-AFR	7.18	//	//	//	//
WCA	W.C.Asia	CMIP5-ALL	9.66	//	//	//	//
WCA	W.C.Asia	CMIP5	9.38	41.17	46.42	35.48	-38.53
WCA	W.C.Asia	CMIP6	10.07	54.45	58.85	48.45	-46.48
WCA	W.C.Asia	CORDEX-CORE-EAS	9.35	38.87	44.50	35.49	-39.55
WCA	W.C.Asia	CORDEX44-	7.88	//	//	//	//

		EAS					
WCE	West&Central-Europe	CMIP5-ALL	7.74	//	//	//	//
WCE	West&Central-Europe	CMIP5	7.03	18.09	40.64	18.36	-50.96
WCE	West&Central-Europe	CMIP6	8.31	22.07	51.30	20.30	-61.86
WCE	West&Central-Europe	CORDEX-CORE-EUR	6.47	13.76	35.05	11.96	-50.07
WCE	West&Central-Europe	CORDEX44-EUR	//	//	//	//	//
WNA	W.North-America	CMIP5-ALL	8.83	//	//	//	//
WNA	W.North-America	CMIP5	8.36	24.72	42.51	17.82	-56.55
WNA	W.North-America	CMIP6	9.51	32.57	53.90	22.77	-64.88
WNA	W.North-America	CORDEX-CORE-NAM	7.55	18.74	34.47	13.81	-54.46
WNA	W.North-America	CORDEX44-NAM	7.64	//	//	//	//
WSAF	W.Southern-Africa	CMIP5-ALL	9.07	//	//	//	//
WSAF	W.Southern-Africa	CMIP5	8.61	76.71	33.73	42.44	-10.39
WSAF	W.Southern-Africa	CMIP6	9.34	94.12	48.52	61.32	-9.74
WSAF	W.Southern-Africa	CORDEX-CORE-AFR	9.53	131.02	46.46	63.93	-8.99
WSAF	W.Southern-Africa	CORDEX44-AFR	9.82	//	//	//	//
WSB	W.Siberia	CMIP5-ALL	8.38	//	//	//	//
WSB	W.Siberia	CMIP5	8.65	17.20	42.73	16.20	-89.35
WSB	W.Siberia	CMIP6	8.46	24.05	55.82	20.36	-96.26
WSB	W.Siberia	CORDEX-CORE-EAS	8.27	23.30	42.87	21.62	-95.66
WSB	W.Siberia	CORDEX44-EAS	7.36	//	//	//	//

Table 4: the area average change values (land point only) for the Temperature and Heat indicators for all the subregions as defined in Iturbide et al., 2020 for the far future time slice and RCP8.5 scenario (SSP585 for CMIP6). CMIP5-ALL is the whole CMIP5 ensemble; CMIP5 is the ensemble of the driving GCMs; CMIP6 is the CMIP6 ensemble; CORDEX-CORE-"CORDEX REGION" is the CORDEX-CORE ensemble over a specific CORDEX Region (see Table 2); CORDEX44-"CORDEX REGION" is the CORDEX 0.44 ensemble over a specific CORDEX Region (see Table 2).

Region acronym	Region	Ensemble	DF (N./decade)	Q100 (%)	NDD (N.days/year)	P99 (%)
ARP	Arabian-Peninsula	CMIP5-ALL	0.38	//	//	38.55
ARP	Arabian-Peninsula	CMIP5	0.78	21.45	-2.78	17.18
ARP	Arabian-Peninsula	CMIP6	0.05	120.29	-8.16	59.32
ARP	Arabian-Peninsula	CORDEX-CORE-AFR	2.35	55.25	2.42	1.99
ARP	Arabian-Peninsula	CORDEX44-AFR	1.19	//	//	74.36
CAF	Central-Africa	CMIP5-ALL	0.39	//	//	13.36
CAF	Central-Africa	CMIP5	-0.02	54.11	8.07	22.77
CAF	Central-Africa	CMIP6	-0.05	80.74	6.98	22.57
CAF	Central-Africa	CORDEX-CORE-AFR	2.21	67.54	16.36	14.71
CAF	Central-Africa	CORDEX44-AFR	0.85	//	//	16.24
CAR	Caribbean	CMIP5-ALL	3.21	//	//	-7.20
CAR	Caribbean	CMIP5	3.81	15.48	15.72	-8.33
CAR	Caribbean	CMIP6	3.94	-11.55	9.32	-1.15
CAR	Caribbean	CORDEX-CORE-CAM	3.90	-3.57	18.55	-9.71
CAR	Caribbean	CORDEX44-CAM	3.15	//	//	-5.45
CAU	C.Australia	CMIP5-ALL	1.73	//	//	-7.30
CAU	C.Australia	CMIP5	1.74	29.69	1.95	1.66
CAU	C.Australia	CMIP6	1.26	56.45	-2.20	-0.29
CAU	C.Australia	CORDEX-CORE-AUS	1.97	146.77	1.29	2.62
CAU	C.Australia	CORDEX44-AUS	1.77	//	//	-3.12
CNA	C.North-America	CMIP5-ALL	0.16	//	//	8.91
CNA	C.North-America	CMIP5	0.21	8.57	4.09	10.18
CNA	C.North-America	CMIP6	0.04	40.15	-3.51	2.79
CNA	C.North-America	CORDEX-CORE-NAM	-0.54	32.50	2.02	15.92
CNA	C.North-America	CORDEX44-NAM	-1.27	//	//	15.78
EAS	E.Asia	CMIP5-ALL	-0.75	//	//	19.53
EAS	E.Asia	CMIP5	-0.83	41.99	1.70	22.45
EAS	E.Asia	CMIP6	-1.45	52.04	-6.44	15.74
EAS	E.Asia	CORDEX-CORE-EAS	0.78	43.03	3.92	14.70
EAS	E.Asia	CORDEX44-EAS	//	//	//	8.03
EAU	E.Australia	CMIP5-ALL	1.70	//	//	0.40

EAU	E.Australia	CMIP5	2.02	42.50	9.25	2.53
EAU	E.Australia	CMIP6	1.08	104.70	-5.17	-0.87
EAU	E.Australia	CORDEX-CORE-AUS	2.50	54.95	6.54	2.23
EAU	E.Australia	CORDEX44-AUS	2.97	//	//	-9.66
ECA	E.C.Asia	CMIP5-ALL	-1.05	//	//	24.38
ECA	E.C.Asia	CMIP5	-1.79	9.38	-7.86	25.96
ECA	E.C.Asia	CMIP6	-1.86	35.41	-15.46	28.17
ECA	E.C.Asia	CORDEX-CORE-EAS	-1.13	10.01	-5.42	19.86
ECA	E.C.Asia	CORDEX44-EAS	-2.02	//	//	38.30
EEU	E.Europe	CMIP5-ALL	-1.00	//	//	18.07
EEU	E.Europe	CMIP5	-0.15	-12.37	1.85	13.44
EEU	E.Europe	CMIP6	-0.37	-29.80	-8.36	11.85
EEU	E.Europe	CORDEX-CORE-EUR	-0.69	-11.88	3.27	18.03
EEU	E.Europe	CORDEX44-EUR	-1.24	//	//	//
ENA	E.North-America	CMIP5-ALL	-0.79	//	//	15.30
ENA	E.North-America	CMIP5	-1.47	6.54	-0.25	17.26
ENA	E.North-America	CMIP6	-1.35	6.83	-7.22	12.12
ENA	E.North-America	CORDEX-CORE-NAM	-1.06	38.13	2.53	19.84
ENA	E.North-America	CORDEX44-NAM	-1.32	//	//	18.89
ESAF	E.Southern-Africa	CMIP5-ALL	3.40	//	//	7.04
ESAF	E.Southern-Africa	CMIP5	3.78	37.37	21.29	12.23
ESAF	E.Southern-Africa	CMIP6	3.58	61.79	12.73	1.46
ESAF	E.Southern-Africa	CORDEX-CORE-AFR	4.19	34.15	26.47	6.32
ESAF	E.Southern-Africa	CORDEX44-AFR	1.95	//	//	7.24
ESB	E.Siberia	CMIP5-ALL	-2.00	//	//	18.90
ESB	E.Siberia	CMIP5	-2.08	7.57	-9.61	15.63
ESB	E.Siberia	CMIP6	-2.21	22.70	-20.72	13.47
ESB	E.Siberia	CORDEX-CORE-EAS	-1.23	31.06	-10.41	14.97
ESB	E.Siberia	CORDEX44-EAS	//	//	//	11.32
MDG	Madagascar	CMIP5-ALL	2.60	//	//	6.82
MDG	Madagascar	CMIP5	4.22	47.61	23.13	3.29
MDG	Madagascar	CMIP6	3.84	59.12	3.84	3.43
MDG	Madagascar	CORDEX-	3.89	47.43	19.90	9.23

		CORE-AFR				
MDG	Madagascar	CORDEX44-AFR	1.51	//	//	8.37
MED	Mediterranean	CMIP5-ALL	3.93	//	//	-8.18
MED	Mediterranean	CMIP5	4.19	2.54	17.91	-3.70
MED	Mediterranean	CMIP6	4.19	11.88	11.13	-7.16
MED	Mediterranean	CORDEX-CORE-EUR	3.81	1.60	16.58	-3.13
MED	Mediterranean	CORDEX44-EUR	3.24	//	//	//
NAU	N.Australia	CMIP5-ALL	0.96	//	//	1.29
NAU	N.Australia	CMIP5	1.11	34.78	-1.35	6.74
NAU	N.Australia	CMIP6	0.59	60.94	-0.38	7.42
NAU	N.Australia	CORDEX-CORE-AUS	2.35	142.73	-0.42	3.89
NAU	N.Australia	CORDEX44-AUS	2.13	//	//	-0.08
NCA	N.Central-America	CMIP5-ALL	2.46	//	//	-0.73
NCA	N.Central-America	CMIP5	2.67	15.89	14.42	2.97
NCA	N.Central-America	CMIP6	2.76	24.39	2.15	-4.82
NCA	N.Central-America	CORDEX-CORE-CAM	3.44	12.23	14.12	-4.23
NCA	N.Central-America	CORDEX44-CAM	2.43	//	//	0.41
NEAF	N.Eastern-Africa	CMIP5-ALL	-0.80	//	//	24.62
NEAF	N.Eastern-Africa	CMIP5	-0.71	93.21	-4.46	27.98
NEAF	N.Eastern-Africa	CMIP6	-1.40	149.87	-17.09	38.52
NEAF	N.Eastern-Africa	CORDEX-CORE-AFR	2.57	141.09	14.20	10.90
NEAF	N.Eastern-Africa	CORDEX44-AFR	0.45	//	//	19.98
NEN	N.E.North-America	CMIP5-ALL	-2.20	//	//	26.18
NEN	N.E.North-America	CMIP5	-2.64	7.34	-15.94	25.16
NEN	N.E.North-America	CMIP6	-2.87	3.70	-23.53	25.90
NEN	N.E.North-America	CORDEX-CORE-NAM	-2.66	13.84	-5.13	23.79
NEN	N.E.North-America	CORDEX44-NAM	-2.91	//	//	12.67
NES	N.E.South-America	CMIP5-ALL	2.73	//	//	12.12
NES	N.E.South-America	CMIP5	2.51	56.70	18.22	11.18

NES	N.E.South-America	CMIP6	3.14	20.93	24.27	-2.45
NES	N.E.South-America	CORDEX-CORE-SAM	4.25	61.14	23.28	8.33
NES	N.E.South-America	CORDEX44-SAM	1.56	//	//	23.33
NEU	N.Europe	CMIP5-ALL	-1.49	//	//	19.36
NEU	N.Europe	CMIP5	-1.31	-7.71	2.03	15.24
NEU	N.Europe	CMIP6	-1.59	-25.77	-13.09	15.15
NEU	N.Europe	CORDEX-CORE-EUR	-2.07	3.74	-2.68	24.82
NEU	N.Europe	CORDEX44-EUR	-2.01	//	//	//
NSA	N.South-America	CMIP5-ALL	3.03	//	//	6.83
NSA	N.South-America	CMIP5	3.43	60.31	32.43	5.71
NSA	N.South-America	CMIP6	4.34	5.42	27.35	-0.50
NSA	N.South-America	CORDEX-CORE-SAM	4.66	-0.55	44.91	-9.92
NSA	N.South-America	CORDEX44-SAM	0.68	//	//	20.44
NWN	N.W.North-America	CMIP5-ALL	-2.16	//	//	27.28
NWN	N.W.North-America	CMIP5	-2.39	4.51	-11.51	22.40
NWN	N.W.North-America	CMIP6	-2.80	-5.26	-23.96	24.16
NWN	N.W.North-America	CORDEX-CORE-NAM	-2.01	8.08	-1.58	22.24
NWN	N.W.North-America	CORDEX44-NAM	-2.89	//	//	28.43
NWS	N.W.South-America	CMIP5-ALL	0.32	//	//	14.61
NWS	N.W.South-America	CMIP5	-0.31	52.97	3.80	18.96
NWS	N.W.South-America	CMIP6	1.86	25.25	-1.44	4.12
NWS	N.W.South-America	CORDEX-CORE-SAM	1.97	34.43	16.61	11.64
NWS	N.W.South-America	CORDEX44-SAM	-0.33	//	//	27.58
NZ	New-Zealand	CMIP5-ALL	-0.21	//	//	13.24
NZ	New-Zealand	CMIP5	0.28	38.61	14.06	14.41
NZ	New-Zealand	CMIP6	-0.32	40.92	0.41	8.26
NZ	New-Zealand	CORDEX-CORE-AUS	0.29	24.43	9.38	11.38
NZ	New-Zealand	CORDEX44-AUS	1.05	//	//	4.53
RAR	Russian-Arctic	CMIP5-ALL	-2.35	//	//	28.31

RAR	Russian-Arctic	CMIP5	-3.06	2.03	-23.18	25.64
RAR	Russian-Arctic	CMIP6	-3.23	-1.59	-31.33	26.59
RAR	Russian-Arctic	CORDEX-CORE-EUR	-3.13	-16.18	-20.29	51.70
RAR	Russian-Arctic	CORDE44-EUR	-2.49	//	//	//
RFE	Russian-Far-East	CMIP5-ALL	-2.46	//	//	26.65
RFE	Russian-Far-East	CMIP5	-2.32	11.45	-9.00	25.79
RFE	Russian-Far-East	CMIP6	-2.99	10.90	-23.93	25.63
RFE	Russian-Far-East	CORDEX-CORE-EAS	-1.27	34.17	-8.22	23.24
RFE	Russian-Far-East	CORDEX44-EAS	//	//	//	12.41
SAH	Sahara	CMIP5-ALL	1.13	//	//	31.12
SAH	Sahara	CMIP5	1.61	90.39	0.05	18.71
SAH	Sahara	CMIP6	0.48	146.49	-4.62	68.79
SAH	Sahara	CORDEX-CORE-AFR	2.76	124.04	4.74	-17.67
SAH	Sahara	CORDEX44-AFR	1.08	//	//	14.54
SAM	South-American-Monsoon	CMIP5-ALL	2.40	//	//	9.65
SAM	South-American-Monsoon	CMIP5	3.12	37.23	20.92	12.58
SAM	South-American-Monsoon	CMIP6	3.56	0.44	21.68	-1.92
SAM	South-American-Monsoon	CORDEX-CORE-SAM	4.16	56.45	29.55	9.24
SAM	South-American-Monsoon	CORDEX44-SAM	1.06	//	//	19.27
SAS	S.Asia	CMIP5-ALL	-0.11			30.73
SAS	S.Asia	CMIP5	0.51	68.04	-0.42	17.53
SAS	S.Asia	CMIP6	-0.65	88.55	-11.95	30.27
SAS	S.Asia	CORDEX-CORE-WAS	1.69	47.15	7.39	10.12
SAS	S.Asia	CORDEX44-WAS	-0.93	//	//	38.39
SAU	S.Australia	CMIP5-ALL	2.61	//	//	0.61
SAU	S.Australia	CMIP5	2.66	41.21	13.05	2.07
SAU	S.Australia	CMIP6	2.44	93.97	5.09	1.87
SAU	S.Australia	CORDEX-CORE-AUS	3.44	36.69	15.35	1.66
SAU	S.Australia	CORDEX44-	2.74			-0.36

		AUS				
SCA	S.Central-America	CMIP5-ALL	3.51	//	//	-4.29
SCA	S.Central-America	CMIP5	3.02	56.35	21.74	0.47
SCA	S.Central-America	CMIP6	4.42	-17.72	13.26	-12.14
SCA	S.Central-America	CORDEX-CORE-CAM	3.93	26.39	20.59	-7.11
SCA	S.Central-America	CORDEX44-CAM	2.63	//	//	-8.77
SEA	S.E.Asia	CMIP5-ALL	-0.30	//	//	20.79
SEA	S.E.Asia	CMIP5	-0.53	57.91	0.79	20.10
SEA	S.E.Asia	CMIP6	0.43	50.30	1.61	9.07
SEA	S.E.Asia	CORDEX-CORE-SEA	1.46	29.36	13.47	15.40
SEA	S.E.Asia	CORDEX44-SEA	//	//	//	//
SEAF	S.Eastern-Africa	CMIP5-ALL	0.08	//	//	20.02
SEAF	S.Eastern-Africa	CMIP5	0.67	70.83	5.47	16.03
SEAF	S.Eastern-Africa	CMIP6	-0.04	91.18	-1.74	19.91
SEAF	S.Eastern-Africa	CORDEX-CORE-AFR	1.63	88.65	12.33	19.80
SEAF	S.Eastern-Africa	CORDEX44-AFR	0.02	//	//	14.81
SES	S.Eastern-Africa	CMIP5-ALL	0.85	//	//	15.43
SES	S.E.South-America	CMIP5	1.30	49.58	8.49	13.40
SES	S.E.South-America	CMIP6	0.46	81.22	1.06	5.43
SES	S.E.South-America	CORDEX-CORE-SAM	0.40	82.29	8.15	17.27
SES	S.E.South-America	CORDEX44-SAM	0.66	//	//	11.90
SSA	S.South-America	CMIP5-ALL	2.29	//	//	4.74
SSA	S.South-America	CMIP5	2.26	-18.62	12.96	4.27
SSA	S.South-America	CMIP6	2.29	10.39	-0.96	4.98
SSA	S.South-America	CORDEX-CORE-SAM	2.04	-19.46	10.78	4.19
SSA	S.South-America	CORDEX44-SAM	0.63	//	//	8.71
SWS	S.W.South-America	CMIP5-ALL	3.45	//	//	-5.85
SWS	S.W.South-	CMIP5	3.99	4.07	19.16	-1.80

	America					
SWS	S.W.South-America	CMIP6	3.60	16.70	1.24	-1.34
SWS	S.W.South-America	CORDEX-CORE-SAM	2.92	-1.16	13.34	1.30
SWS	S.W.South-America	CORDEX44-SAM	2.61	//	//	5.19
TIB	Tibetan-Plateau	CMIP5-ALL	-0.39	//	//	24.75
TIB	Tibetan-Plateau	CMIP5	-0.57	21.61	-0.77	26.25
TIB	Tibetan-Plateau	CMIP6	-1.91	43.98	-22.45	25.29
TIB	Tibetan-Plateau	CORDEX-CORE-EAS	-0.62	41.91	-10.14	26.67
TIB	Tibetan-Plateau	CORDEX44-EAS	-1.92	//	//	35.97
WAF	Western-Africa	CMIP5-ALL	1.73	//	//	7.70
WAF	Western-Africa	CMIP5	1.86	57.34	11.72	22.82
WAF	Western-Africa	CMIP6	1.39	62.51	-0.17	18.18
WAF	Western-Africa	CORDEX-CORE-AFR	3.47	41.47	17.78	4.11
WAF	Western-Africa	CORDEX44-AFR	0.45	//	//	15.49
WCA	W.C.Asia	CMIP5-ALL	1.56	//	//	8.46
WCA	W.C.Asia	CMIP5	1.85	-3.35	7.16	9.03
WCA	W.C.Asia	CMIP6	1.02	17.79	-2.81	13.14
WCA	W.C.Asia	CORDEX-CORE-EAS	1.85	6.25	6.22	-0.73
WCA	W.C.Asia	CORDEX44-EAS	1.30	//	//	18.75
WCE	West&Central-Europe	CMIP5-ALL	0.67	//	//	14.46
WCE	West&Central-Europe	CMIP5	1.14	-17.37	9.50	13.54
WCE	West&Central-Europe	CMIP6	1.28	-11.20	1.39	7.51
WCE	West&Central-Europe	CORDEX-CORE-EUR	-0.07	35.70	8.33	18.75
WCE	West&Central-Europe	CORDEX44-EUR	-0.50	//	//	//
WNA	W.North-America	CMIP5-ALL	0.26	//	//	13.36
WNA	W.North-America	CMIP5	0.15	-7.19	5.78	9.64
WNA	W.North-America	CMIP6	0.08	-8.04	-7.29	9.34
WNA	W.North-	CORDEX-	-0.01	4.13	1.20	11.47

	America	CORE-NAM				
WNA	W.North-America	CORDEX44-NAM	-1.34	//	//	17.02
WSAF	W.Southern-Africa	CMIP5-ALL	3.52	//	//	-4.69
WSAF	W.Southern-Africa	CMIP5	3.94	9.81	16.35	3.56
WSAF	W.Southern-Africa	CMIP6	3.71	15.17	10.40	-6.68
WSAF	W.Southern-Africa	CORDEX-CORE-AFR	4.57	-5.05	23.39	0.51
WSAF	W.Southern-Africa	CORDEX44-AFR	2.42	//	//	-2.39
WSB	W.Siberia	CMIP5-ALL	-1.22	//	//	16.95
WSB	W.Siberia	CMIP5	-0.51	-7.36	-2.18	13.32
WSB	W.Siberia	CMIP6	-0.89	-21.31	-12.46	13.42
WSB	W.Siberia	CORDEX-CORE-EAS	1.47	-10.52	1.52	9.98
WSB	W.Siberia	CORDEX44-EAS	//	//	//	19.53

Table 5: the same as in Table 4 but for wet and dry indicators.

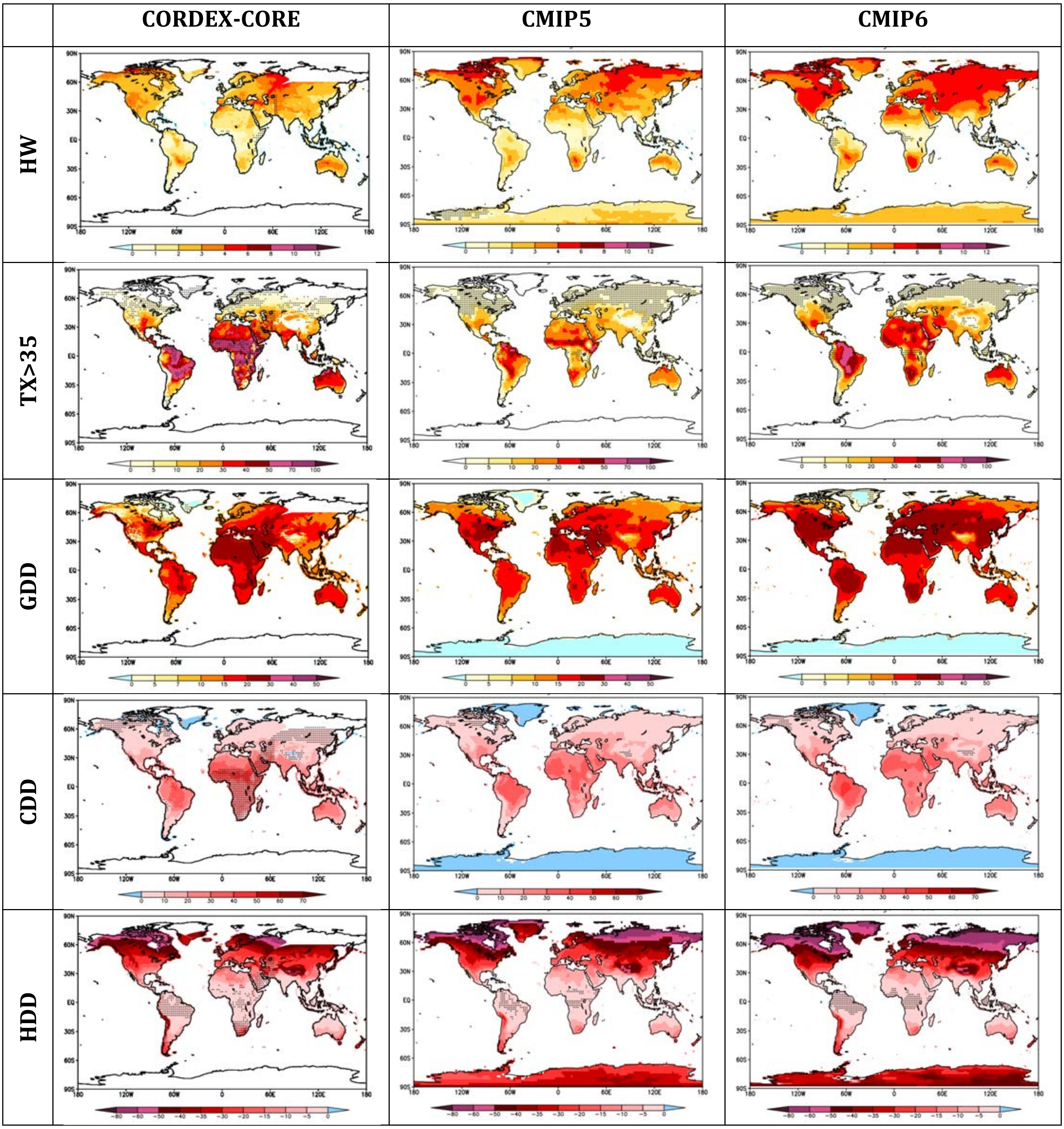

Fig. S1: Mid future change for RCP8.5 (SSP585 for CMIP6) for the Temperature and Heat indicators. Little black dots indicate areas where the change signal is not significant.

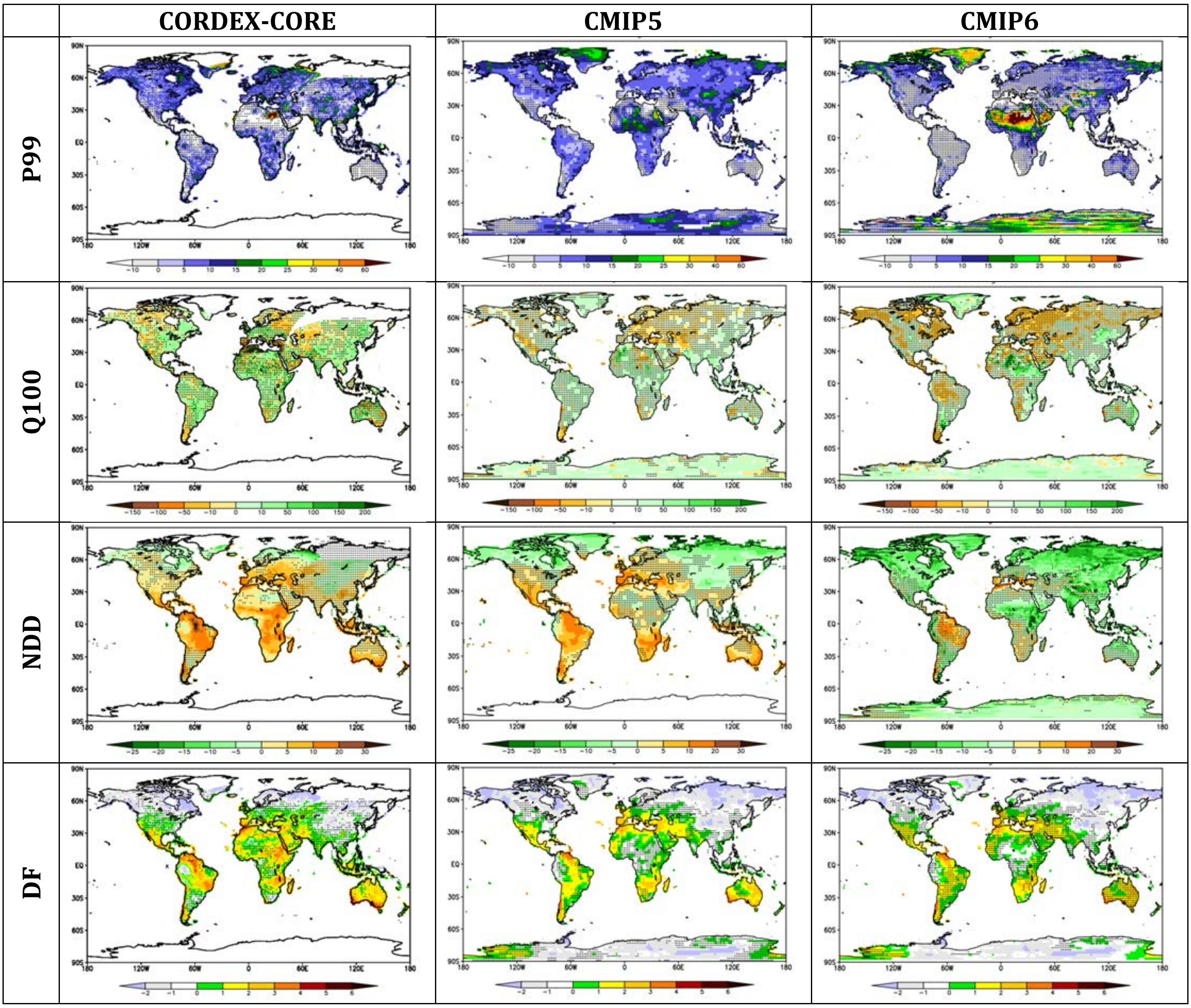

Fig. S2: Mid future change for RCP8.5 (SSP585 for CMIP6) for Dry and Wet indicators. Little black dots indicate areas where the change signal is not significant.

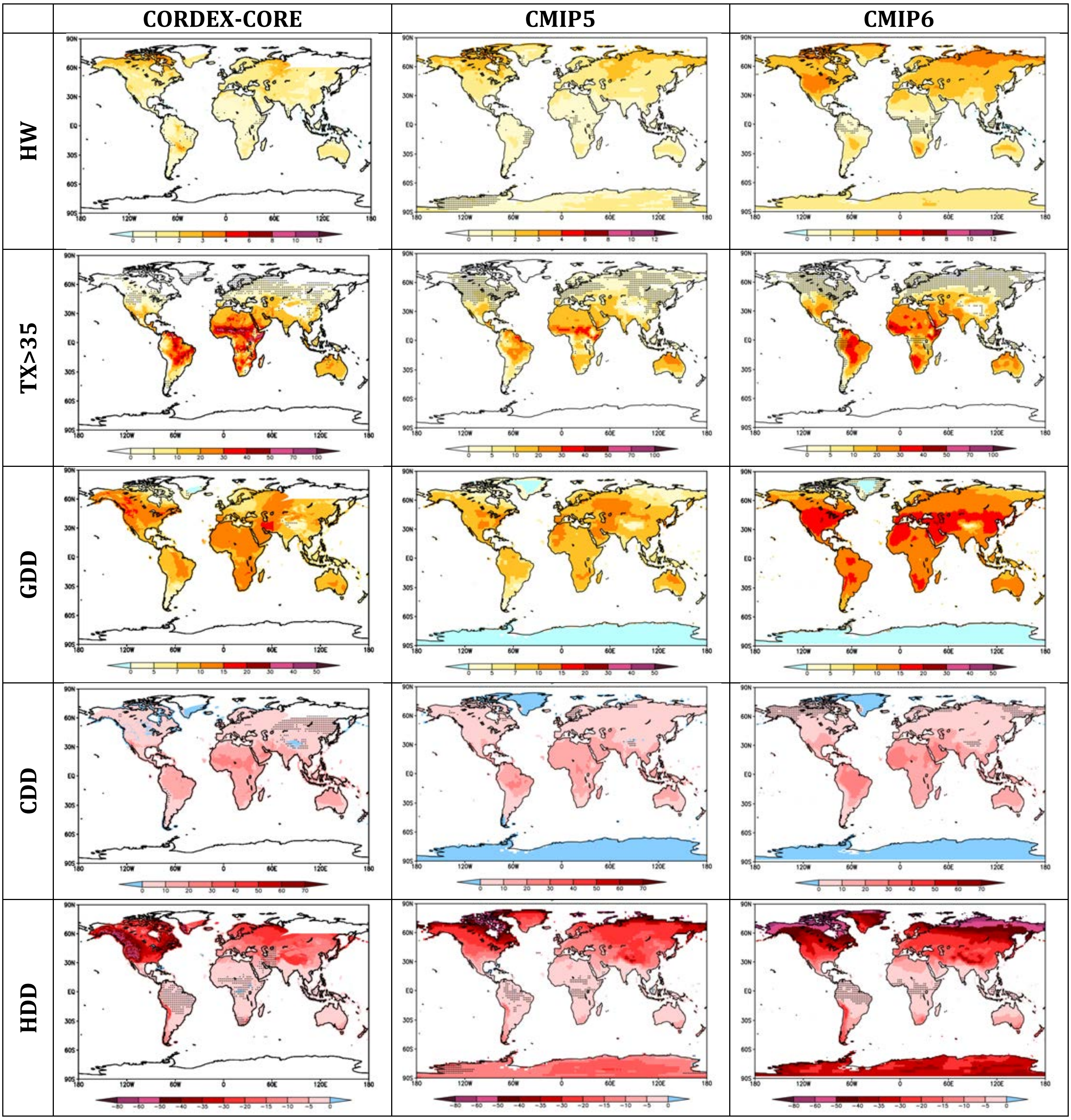

Fig. S3: Mid future change for RCP2.6 (SSP126 for CMIP6) for the Temperature and Heat indicators. Little black dots indicate areas where the change signal is not significant.

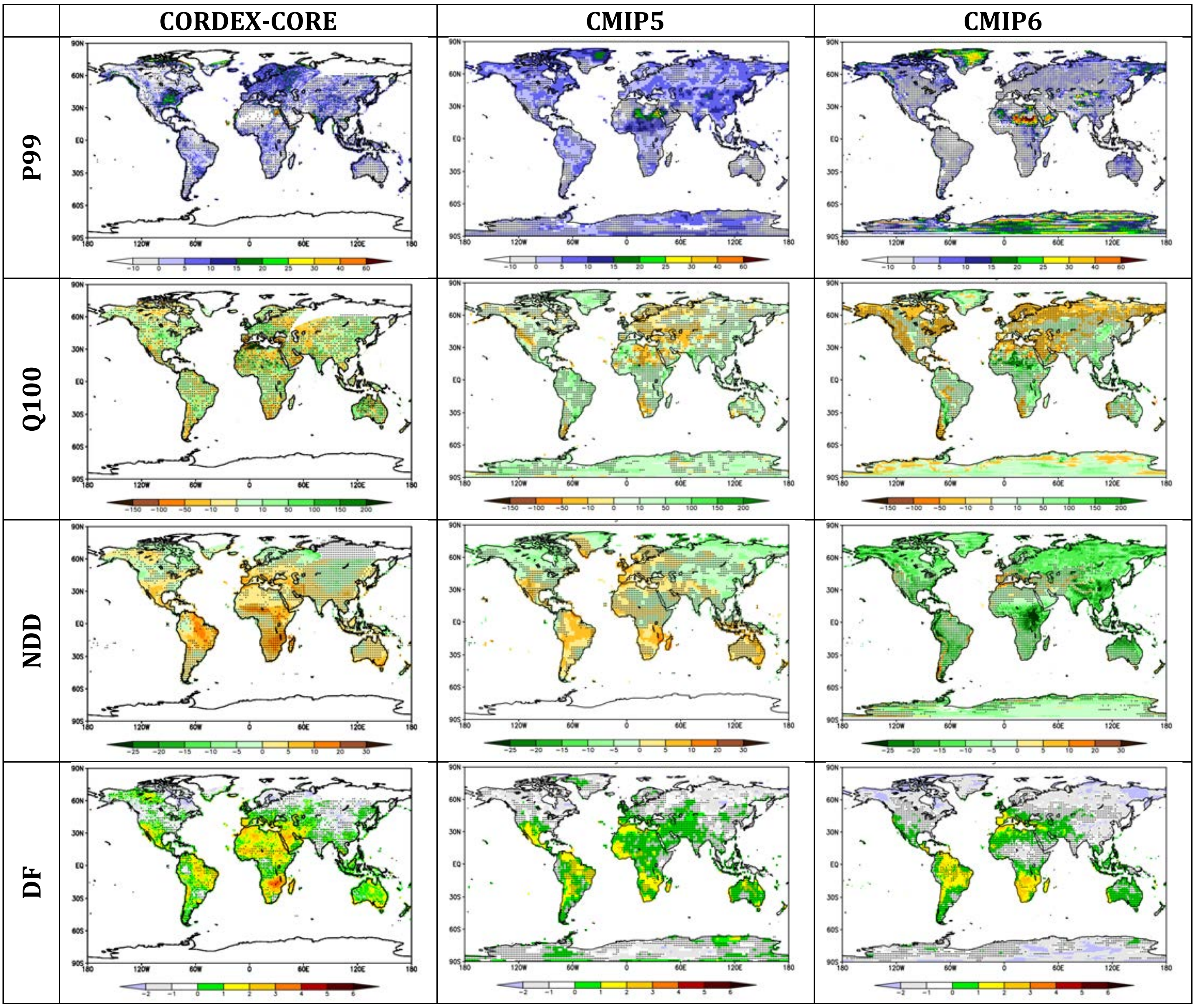

Fig. S4: Mid future change for RCP2.6 (SSP126 for CMIP6) for Dry and Wet indicators. Little black dots indicate areas where the change signal is not significant.

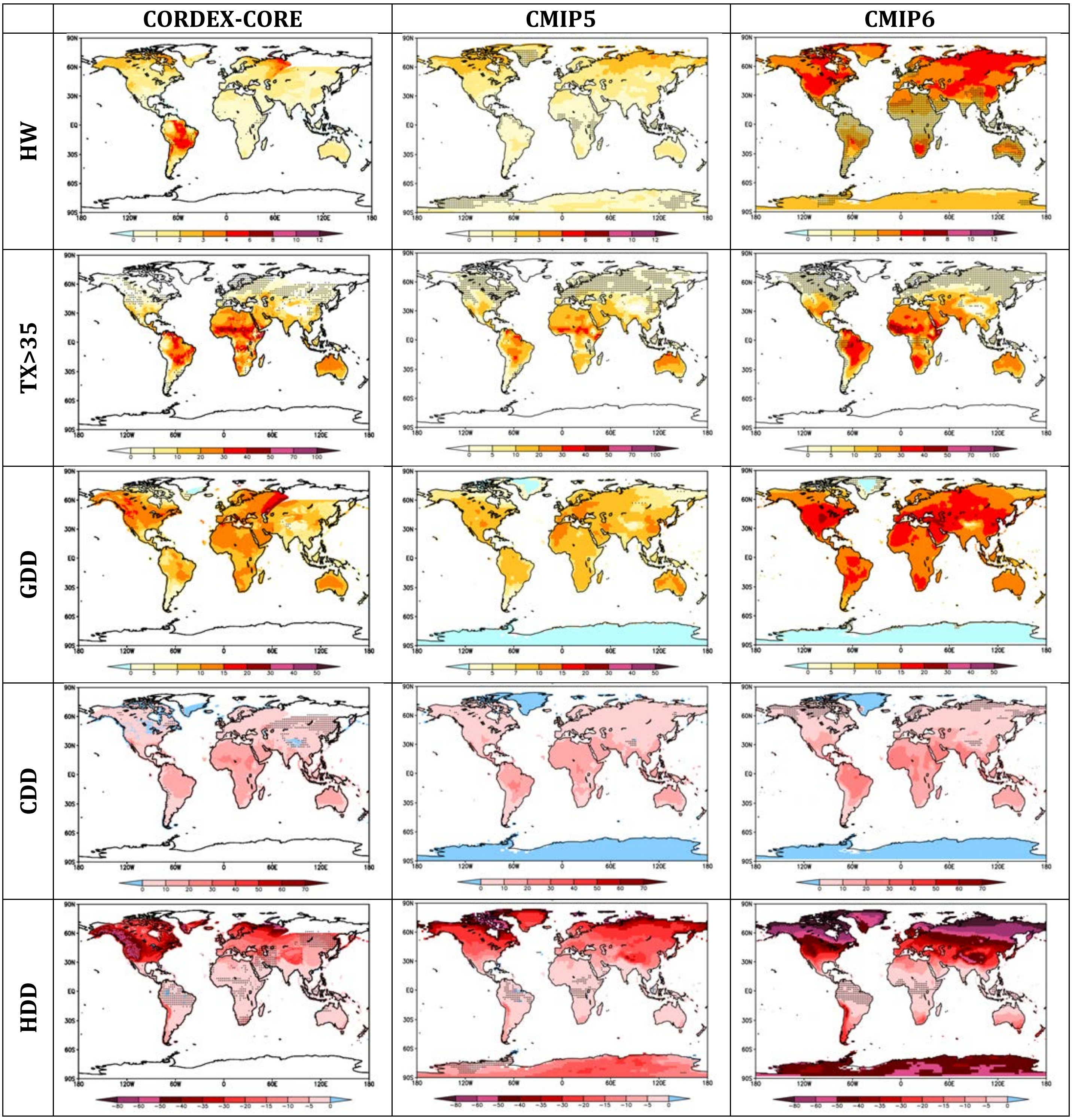

Fig. S5 : Far future change for RCP2.6 (SSP126 for CMIP6) for the Temperature and Heat indicators. Little black dots indicate areas where the change signal is not significant.

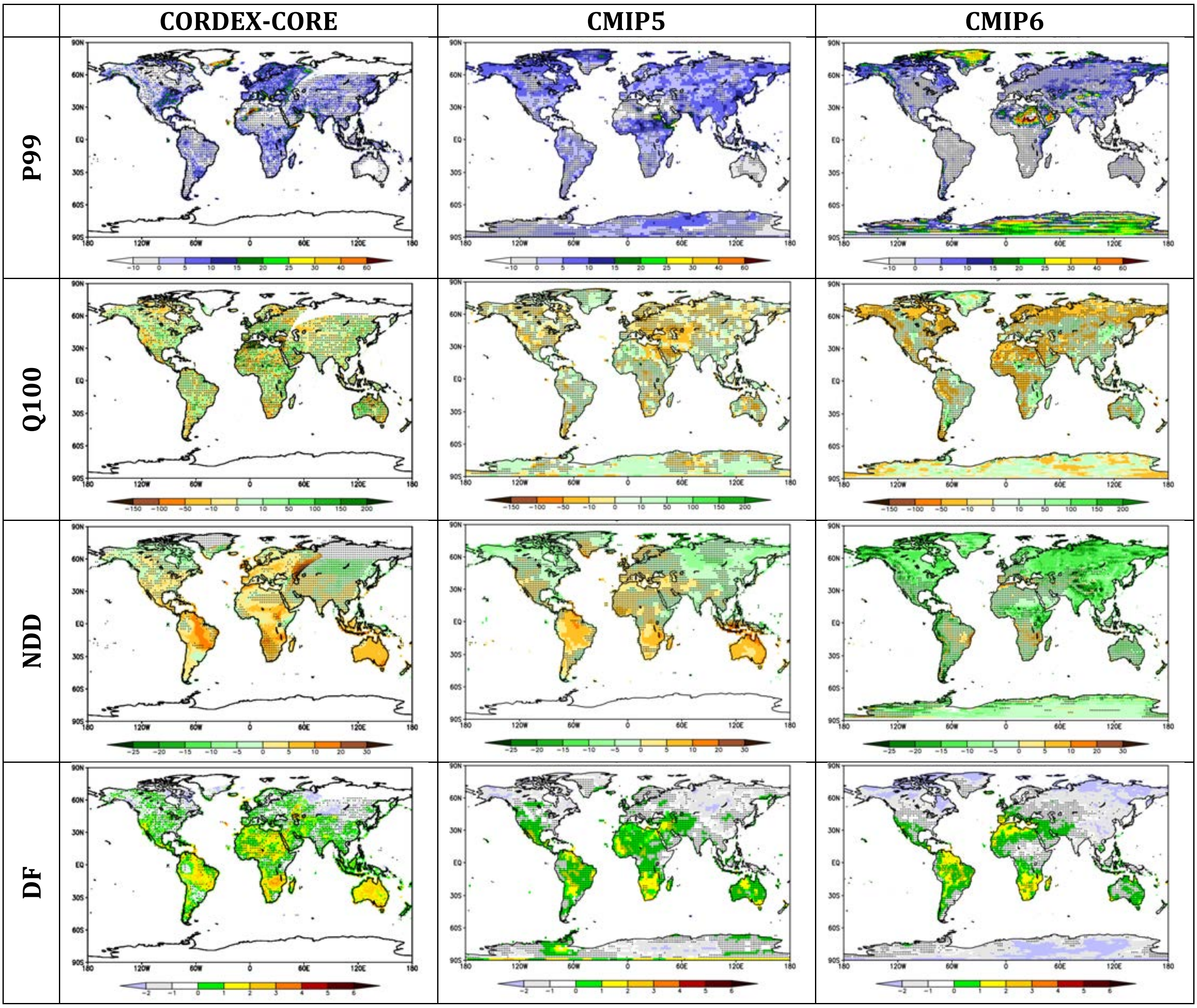

Fig. S6: Far future change for RCP2.6 (SSP126 for CMIP6) for Dry and Wet indicators. Little black dots indicate areas where the change signal is not significant.