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0.5 Degree: A Turning point

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Although the Caribbean region is considered amongst the most vulnerable to the impacts of climate and climate change, there are very few regional studies or studies matching the regions small scale and size that evaluate or quantify the impacts of these future changes. The absence becomes even more stark when the long-term temperature goals (LTTGs) of 1.5°C, 2.0°C and 2.5°C above pre-industrial warming levels are considered. By selecting, validating and downscaling a subset of the Hadley Centre's 17-member Perturbed Physics Ensemble for the Quantifying Uncertainty in Model Predictions (QUMP) project, future changes for both the LTTGs as well as mid and end of century are evaluated, for the entire Caribbean and its six (6) sub-regional zones. Showing distinct and significant sub-regional variations, on average the Caribbean was found to be 2.1°C (>4°C) warmer and 40% (70%) drier by mid-century (end of century). Analysis of the LTTGS shows that the region surpasses lowest target, 1.5 °C, before the end of the 2020's and experiences progressive warming that spread equatorward as successive thresholds are attained 2.0°C (2030's) and 2.5°C (2050´s). The far western, the southern and the eastern Caribbean are found to be up to 50% drier at 1.5°C, with intensifications noted for changes at 2.0°C with a reversal of a wet tendency in the north and central Caribbean. The sub-regional variations that exist shows that although the Caribbean lags the globe in its attainment of the LTTGs some of its six subregions are more comparable to the global than the Caribbean mean with the transition from 1.5°C to 2.0°C seeming to represent a turning point for the Caribbean.