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Changes in sector-specific climate indices: an extension to HadEX3

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Extreme events have widespread impacts across human health, our infrastructure, and the natural environment. So far there has not been a global product which presents climate indices relevant for different sectors of our society, including health, agriculture, and water resources. Here we present an extension to HadEX3, an existing dataset of extremes indices based on in situ observations, by including indices recommended by the World Meteorological Organisation (WMO) which were developed with sector specific applications in mind. We have used the approach and methodology of HadEX3, and where possible the same underlying daily temperature and rainfall observations, to produce quasi-global land fields over 1901-2018. We will demonstrate the key features of this extension, with temperature indices showing changes consistent with global scale warming, as indicated by heat wave characteristics showing increases in the number, duration, and intensity of these extreme events in most places.