

---

# Supplementary materials for Meteorological attribution on rubber tree powdery mildew and its future projection on spatiotemporal pattern

Jiayan Kong <sup>1</sup>, Lan Wu <sup>1</sup>, Jiaxin Cao <sup>1</sup>, Wei Cui <sup>2</sup>, Tangzhe Nie <sup>3,4</sup>, Yinghe An <sup>1</sup> and Zhongyi Sun <sup>1,5,6\*</sup>

<sup>1</sup> Ecology and Environment College, Hainan University, Haikou 570208, China; 21220951320139@hainanu.edu.cn; wulan@hainanu.edu.cn; 20071300210023@hainanu.edu.cn; 19840776157@163.com; anyinghe@hainanu.edu.cn;

<sup>2</sup> Development Research Center, National Forestry and Grassland Administration, Beijing 100714, China; cuiwei1231@hotmail.com

<sup>3</sup> Key Laboratory of Effective Utilization of Agricultural Water Resources, Ministry of Agriculture and Rural Affairs, Northeast Agricultural University, Harbin 150030, China; 2019036@hlju.edu.cn;

<sup>4</sup> School of Water Conservancy and Electric Power, Heilongjiang University, Harbin, 150080, China;

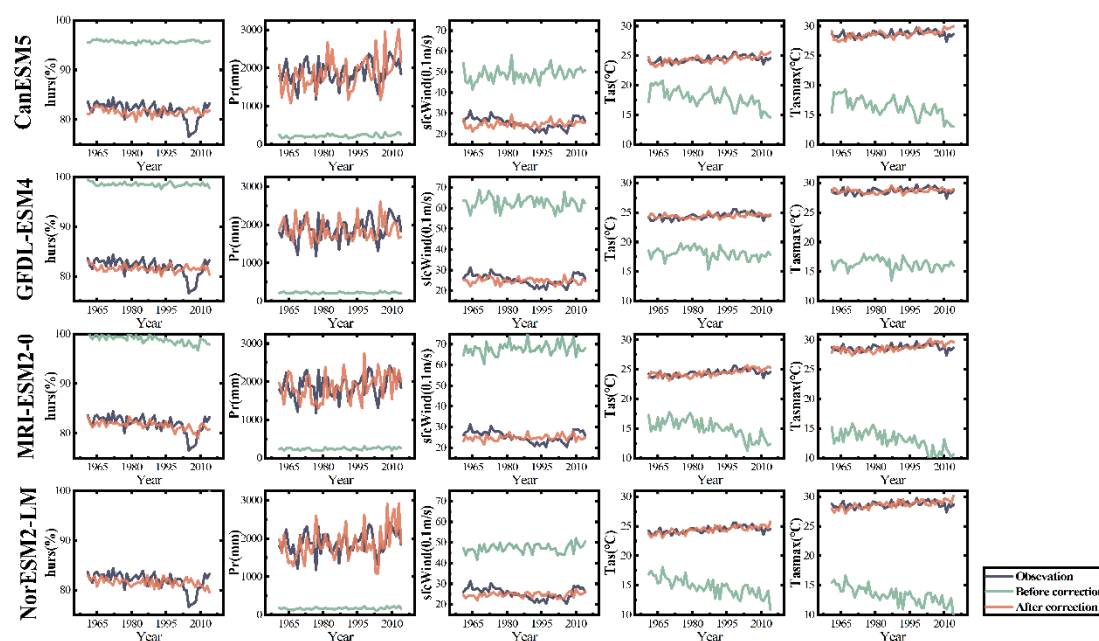
<sup>5</sup> Danzhou Investigation & Experiment Station of Tropical Crops, Ministry of Agriculture, Rubber Research Institute, Chinese Academy of Tropical Agricultural Sciences, Danzhou 571737, China;

<sup>6</sup> Sanya Tropical ecosystem Carbon Source and Sink Field Scientific Observation and Research Station, Sanya 572000, China

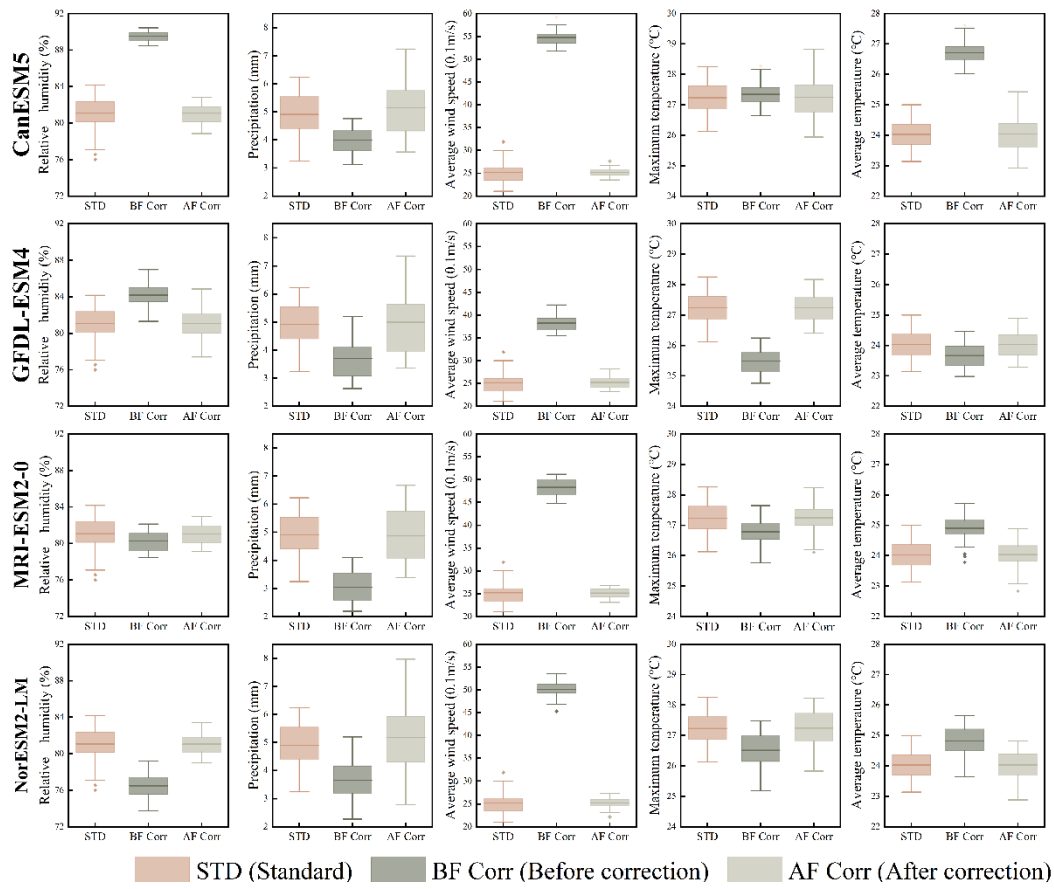
\* Correspondence: gis.rs@hainanu.edu.cn

**Table S1** Disease index of rubber tree powdery mildew in Hainan from 1962 to 2009

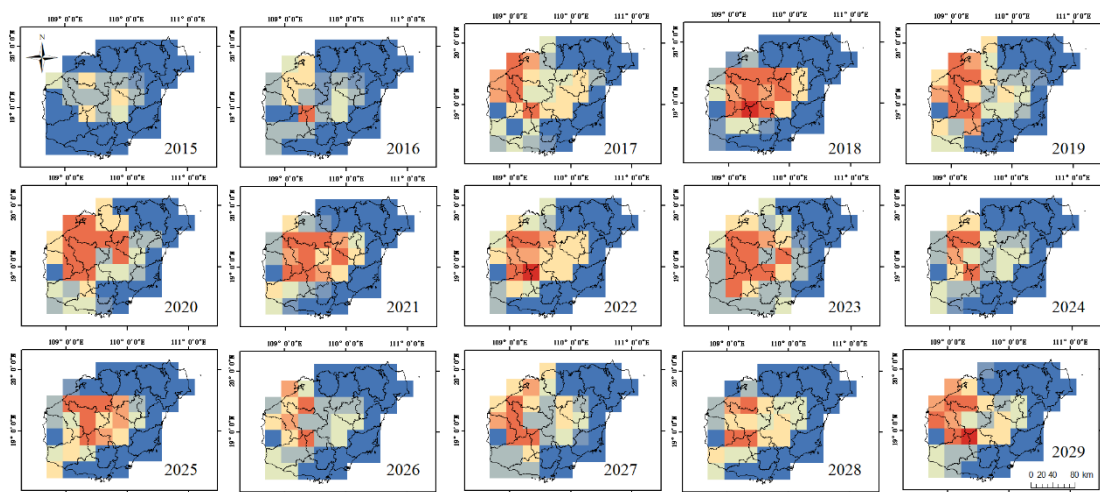
Year	DI	Year	DI	Year	DI	Year	DI
1962	21.2	1974	27.3	1986	46.8	1998	52.8
1963	16.1	1975	25.1	1987	52.7	1999	24.1
1964	29.7	1976	12.2	1988	54.0	2000	47.8
1965	22.6	1977	38.2	1989	47.6	2001	53.1
1966	33.6	1978	60.2	1990	49.9	2002	34.4
1967	19.1	1979	21.6	1991	45.1	2003	24.7
1968	17.8	1980	46.1	1992	44.1	2004	69.5
1969	40.8	1981	18.8	1993	46.0	2005	63.5
1970	24.7	1982	25.5	1994	44.9	2006	54.6
1971	7.9	1983	36.8	1995	55.0	2007	39.2
1972	29.2	1984	48.3	1996	44.0	2008	42.8
1973	5.4	1985	41.3	1997	32.5	2009	24.1



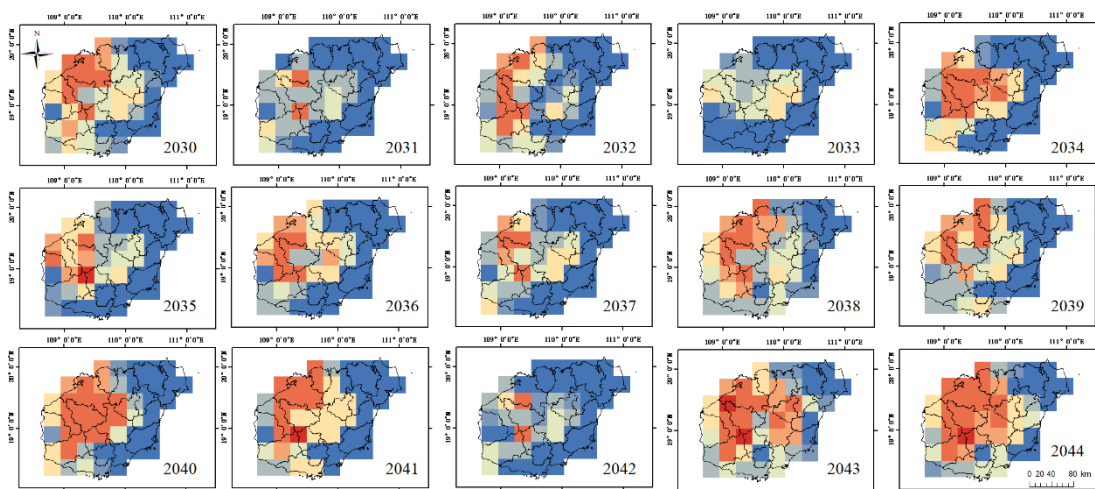
**Figure S1** Comparison of five meteorological factors before and after correction of four CMIP6 models based on EQM



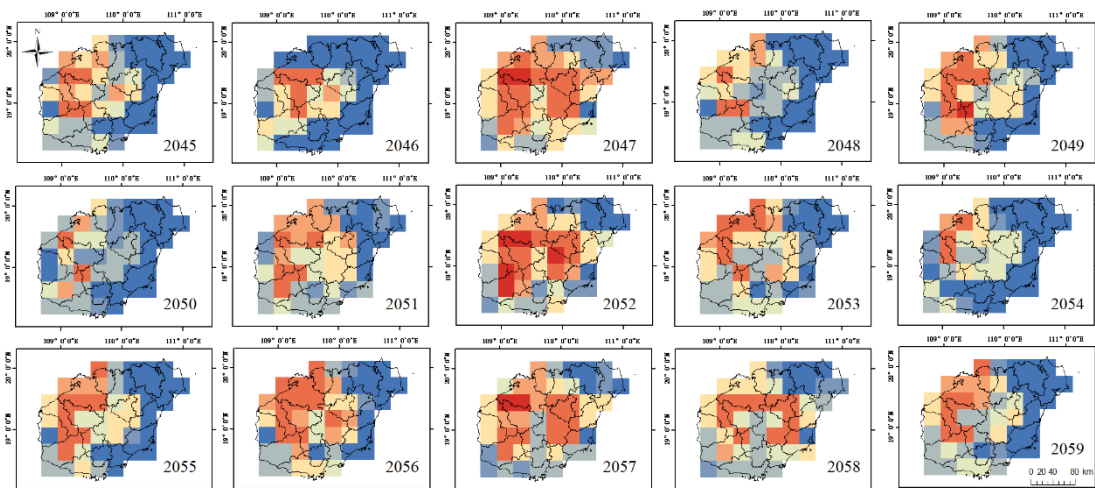
**Figure S2** Comparison of five meteorological factors before and after correction of four CMIP6 models based on QM



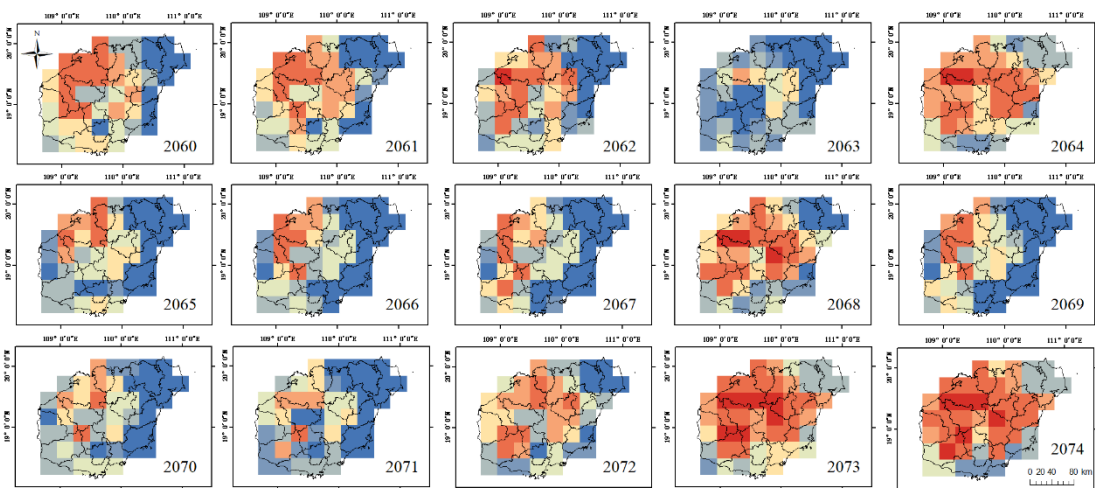
**Figure S3** Distribution of RTPM-DI in Hainan Island from 2015 to 2029 under the SSP245 scenario



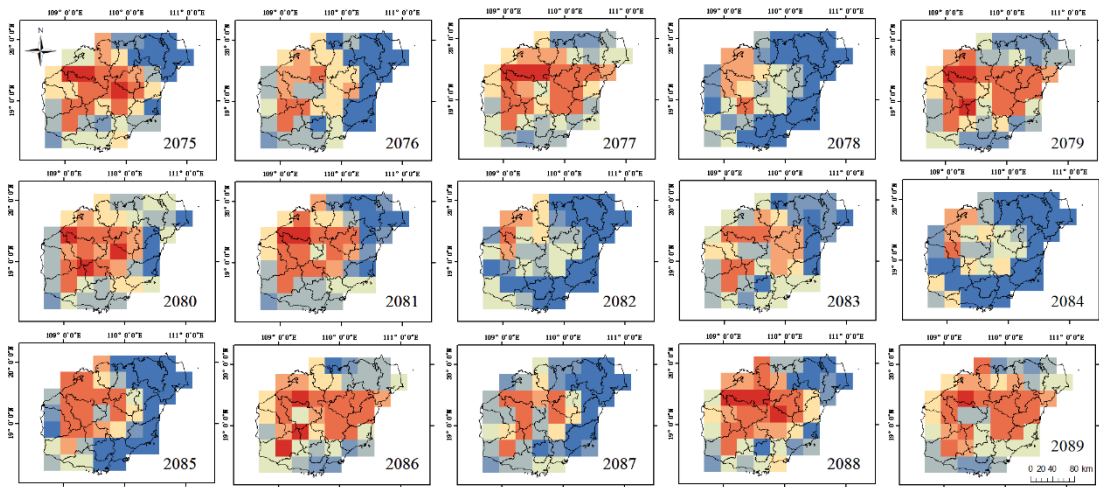
**Figure S4** Distribution of RTPM-DI in Hainan Island from 2030 to 2044 under the  
SSP245 scenario



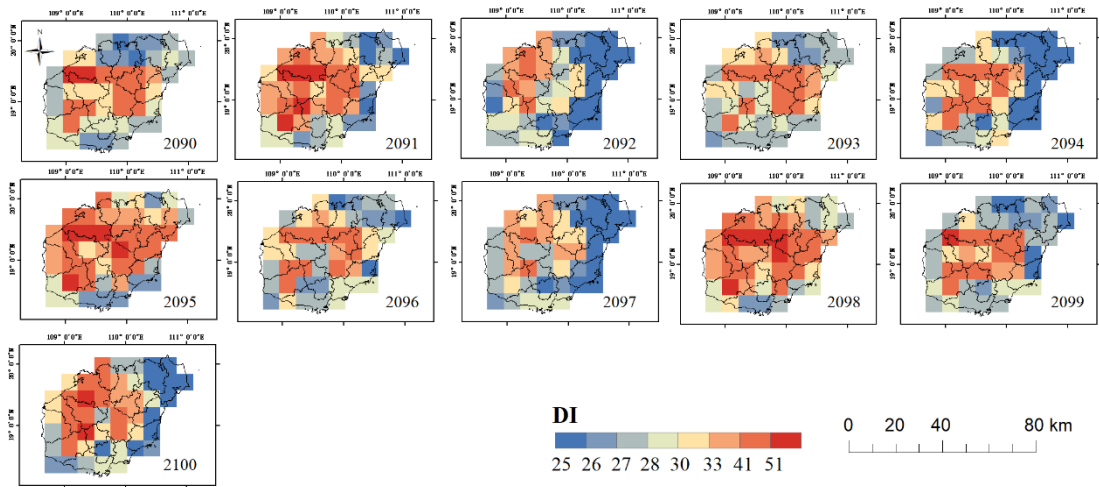
**Figure S5** Distribution of RTPM-DI in Hainan Island from 2045 to 2059 under the  
SSP245 scenario



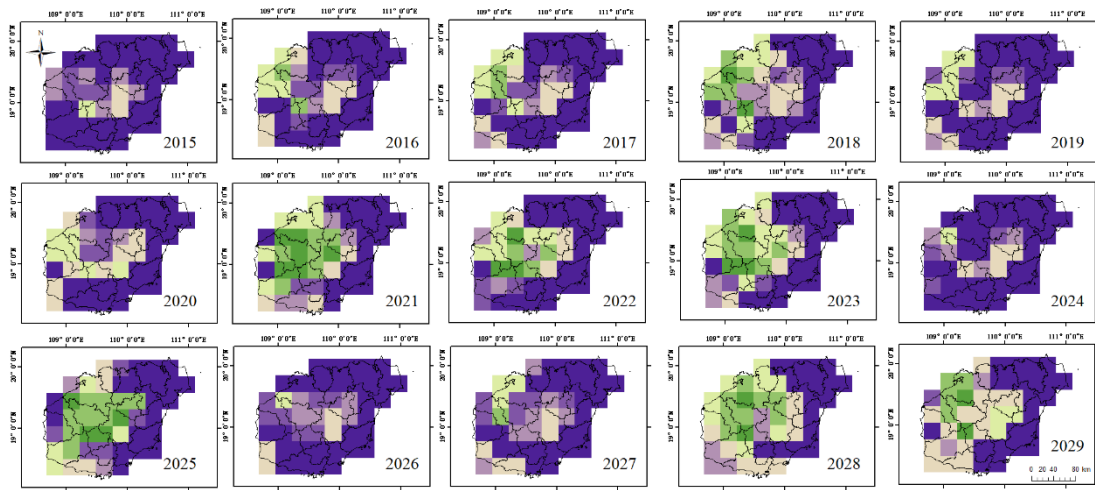
**Figure S6** Distribution of RTPM-DI in Hainan Island from 2060 to 2074 under the SSP245 scenario



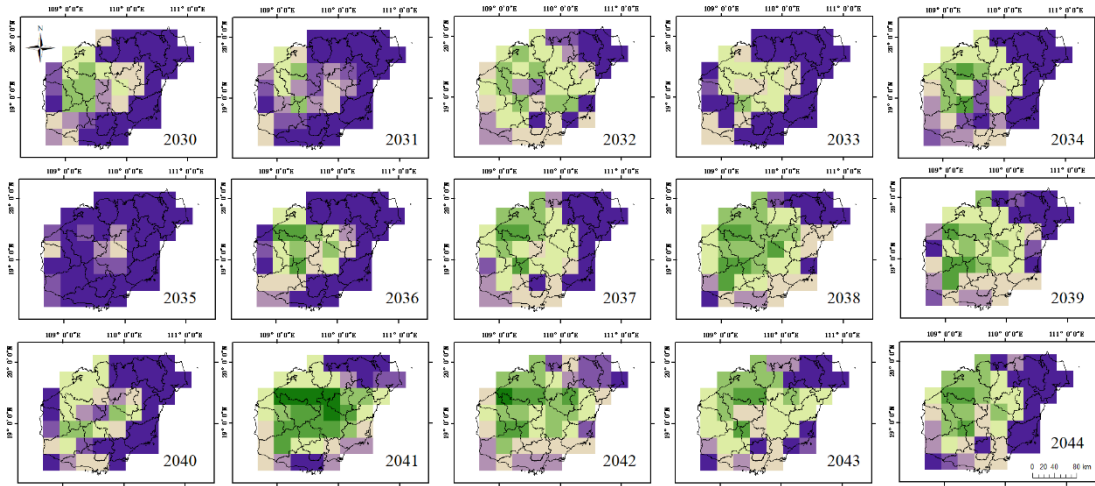
**Figure S7** Distribution of RTPM-DI in Hainan Island from 2075 to 2089 under the SSP245 scenario



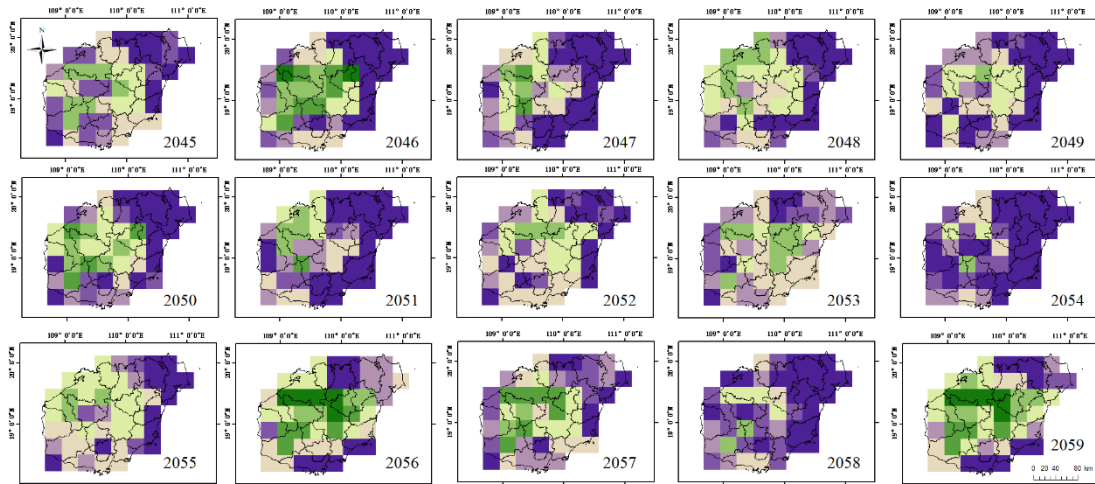
**Figure S8** Distribution of RTPM-DI in Hainan Island from 2090 to 2100 under the SSP245 scenario



**Figure S9** Distribution of RTPM-DI in Hainan Island from 2015 to 2029 under the SSP585 scenario

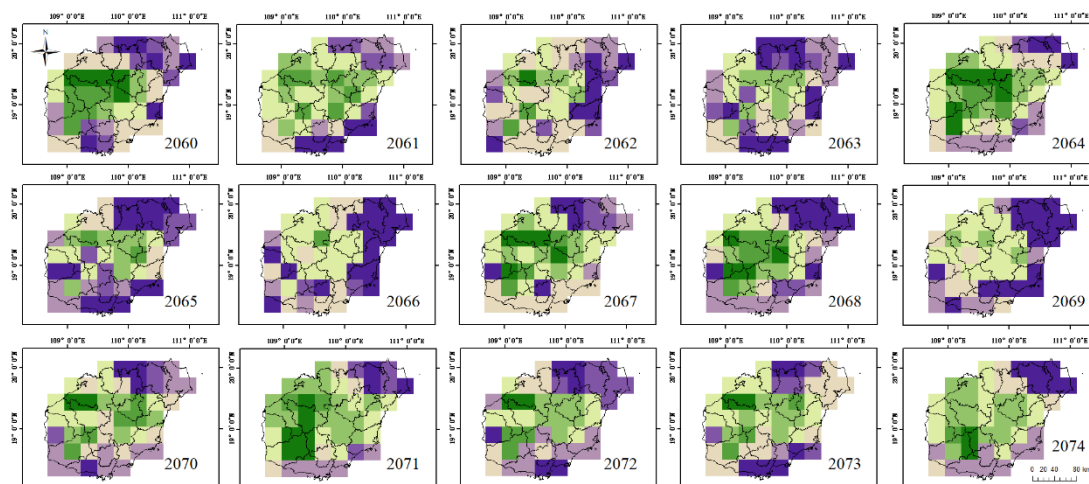


**Figure S10** Distribution of RTPM-DI in Hainan Island from 2030 to 2044 under the SSP585 scenario

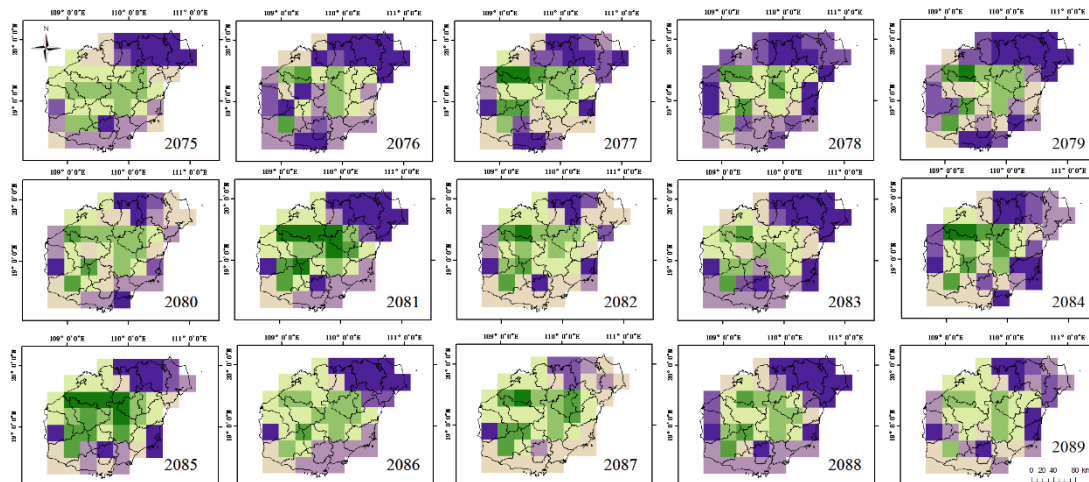




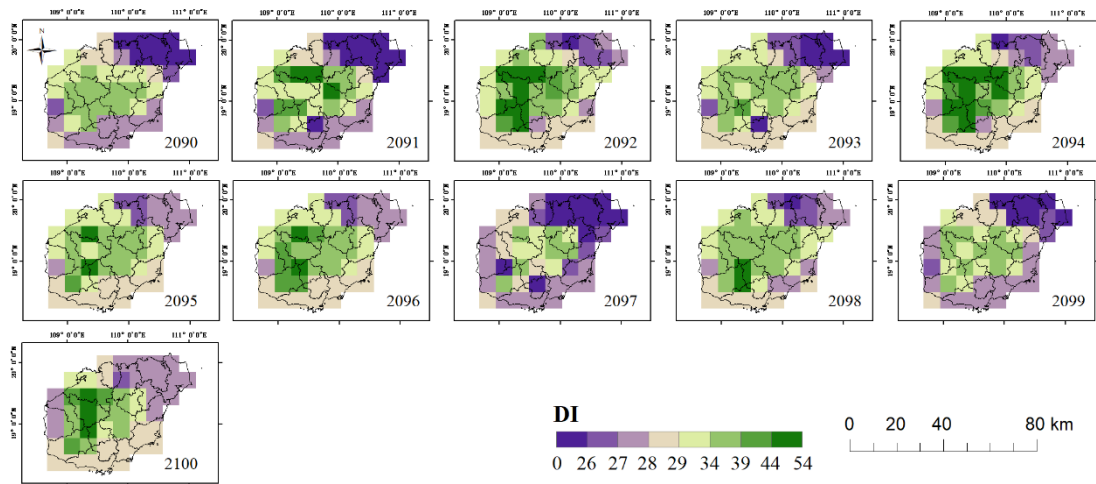
**Figure S11** Distribution of RTPM-DI in Hainan Island from 2045 to 2059 under the  
SSP585 scenario



**Figure S12** Distribution of RTPM-DI in Hainan Island from 2060 to 2074 under the  
SSP585 scenario



**Figure S13** Distribution of RTPM-DI in Hainan Island from 2075 to 2089 under the  
SSP585 scenario



**Figure S14** Distribution of RTPM-DI in Hainan Island from 2090 to 2100 under the SSP585 scenario