



Supplement of

Warming of 0.5° C may cause double the economic loss and increase the population affected by floods in China

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Figure S1. Affected population rate (a, c, e) and direct economic losses rate (b, d, f) of severe (a-b), moderate (c-d), and mild (e-f) floods (units: %)



Figure S2. Spatial patterns of population in China for 1.5°C (**a-b**) and 2°C (**c-d**) of global warming under RCP4.5 (**a**, **c**) and RCP8.5 (**b**, **d**) scenarios



Figure S3. Spatial patterns of GDP in China for 1.5°C (**a-b**) and 2°C (**c-d**) of global warming under RCP4.5 (**a**, **c**) and RCP8.5 (**b**, **d**) scenarios



Figure S4. Spatial patterns of the probability of severe (**a-b**), moderate (**c-d**), and mild (**e-f**) floods for 1.5° C (**a**, **c**, **e**) and 2° C (**b**, **d**, **f**) of global warming under the RCP4.5 scenario



Figure S5. Spatial patterns in the variability of the probability of the severe (**a-b**), moderate (**c-d**), and mild (**e-f**) floods between 1.5°C and 2°C of global warming under the RCP4.5 (**a**, **c**, **e**) and RCP8.5 (**b**, **d**, **f**) scenarios



Figure S6. Spatial patterns of the population affected by the severe (**a-b**), moderate (**c-d**), and mild (**e-f**) floods for 1.5°C (**a**, **c**, **e**) and 2°C (**b**, **d**, **f**) of global warming under the RCP4.5 scenario



Figure S7. Spatial patterns in the variability of the population affected by the severe (**a-b**), moderate (**c-d**), and mild (**e-f**) floods between 1.5°C and 2°Cof global warming under the RCP4.5 (**a**, **c**, **e**) and RCP8.5 (**b**, **d**, **f**) scenarios



Figure S8. Spatial patterns of the economic risks posed by the severe (**a-b**), moderate (**c-d**), and mild (**e-f**) floods for 1.5°C (**a**, **c**, **e**) and 2°C (**b**, **d**, **f**) of global warming under the RCP4.5 scenario



Figure S9. Spatial patterns in the variability of the economic risks posed by the severe (**a-b**), moderate (**c-d**), and mild (**e-f**) floods between 1.5°C and 2°Cof global warming under the RCP4.5 (**a**, **c**, **e**) and RCP8.5 (**b**, **d**, **f**) scenarios