Supplement of

Projected increases in magnitude and socioeconomic exposure of global droughts in 1.5 and 2 °C warmer climates

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Table S1 Summary statistic table for changes in major variables

| Variable            | Explanation                                                                 | 1.5°C | 2-1.5(°C) (1) |
|---------------------|-----------------------------------------------------------------------------|-------|---------------|
| SPEI₃(Mean)         | Percentage of continental areas for decreasing mean SPEI₃                   | 85%   | 58%           |
| SPEI₃(SD)           | Percentage of continental areas for increasing standard deviation of SPEI₃ | 100%  | 95%           |
| Drought duration    | Percentage of continental areas for increasing mean drought duration       | 78%   | 65%           |
| Drought severity    | Percentage of continental areas for increasing mean drought severity        | 99%   | 84%           |
| 50-year JRP         | Percentage of continental areas for increasing occurrence of 50-year drought events | 88% | 71% | |
| GDP exposure        | The number of countries exhibit a 100% fraction in GDP exposed to increasing drought risks | 73    | 17            |
| Population exposure | The number of countries exhibit a 100% fraction in population exposed to increasing drought risks | 75    | 17            |

Notes:
(1) 2-1.5(°C) means differences in effects between the 1.5°C and 2.0°C warming levels.
Table S2 Several countries suffering decreasing population and GDP exposure

| Country     | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Canada      | 68.35% | 68.82% | 71.56% | 55.58% | 63.36% | 66.92% | -12.77%| -5.46% | -4.63% |
| United States | 86.17% | 78.93% | 86.89% | 85.44% | 80.02% | 79.84% | -0.72% | 1.08%  | -7.05% |
| Colombia    | 85.71% | 84.62% | 79.12% | 75.82% | 93.41% | 85.71% | -9.89% | 8.79%  | 6.59%  |
| Japan       | 62.16% | 56.76% | 62.16% | 59.46% | 62.16% | 62.16% | -2.70% | 5.41%  | 0.00%  |

Population (million)

| Country     | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
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GDP (billion USD, 2010 price PPP)

| Country     | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
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Population Exposure Fraction

| Country     | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Canada      | 68.35% | 68.82% | 71.56% | 55.58% | 63.36% | 66.92% | -12.77%| -5.46% | -4.63% |
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GDP Exposure Fraction

| Country     | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 | SSP126 | SSP245 | SSP585 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
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