Half a degree and rapid socioeconomic development matter for heatwave risk Supplementary Information

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Supplementary Figures

Supplementary Figure 1 — Probability of occurrence of extreme heatwave. Spatial distribution of the probability and return level of a heatwave with one-hundred years return period under 1.5° C (b-e) and 2.0° C (f-i) warming for multiple models.



Supplementary Figure 2 — Risk map with non normalized population density. The risk at each grid point is calculated as the product of the probability of occurrence of HW500Y for the values of population density and for normalized value of Human Development Index for the ECHAM6 model. The dimension in colour scale represents the value of population density scaled by normalized measures of hazard and vulnerability.



Supplementary Figure 3 — Heatwave Risk under the low vulnerability pathway. The risk at each grid point is calculated as the product of the probability of occurrence of HW500Y for the normalized values of population density and Human Development Index.



Supplementary Figure 4 — Heatwave Risk under the high vulnerability pathway. The risk at each grid point is calculated as the product of the probability of occurrence of HW500Y for the normalized values of population density and Human Development Index.



Supplementary Figure 5 — Differences in heatwave Risk for the CanAM4 model. The risk differences are calculated at each grid point by means of risk values. a,d Differences of heatwave risk between 2°C and 1.5°C under the low vulnerability (SSP1) and high vulnerability (SSP4) scenarios, respectively. b,e Differences of heatwave risk between SSP4 and SSP1 1.5°C and 2°C warming levels, respectively. c, Differences of heatwave risk between 2°C under the SSP1 scenario and 1.5°C under the SSP4 scenarios. c, Differences of heatwave risk between the most pessimistic (2°C level of warming under the SSP4 scenario) and most optimistic (1.5°C level of warming under the SSP1 scenario) expected scenarios.



Supplementary Figure 6 — Differences in heatwave Risk for the CAM4 model. The risk differences are calculated at each grid point by means of risk values. a,d Differences of heatwave risk between 2° C and 1.5° C under the low vulnerability (SSP1) and high vulnerability (SSP4) scenarios, respectively. b,e Differences of heatwave risk between SSP4 and SSP1 1.5° C and 2° C warming levels, respectively. c, Differences of heatwave risk between 2° C under the SSP1 scenario and 1.5° C under the SSP4 scenarios. c, Differences of heatwave risk between the most pessimistic (2° C level of warming under the SSP4 scenario) and most optimistic (1.5° C level of warming under the SSP1 scenario) expected scenarios.



Supplementary Figure 7 — Differences in heatwave Risk for the MIROC5 model. The risk differences are calculated at each grid point by means of risk values. a,d Differences of heatwave risk between 2°C and 1.5°C under the low vulnerability (SSP1) and high vulnerability (SSP4) scenarios, respectively. b,e Differences of heatwave risk between SSP4 and SSP1 1.5°C and 2°C warming levels, respectively. c, Differences of heatwave risk between 2°C under the SSP1 scenario and 1.5°C under the SSP4 scenarios. c, Differences of heatwave risk between the most pessimistic (2°C level of warming under the SSP4 scenario) and most optimistic (1.5°C level of warming under the SSP1 scenario) expected scenarios.



Supplementary Figure 8 — Population as function of IRI with HW100Y hazard. a, Bar plots show the ensemble model median of the fraction of global population at different heatwave hazards at 1.5° (gray bars) and 2° (red bars) warming. The bar plot are calculated for all the grid points of the global domain with population density greater than 0. **b**,**c** as a, but for very high and low human development countries with HDI>0.8 and HDI<0.55, respectively.



Supplementary Figure 9 — Population as function of IRI with no-normalized HDI values. a, Bar plots show the ensemble model median, with associated range represented by black lines, of the fraction of global population at different heatwave risk levels at $1.5^{\circ}C(\text{gray bars})$ and $2^{\circ}C(\text{red bars})$ warming, and under the SSP1 scenario. The bar plots are calculated for all the grid points of the global domain with population density greater than 0. **b**,**c** as a, but for countries with HDI>0.8 and HDI<0.55, corresponding to very high and low human development countries, respectively (see Fig. S4). **d**,**e**,**f** as a,b, and c, respectively, but for the SPP4 pathway.



Supplementary Figure 10 — Spatial Number of years in a decade block with no-heat waves a, Mean of the number of years that in a decade have zero heat waves. b, As a, but for Standard Deviation.



Supplementary Figure 11 — The statistical distribution of heatwaves. p-value and Generalized Extreme Value distribution type of the GEV model fitted to HWMId HAPPI data for the historical period.



Supplementary Figure 12 — Extreme heatwaves with TX5x index. Probability of occurrence and associated return levels of extreme heatwave (HW500Y) at different warming levels with the TX5x decadal maxima



Supplementary Figure 13 — Confidence levels of heatwave risk estimation. Spatial distribution of upper and lower 95^{th} confidence level of the GEV fits to the decadal HWMId maxima at a warming level of 1.5° C



Supplementary Figure 14 — Confidence levels of heatwave risk estimation. Spatial distribution of upper and lower 95^{th} confidence level of the GEV fits to the decadal HWMId maxima at a warming level of 2° C.



Supplementary Figure 15 — Maps of Population density and Human Development Index a, Population Density in persons/Km² interpolated on the MIROC5 model grid. b,c As a, but for Projected population in 2075 (decade 2070-2079) under the SSP1 and SSP4 socio economic pathways, respectively. d,e,f As a,b,c but for the Human Development Index in 2075.



Supplementary Figure 16 — Scatterplot and relationship between HDI and ND-GAIN. a, HDI (y-axis) versus ND-GAIN (x-axis). b, as a, but for normalized HDI values. Black continuous and dashed lines represent the linear relationship and the corresponding level of confidence at 95% obtained by means of a linear regression between the Normalized HDI values and ND-GAIN values. The black contineous and dashed lines in a are obtained by the linear lines in b applied to no normalized HDI values.



Supplementary Figure 17 — Normalization of population density and Human Development Index. a, normalization of population density (x-axis) in standard uniform units (y-axis). The black curves represents the Johnson's Cumulative Density Function (see methods) fitted to the global density population values (gray filled circles) over the present period (2010). The red open circle represents a value of future population $(10^{3.78} \text{ in x-axis})$ and the corresponding normalized value (0.57 in y-axis). b, as a, but for (1-HDI) values.

Supplementary Tables

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Belgium 0.896 0.898 0.808 Afghanistan 0.479 0.696 0.400 Finland 0.895 0.866 0.797 Malawi 0.476 0.695 0.420 Austria 0.893 0.902 0.831 Côte dIvoire 0.47 0.716 0.365 Slovenia 0.890 0.845 0.762 Djibouti 0.473 0.714 0.488 Italy 0.887 0.886 0.782 Gambia 0.442 0.671 0.368 Czech Republic 0.878 0.846 0.764 Ethiopia 0.422 0.733 0.436 Greece 0.866 0.865 0.766 Liberia 0.424 0.660 0.319 Cyprus 0.865 0.846 0.743 Guinea-Bissau 0.424 0.660 0.315 Malta 0.856 0.886 0.815 Siera Leone 0.420 0.661 0.316 Qatar 0.856 0.886 0.751 Burundi 0.414	France	0.897	0.891	0.806	Yemen	0.482	0.697	0.390
Finland 0.895 0.866 0.797 Malawi 0.476 0.695 0.420 Austria 0.893 0.902 0.831 $C\dot{o}te$ dIvoire 0.474 0.716 0.365 Slovenia 0.890 0.845 0.762 Djibouti 0.473 0.714 0.488 Italy 0.887 0.886 0.782 Gambia 0.473 0.714 0.488 Spain 0.884 0.875 0.774 Ethiopia 0.442 0.654 0.230 Greece 0.866 0.865 0.766 Liberia 0.427 0.680 0.277 Brunei Darussalam 0.865 0.821 0.743 Guinea-Bissau 0.424 0.660 0.319 Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.660 0.319 Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.660 0.315 Malta 0.856 0.881 0.803 Eritrea 0.420 0.660 0.310 Qatar 0.856 0.886 0.815 Sierra Leone 0.420 0.660 0.317 Poland 0.856 0.884 0.755 Guinea 0.414 0.692 0.269 Lithuania 0.847 0.839 0.729 Burkina Faso 0.402 0.661 0.310 Saudi Arabia 0.847 0.834 0.751 Burundi 0.402 0.661 0.317 Slovakia 0.847 0.839 0.727 Burkina Faso <td>Belgium</td> <td>0.896</td> <td>0.898</td> <td>0.808</td> <td>Afghanistan</td> <td>0.479</td> <td>0.696</td> <td>0.400</td>	Belgium	0.896	0.898	0.808	Afghanistan	0.479	0.696	0.400
Austria 0.893 0.902 0.831 Côte dIvoire 0.474 0.716 0.365 Slovenia 0.890 0.845 0.762 Djibouti 0.473 0.714 0.488 Italy 0.887 0.886 0.782 Gambia 0.452 0.713 0.412 Spain 0.884 0.875 0.774 Ethiopia 0.448 0.695 0.365 Czech Republic 0.878 0.841 0.760 Mali 0.442 0.654 0.230 Greece 0.866 0.865 0.766 Liberia 0.427 0.680 0.319 Cyprus 0.865 0.821 0.743 Guinea-Bissau 0.424 0.660 0.315 Malta 0.856 0.881 0.803 Eritrea 0.420 0.661 0.310 Qatar 0.856 0.881 0.804 South Sudan 0.414 0.692 0.269 Lithuania 0.848 0.826 0.751 Burundi 0.404 0.655 0.317 Chile 0.847 0.838 0.750 Guinea </td <td>Finland</td> <td>0.895</td> <td>0.866</td> <td>0.797</td> <td>Malawi</td> <td>0.476</td> <td>0.695</td> <td>0.420</td>	Finland	0.895	0.866	0.797	Malawi	0.476	0.695	0.420
Slovenia 0.890 0.845 0.762 Djibouti 0.473 0.714 0.488 Italy 0.887 0.886 0.752 Gambia 0.452 0.713 0.412 Spain 0.884 0.875 0.774 Ethiopia 0.448 0.695 0.368 Czech Republic 0.878 0.841 0.760 Mali 0.422 0.650 0.230 Greece 0.866 0.865 0.764 Democratic Republic of the Congo 0.422 0.660 0.319 Cyprus 0.865 0.841 0.743 Guinea-Bissau 0.420 0.660 0.319 Qyprus 0.856 0.881 0.803 Eritra Leone 0.420 0.660 0.310 Qatar 0.855 0.886 0.815 Sitra Leone 0.414 0.692 0.269 Lithania 0.847 0.839 0.755 Guinea 0.414 0.692 0.269 Lithania 0.847 0.839 0.729 Burkina Faso <t< td=""><td>Austria</td><td>0.893</td><td>0.902</td><td>0.831</td><td>Côte dIvoire</td><td>0.474</td><td>0.716</td><td>0.365</td></t<>	Austria	0.893	0.902	0.831	Côte dIvoire	0.474	0.716	0.365
Italy0.8870.8860.782Gambia0.4520.7130.412Spain0.8840.8750.774Ethiopia0.4480.6950.368Czech Republic0.8780.8410.760Mali0.4420.6540.230Greece0.8660.8650.766Liberia0.4270.6800.277Brunei Darussalam0.8650.8460.764Democratic Republic of the Congo0.4220.6000.319Cyprus0.8560.8810.803Eritrea0.4200.6600.315Malta0.8560.8860.815Sierra Leone0.4200.6610.310Qatar0.8560.8860.815Sierra Leone0.4440.6920.269Dithunaia0.8480.8260.751Burundi0.4440.6550.317Chile0.8470.8390.729Burkina Faso0.4020.6610.253Saudi Arabia0.8470.8390.727O.4140.6950.257Vortugal0.8430.8340.751Niger0.3530.6250.259Portugal0.8430.8300.735Central African Republic0.3520.6740.297United Arab Emirates0.8400.8390.727Virtuai0.3520.6740.297Hungary0.8360.8150.719Virtuai0.8270.722Virtuai0.3520.6740.297Hungary0.8300.8270.73	Slovenia	0.890	0.845	0.762	Djibouti	0.473	0.714	0.488
Spain 0.884 0.875 0.774 Ethiopia 0.448 0.695 0.368 Czech Republic 0.878 0.841 0.760 Mali 0.442 0.654 0.230 Greece 0.866 0.865 0.766 Liberia 0.427 0.680 0.277 Brunei Darussalam 0.865 0.846 0.764 Democratic Republic of the Congo 0.427 0.680 0.319 Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.660 0.319 Qatar 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Qatar 0.856 0.888 0.755 Guinea 0.414 0.692 0.269 Lithuania 0.855 0.838 0.755 Guinea 0.402 0.611 0.310 Chile 0.847 0.839 0.729 Burkina Faso 0.402 0.671 0.253 Saudi Arabia 0.847 0.839 0.727 Niger <t< td=""><td>Italy</td><td>0.887</td><td>0.886</td><td>0.782</td><td>Gambia</td><td>0.452</td><td>0.713</td><td>0.412</td></t<>	Italy	0.887	0.886	0.782	Gambia	0.452	0.713	0.412
Czech Republic 0.878 0.841 0.760 Mali 0.442 0.654 0.230 Greece 0.866 0.865 0.766 Liberia 0.427 0.680 0.277 Brunei Darussalam 0.865 0.866 0.764 Democratic Republic of the Congo 0.425 0.733 0.436 Estonia 0.865 0.821 0.743 Guinea-Bissau 0.424 0.660 0.319 Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.661 0.310 Qatar 0.856 0.885 0.804 South Sudan 0.418 0.673 0.370 Poland 0.855 0.838 0.755 Guinea 0.414 0.692 0.269 Lithuania 0.848 0.826 0.751 Burundi 0.402 0.671 0.253 Saudi Arabia 0.847 0.814 0.695 Chad 0.396 0.654 0.287 Slovakia 0.845 0.834 0.751 Niger	Spain	0.884	0.875	0.774	Ethiopia	0.448	0.695	0.368
Greece 0.866 0.865 0.766 Liberia 0.427 0.680 0.277 Brunei Darussalam 0.865 0.846 0.764 Democratic Republic of the Congo 0.425 0.733 0.436 Estonia 0.865 0.821 0.743 Guinea-Bissau 0.424 0.660 0.319 Cyprus 0.856 0.881 0.803 Ertrea 0.420 0.660 0.315 Malta 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Qatar 0.856 0.885 0.804 South Sudan 0.414 0.692 0.269 Lithuania 0.848 0.826 0.751 Burundi 0.404 0.655 0.317 Chile 0.847 0.839 0.729 Burukina Faso 0.402 0.671 0.253 Saudi Arabia 0.847 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.863 0.735 Central Afric	Czech Republic	0.878	0.841	0.760	Mali	0.442	0.654	0.230
Brunei Darussalam 0.865 0.846 0.764 Democratic Republic of the Congo 0.425 0.733 0.436 Estonia 0.865 0.821 0.743 Guinea-Bissau 0.424 0.600 0.319 Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.600 0.315 Malta 0.856 0.885 0.804 South Sudan 0.418 0.673 0.370 Poland 0.855 0.838 0.755 Guinea 0.414 0.692 0.269 Lithnania 0.847 0.839 0.751 Burundi 0.404 0.655 0.317 Chile 0.847 0.839 0.729 Burkina Faso 0.402 0.671 0.253 Slovakia 0.847 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.863 0.735 Central African Republic 0.353 0.625 0.259 Portugal 0.836 0.815 0.779 Lat	Greece	0.866	0.865	0.766	Liberia	0.427	0.680	0.277
Estonia 0.865 0.821 0.743 Guinea-Bissau 0.424 0.660 0.319 Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.660 0.315 Malta 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Qatar 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Qatar 0.856 0.886 0.815 Sierra Leone 0.414 0.692 0.269 Lithuania 0.848 0.826 0.751 Burundi 0.404 0.655 0.317 Chile 0.847 0.839 0.729 Burkina Faso 0.402 0.671 0.253 Saudi Arabia 0.847 0.834 0.751 Niger 0.333 0.625 0.259 Portugal 0.843 0.863 0.735 Central African Republic 0.352 0.674 0.297 United Arab Emirates 0.840 0.839 0.727 0.352 0.674 0.297 Hungary 0.836 0.815	Brunei Darussalam	0.865	0.846	0.764	Democratic Republic of the Congo	0.425	0.733	0.436
Cyprus 0.856 0.881 0.803 Eritrea 0.420 0.660 0.315 Malta 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Qatar 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Poland 0.856 0.886 0.815 South Sudan 0.418 0.673 0.370 Poland 0.855 0.838 0.755 Guinea 0.414 0.692 0.269 Lithuania 0.848 0.846 0.751 Burundi 0.400 0.655 0.317 Chile 0.847 0.814 0.695 Chad 0.396 0.402 0.671 0.253 Saudi Arabia 0.847 0.814 0.695 Chad 0.396 0.654 0.287 Slovakia 0.843 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.839 0.727 United Arab Emirates 0.840 0.839 0.727 Latvia 0.830 0.822 0.745 Interval Standard Stan	Estonia	0.865	0.821	0.743	Guinea-Bissau	0.424	0.660	0.319
Mata 0.856 0.886 0.815 Sierra Leone 0.420 0.661 0.310 Qatar 0.856 0.885 0.804 South Sudan 0.418 0.673 0.370 Poland 0.855 0.838 0.755 Guinea 0.414 0.692 0.269 Lithuania 0.848 0.826 0.751 Burundi 0.402 0.671 0.253 Saudi Arabia 0.847 0.814 0.695 Chad 0396 0.654 0.287 Slovakia 0.845 0.834 0.751 Niger 0.353 0.625 0.299 United Arab Emirates 0.840 0.839 0.727 Variagary 0.352 0.674 0.297 United Arab Emirates 0.840 0.751 Niger 0.352 0.674 0.297 Latvia 0.830 0.822 0.745 Variagary 0.352 0.674 0.297 Latvia 0.830 0.822 0.745 Variagary 0.830 0.827 <td>Cyprus</td> <td>0.856</td> <td>0.881</td> <td>0.803</td> <td>Eritrea</td> <td>0.420</td> <td>0.660</td> <td>0.315</td>	Cyprus	0.856	0.881	0.803	Eritrea	0.420	0.660	0.315
Qatar0.8560.8850.804South Sudan0.4180.6730.370Poland0.8550.8380.755Guinea0.4140.6920.269Lithuania0.8480.8260.751Burundi0.4040.6550.317Chile0.8470.8390.729Burkina Faso0.4020.6710.253Saudi Arabia0.8470.8140.695Chad03960.6540.287Slovakia0.8450.8340.751Niger0.3530.6250.259Portugal0.8430.8630.735Central African Republic0.3520.6740.297United Arab Emirates0.8400.8390.727 </td <td>Malta</td> <td>0.856</td> <td>0.886</td> <td>0.815</td> <td>Sierra Leone</td> <td>0.420</td> <td>0.661</td> <td>0.310</td>	Malta	0.856	0.886	0.815	Sierra Leone	0.420	0.661	0.310
Poland0.8550.8380.755Guinea0.4140.6920.269Lithuania0.8480.8260.751Burundi0.4040.6550.317Chile0.8470.8390.729Burkina Faso0.4020.6710.253Saudi Arabia0.8470.8440.695Chad03960.6540.287Slovakia0.8450.8340.751Niger0.3530.6250.259Portugal0.8430.8630.735Central African Republic0.3520.6740.297United Arab Emirates0.8400.8390.72711111Latvia0.8300.8220.745111111Latvia0.8370.8250.68311111111Bahrain0.8240.8270.72211111111Montenegro0.8070.8150.750111 <td< td=""><td>Qatar</td><td>0.856</td><td>0.885</td><td>0.804</td><td>South Sudan</td><td>0.418</td><td>0.673</td><td>0.370</td></td<>	Qatar	0.856	0.885	0.804	South Sudan	0.418	0.673	0.370
Lithuania 0.848 0.826 0.751 Burundi 0.404 0.655 0.317 Chile 0.847 0.839 0.729 Burkina Faso 0.402 0.671 0.253 Saudi Arabia 0.847 0.847 0.634 0.695 Chad 0396 0.654 0.287 Slovakia 0.845 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.863 0.735 Central African Republic 0.352 0.674 0.297 Hungary 0.836 0.815 0.719 0.674 0.297 Latvia 0.830 0.822 0.745	Poland	0.855	0.838	0.755	Guinea	0.414	0.692	0.269
Chile 0.847 0.839 0.729 Burkina Faso 0.402 0.671 0.253 Saudi Arabia 0.847 0.814 0.695 Chad 0396 0.654 0.287 Slovakia 0.845 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.635 0.751 Niger 0.352 0.674 0.297 United Arab Emirates 0.840 0.839 0.727 0.352 0.674 0.297 Latvia 0.830 0.822 0.745	Lithuania	0.848	0.826	0.751	Burundi	0.404	0.655	0.317
Saudi Arabia 0.847 0.814 0.695 Chad 0396 0.654 0.287 Slovakia 0.845 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.836 0.735 Central African Republic 0.352 0.674 0.297 United Arab Emirates 0.840 0.839 0.727 1.4 0.836 0.815 0.719 1.4 1.4	Chile	0.847	0.839	0.729	Burkina Faso	0.402	0.671	0.253
Slovakia 0.845 0.834 0.751 Niger 0.353 0.625 0.259 Portugal 0.843 0.863 0.735 Central African Republic 0.352 0.674 0.297 United Arab Emirates 0.840 0.839 0.727 0.352 0.674 0.297 Hungary 0.836 0.815 0.719	Saudi Arabia	0.847	0.814	0.695	Chad	0396	0.654	0.287
Portugal 0.843 0.863 0.735 Central African Republic 0.352 0.674 0.297 United Arab Emirates 0.840 0.839 0.727 0.207 0.207 0.207 Hungary 0.836 0.815 0.719 0.207 0.207 0.207 Latvia 0.830 0.822 0.745 0.207 0.207 0.207 Argentina 0.827 0.825 0.683 0.207 0.207 0.207 Groatia 0.827 0.825 0.683 0.201 0.201 0.201 Bahrain 0.824 0.827 0.722 0.202 0.201 0.201 Montenegro 0.807 0.815 0.750 0.202 0.202 0.202 Russian Federation 0.804 0.778 0.698 0.202 0.202 0.202	Slovakia	0.845	0.834	0.751	Niger	0.353	0.625	0.259
United Arab Emirates 0.840 0.839 0.727 Hungary 0.836 0.815 0.719 Latvia 0.800 0.822 0.745 Argentina 0.827 0.825 0.683 Croatia 0.827 0.820 0.738 Bahrain 0.824 0.827 0.722 Montenegro 0.807 0.815 0.750 Russian Federation 0.804 0.778 0.698	Portugal	0.843	0.863	0.735	Central African Republic	0.352	0.674	0.297
Hungary0.8360.8150.719Latvia0.8300.8220.745Argentina0.8270.8250.683Croatia0.8270.8200.738Bahrain0.8240.8270.722Montenegro0.8070.8150.750Russian Federation0.8040.7780.698	United Arab Emirates	0.840	0.839	0.727	*			
Latvia 0.830 0.822 0.745 Argentina 0.827 0.825 0.683 Croatia 0.827 0.820 0.738 Bahrain 0.824 0.827 0.722 Montenegro 0.807 0.815 0.750 Russian Federation 0.804 0.778 0.698	Hungary	0.836	0.815	0.719				
Argentina0.8270.8250.683Croatia0.8270.8200.738Bahrain0.8240.8270.722Montenegro0.8070.8150.750Russian Federation0.8040.7780.698	Latvia	0.830	0.822	0.745				
Croatia 0.827 0.820 0.738 Bahrain 0.824 0.827 0.722 Montenegro 0.807 0.815 0.750 Russian Federation 0.804 0.778 0.698	Argentina	0.827	0.825	0.683				
Bahrain 0.824 0.827 0.722 Montenegro 0.807 0.815 0.750 Russian Federation 0.804 0.778 0.698	Croatia	0.827	0.820	0.738				
Montenegro 0.807 0.815 0.750 Russian Federation 0.804 0.778 0.698	Bahrain	0.824	0.827	0.722				
Russian Federation 0.804 0.778 0.698	Montenegro	0.807	0.815	0.750				
	Russian Federation	0.804	0.778	0.698				
Romania 0.802 0.813 0.714	Romania	0.802	0.813	0.714				
Kuwait 0.800 0.824 0.728	Kuwait	0.800	0.824	0.728				

Supplementary Table 1 — List of very high and low human developed countries according to the 2015 HDI values and projected value for the year 2075 under SSP1 and SSP4 socio-economic pathways. (2015 data are taken from the Human Development Report 2016).