

**Table S1.** Number of deaths and its EAPC from 1990 to 2019 due to unsafe water, sanitation and hygiene in different regions.

| Region                       | Deaths                        |                               |                        |
|------------------------------|-------------------------------|-------------------------------|------------------------|
|                              | 1990 (thousand), No. (95% UI) | 2019 (thousand), No. (95% UI) | EAPC (%), No. (95% UI) |
| Global                       | 3222.41 (2543.09-3961.34)     | 1656.89 (1198.86-2312.69)     | -0.49 (-0.59, -0.32)   |
| Andean Latin America         | 14.63 (11.25-18.03)           | 4.20 (2.54-6.21)              | -0.71 (-0.80, -0.61)   |
| Australasia                  | 0.08 (0.04-0.12)              | 0.17 (0.09-0.25)              | 1.11 (0.74, 1.81)      |
| Caribbean                    | 16.76 (13.43-20.29)           | 7.38 (4.90-10.39)             | -0.56 (-0.68, -0.40)   |
| Central Asia                 | 17.29 (14.03-20.82)           | 2.30 (1.48-3.29)              | -0.87 (-0.90, -0.83)   |
| Central Europe               | 1.29 (0.88-1.72)              | 0.66 (0.40-0.95)              | -0.49 (-0.59, -0.37)   |
| Central Latin America        | 51.66 (44.36-58.89)           | 11.77 (8.44-15.11)            | -0.77 (-0.82, -0.71)   |
| Central Sub-Saharan Africa   | 102.31 (69.41-138.16)         | 70.37 (46.42-100.56)          | -0.31 (-0.50, -0.08)   |
| East Asia                    | 143.82 (108.30-183.48)        | 11.93 (6.93-17.58)            | -0.92 (-0.94, -0.89)   |
| Eastern Europe               | 2.66 (1.96-3.41)              | 1.38 (0.72-2.12)              | -0.48 (-0.65, -0.36)   |
| Eastern Sub-Saharan Africa   | 383.02 (293.73-473.31)        | 220.39 (161.83-286.50)        | -0.42 (-0.57, -0.23)   |
| High-income Asia Pacific     | 2.11 (1.16-3.13)              | 3.52 (1.76-5.43)              | 0.67 (0.37, 0.91)      |
| High-income North America    | 1.03 (0.51-1.60)              | 2.25 (1.50-3.05)              | 1.19 (0.66, 2.40)      |
| North Africa and Middle East | 126.67 (96.26-164.05)         | 33.85 (22.07-46.43)           | -0.73 (-0.79, -0.66)   |

|                             |                           |                         |                      |
|-----------------------------|---------------------------|-------------------------|----------------------|
| Oceania                     | 3.73 (2.75-4.82)          | 4.43 (3.06-6.18)        | 0.19 (-0.11, 0.55)   |
| South Asia                  | 1448.25 (1059.17-1872.43) | 749.93 (456.97-1185.11) | -0.48 (-0.63, -0.25) |
| Southeast Asia              | 255.94 (187.36-336.28)    | 90.93 (59.52-133.04)    | -0.64 (-0.75, -0.51) |
| Southern Latin America      | 2.30 (1.71-2.88)          | 1.64 (0.91-2.37)        | -0.29 (-0.46, -0.15) |
| Southern Sub-Saharan Africa | 36.23 (28.03-46.46)       | 26.82 (18.66-38.04)     | -0.26 (-0.39, -0.11) |
| Tropical Latin America      | 46.97 (38.48-57.57)       | 11.05 (7.50-14.63)      | -0.76 (-0.83, -0.70) |
| Western Europe              | 1.73 (0.91-2.61)          | 2.49 (1.36-3.67)        | 0.43 (0.28, 0.66)    |
| Western Sub-Saharan Africa  | 563.95 (406.01-721.73)    | 399.42 (297.91-512.87)  | -0.29 (-0.49, -0.01) |

---

EAPC, estimated annual percentage change; UI, uncertainty interval.

**Table S2.** ASDR and age-standardized DALY rate (per 100,000) due to unsafe water, sanitation and hygiene in different countries and territories, in 1990 and 2019.

| Countries and territories | ASDR (per 100,000), No. (95% UI) |                      | Age-standardized DALY rate (per 100,000), No. (95% UI) |                           |
|---------------------------|----------------------------------|----------------------|--------------------------------------------------------|---------------------------|
|                           | 1990                             | 2019                 | 1990                                                   | 2019                      |
| Afghanistan               | 45.17 (23.65-70.45)              | 17.03 (10.36-24.13)  | 3225.04 (1500.07-5397.37)                              | 1159.69 (777.50-1662.52)  |
| Albania                   | 3.93 (2.40-5.54)                 | 0.39 (0.22-0.59)     | 428.79 (315.59-551.78)                                 | 144.86 (90.02-212.11)     |
| Algeria                   | 11.31 (6.54-18.03)               | 2.22 (1.33-3.22)     | 786.00 (437.22-1310.20)                                | 178.74 (116.29-243.70)    |
| American Samoa            | 14.51 (8.72-24.11)               | 6.42 (3.60-10.82)    | 436.17 (312.02-607.78)                                 | 290.79 (182.70-407.04)    |
| Andorra                   | 0.22 (0.11-0.37)                 | 0.15 (0.07-0.25)     | 9.47 (5.76-14.35)                                      | 5.36 (3.30-8.02)          |
| Angola                    | 372.09 (192.62-589.39)           | 88.40 (59.71-130.82) | 18302.72 (9317.81-29167.36)                            | 3155.86 (2179.33-4448.74) |
| Antigua and Barbuda       | 7.83 (5.53-10.27)                | 4.30 (2.67-6.20)     | 338.97 (267.99-413.61)                                 | 245.57 (174.29-322.36)    |
| Argentina                 | 5.40 (3.94-6.81)                 | 2.38 (1.27-3.50)     | 317.13 (258.59-374.93)                                 | 96.84 (60.04-133.59)      |
| Armenia                   | 9.98 (7.73-12.45)                | 0.91 (0.53-1.36)     | 923.45 (720.50-1149.18)                                | 143.97 (100.55-196.67)    |
| Australia                 | 0.32 (0.17-0.49)                 | 0.28 (0.16-0.42)     | 21.32 (13.13-31.86)                                    | 16.21 (8.98-26.99)        |
| Austria                   | 0.14 (0.06-0.23)                 | 0.11 (0.07-0.16)     | 20.07 (11.73-31.44)                                    | 8.40 (5.32-12.64)         |
| Azerbaijan                | 22.48 (16.56-29.15)              | 2.39 (1.29-3.81)     | 2017.88 (1506.10-2588.54)                              | 295.11 (192.29-423.04)    |
| Bahamas                   | 6.01 (4.14-8.06)                 | 2.83 (1.68-4.13)     | 310.97 (234.71-395.42)                                 | 196.94 (138.49-262.04)    |
| Bahrain                   | 5.40 (3.22-8.42)                 | 2.46 (1.41-3.85)     | 202.35 (144.73-270.90)                                 | 151.34 (94.74-220.56)     |

|                                  |                        |                       |                             |                           |
|----------------------------------|------------------------|-----------------------|-----------------------------|---------------------------|
| Bangladesh                       | 178.19 (122.43-244.01) | 35.50 (18.09-70.63)   | 6515.36 (5074.79-8182.26)   | 1041.76 (664.16-1664.43)  |
| Barbados                         | 4.96 (3.46-6.55)       | 3.41 (1.84-5.04)      | 255.72 (196.23-318.09)      | 213.34 (144.03-287.85)    |
| Belarus                          | 1.11 (0.73-1.49)       | 0.21 (0.11-0.33)      | 183.60 (137.59-243.83)      | 83.35 (51.35-124.64)      |
| Belgium                          | 0.34 (0.19-0.51)       | 0.41 (0.24-0.60)      | 18.12 (10.93-28.03)         | 11.37 (7.00-16.98)        |
| Belize                           | 17.98 (14.37-21.88)    | 7.52 (5.05-10.36)     | 1030.95 (844.89-1230.92)    | 387.00 (296.10-483.99)    |
| Benin                            | 195.14 (143.75-263.13) | 81.94 (51.54-125.07)  | 8802.75 (6553.84-11498.90)  | 3179.49 (1922.55-5024.95) |
| Bermuda                          | 3.17 (2.05-4.36)       | 1.12 (0.60-1.69)      | 180.50 (134.94-233.06)      | 153.45 (100.16-215.11)    |
| Bhutan                           | 161.29 (89.81-254.09)  | 23.43 (11.04-43.01)   | 4393.37 (2383.63-6501.36)   | 728.56 (451.67-1084.53)   |
| Bolivia (Plurinational State of) | 55.44 (34.03-83.38)    | 12.29 (7.31-18.78)    | 3036.55 (1823.52-4583.59)   | 537.11 (364.88-751.06)    |
| Bosnia and Herzegovina           | 0.88 (0.60-1.19)       | 0.20 (0.12-0.31)      | 228.26 (154.49-314.93)      | 85.78 (43.54-138.59)      |
| Botswana                         | 140.99 (89.71-220.66)  | 48.37 (29.52-75.42)   | 5374.86 (3806.56-7489.62)   | 2038.93 (1338.01-2977.72) |
| Brazil                           | 34.21 (28.05-41.37)    | 5.24 (3.60-6.89)      | 2384.03 (1946.14-2948.24)   | 280.62 (212.23-352.63)    |
| Brunei Darussalam                | 2.04 (1.15-3.24)       | 1.48 (0.78-2.29)      | 50.40 (31.28-71.72)         | 32.02 (17.87-47.76)       |
| Bulgaria                         | 1.08 (0.64-1.58)       | 0.32 (0.17-0.49)      | 164.26 (98.44-237.00)       | 75.51 (36.86-125.79)      |
| Burkina Faso                     | 266.51 (188.84-363.35) | 114.67 (78.06-170.19) | 13132.20 (9355.81-17469.39) | 4778.95 (3280.03-6672.64) |
| Burundi                          | 234.67 (142.06-360.26) | 124.89 (78.50-179.86) | 9532.72 (6330.98-13139.38)  | 5077.43 (2924.03-7630.46) |
| Cabo Verde                       | 81.67 (60.67-105.06)   | 22.57 (14.24-32.11)   | 4721.29 (3536.39-5992.71)   | 738.32 (531.19-957.14)    |

|                          |                        |                        |                              |                             |
|--------------------------|------------------------|------------------------|------------------------------|-----------------------------|
| Cambodia                 | 123.07 (80.05-183.33)  | 25.33 (15.71-38.73)    | 5128.26 (3659.31-6860.16)    | 796.26 (552.88-1086.34)     |
| Cameroon                 | 196.12 (129.81-265.72) | 88.86 (56.05-125.19)   | 10277.73 (6195.39-13900.54)  | 4481.98 (2641.56-6499.33)   |
| Canada                   | 0.28 (0.14-0.44)       | 0.31 (0.20-0.44)       | 23.17 (13.53-35.44)          | 14.22 (8.52-21.40)          |
| Central African Republic | 333.61 (197.70-507.78) | 254.21 (155.71-380.43) | 14772.43 (8867.25-22655.62)  | 10361.41 (6769.31-14343.01) |
| Chad                     | 289.14 (203.83-387.49) | 190.27 (136.81-255.24) | 14250.08 (10286.12-18482.38) | 9817.13 (6944.73-13158.07)  |
| Chile                    | 5.92 (4.13-7.70)       | 1.13 (0.71-1.60)       | 223.22 (172.60-279.67)       | 54.15 (32.85-81.92)         |
| China                    | 14.55 (10.70-18.79)    | 0.87 (0.53-1.27)       | 1029.25 (793.60-1289.56)     | 91.40 (64.39-121.78)        |
| Colombia                 | 14.18 (11.41-16.69)    | 2.16 (1.38-3.11)       | 971.44 (791.00-1157.25)      | 166.94 (112.26-226.24)      |
| Comoros                  | 172.01 (94.44-262.10)  | 69.58 (46.43-101.93)   | 7710.56 (3881.85-11156.19)   | 2689.49 (1836.80-3673.14)   |
| Congo                    | 188.70 (119.06-272.16) | 73.44 (44.83-112.72)   | 8238.37 (4704.79-12215.55)   | 2625.05 (1534.19-3743.41)   |
| Cook Islands             | 8.00 (4.61-12.88)      | 2.76 (1.51-4.40)       | 319.80 (218.63-435.81)       | 205.01 (123.77-290.27)      |
| Costa Rica               | 6.57 (4.92-8.16)       | 2.21 (1.35-3.20)       | 354.96 (272.90-446.70)       | 114.58 (71.53-164.22)       |
| Croatia                  | 0.41 (0.26-0.57)       | 0.18 (0.10-0.29)       | 103.97 (57.88-158.83)        | 50.23 (23.34-86.92)         |
| Cuba                     | 7.39 (5.54-9.18)       | 3.34 (1.99-4.98)       | 350.52 (285.42-421.56)       | 217.19 (156.30-285.98)      |
| Cyprus                   | 0.68 (0.37-1.16)       | 0.23 (0.12-0.37)       | 30.55 (18.96-45.55)          | 9.39 (5.29-15.69)           |
| Czechia                  | 0.27 (0.14-0.40)       | 0.43 (0.22-0.70)       | 77.48 (37.24-128.87)         | 43.22 (17.60-76.85)         |
| Côte d'Ivoire            | 144.18 (102.80-196.87) | 65.10 (40.68-94.24)    | 6543.77 (4745.24-8554.90)    | 2578.77 (1604.71-3872.38)   |

|                                       |                        |                       |                             |                           |
|---------------------------------------|------------------------|-----------------------|-----------------------------|---------------------------|
| Democratic People's Republic of Korea | 5.24 (3.18-7.77)       | 1.54 (0.89-2.38)      | 436.55 (290.64-635.27)      | 172.11 (110.29-251.93)    |
| Democratic Republic of the Congo      | 147.77 (108.68-202.23) | 80.96 (50.68-124.43)  | 6197.91 (4547.16-7985.69)   | 3033.36 (1839.47-4640.88) |
| Denmark                               | 0.33 (0.18-0.48)       | 0.34 (0.20-0.49)      | 13.90 (8.55-21.35)          | 9.11 (5.61-13.67)         |
| Djibouti                              | 160.51 (104.87-229.68) | 62.14 (37.93-92.26)   | 7742.81 (4796.43-10932.88)  | 2257.50 (1396.04-3243.92) |
| Dominica                              | 10.10 (6.71-14.09)     | 5.05 (3.09-7.37)      | 440.12 (342.54-556.76)      | 294.35 (211.82-385.34)    |
| Dominican Republic                    | 37.28 (28.94-46.03)    | 8.80 (5.51-13.01)     | 2711.90 (2112.60-3379.74)   | 519.24 (360.23-737.68)    |
| Ecuador                               | 30.88 (23.13-39.49)    | 5.20 (2.83-8.02)      | 1794.68 (1426.19-2151.57)   | 253.71 (170.70-343.40)    |
| Egypt                                 | 48.23 (38.08-60.15)    | 6.56 (3.97-9.76)      | 3851.20 (3014.67-4843.32)   | 551.84 (333.56-821.83)    |
| El Salvador                           | 45.11 (34.74-55.89)    | 7.46 (4.51-11.43)     | 2885.19 (2317.96-3454.34)   | 369.05 (261.32-493.73)    |
| Equatorial Guinea                     | 354.33 (165.75-610.12) | 34.33 (20.57-54.36)   | 15048.51 (7270.31-25601.52) | 998.03 (627.04-1524.35)   |
| Eritrea                               | 429.25 (161.04-689.81) | 137.63 (80.98-253.25) | 16274.23 (7821.98-24491.52) | 5031.03 (3270.34-8547.13) |
| Estonia                               | 0.56 (0.32-0.81)       | 0.22 (0.11-0.35)      | 133.49 (88.44-188.52)       | 82.69 (43.55-133.90)      |
| Eswatini                              | 128.98 (82.84-193.67)  | 77.93 (47.40-121.74)  | 5074.87 (3411.41-7265.73)   | 3214.79 (2094.97-4831.42) |
| Ethiopia                              | 349.77 (194.64-521.00) | 93.66 (61.24-129.56)  | 13656.00 (9177.46-18454.60) | 3354.75 (2433.42-4418.66) |
| Fiji                                  | 42.28 (25.60-69.23)    | 15.86 (9.11-26.03)    | 1177.25 (835.50-1680.08)    | 608.42 (420.16-830.81)    |
| Finland                               | 0.52 (0.27-0.81)       | 0.07 (0.04-0.11)      | 17.29 (10.76-25.31)         | 4.85 (2.94-7.61)          |
| France                                | 0.47 (0.28-0.67)       | 0.20 (0.11-0.30)      | 20.74 (12.49-32.42)         | 8.04 (4.65-13.17)         |

|               |                        |                       |                             |                           |
|---------------|------------------------|-----------------------|-----------------------------|---------------------------|
| Gabon         | 105.15 (67.11-154.11)  | 33.98 (19.78-54.76)   | 4171.89 (2604.12-6003.65)   | 1171.03 (711.12-1784.43)  |
| Gambia        | 127.99 (88.61-180.08)  | 66.22 (43.03-97.78)   | 4978.09 (3428.84-6837.84)   | 2171.98 (1495.77-3095.31) |
| Georgia       | 5.01 (3.48-6.74)       | 0.75 (0.46-1.08)      | 494.48 (359.63-637.56)      | 158.30 (106.60-221.84)    |
| Germany       | 0.20 (0.10-0.30)       | 0.20 (0.12-0.29)      | 10.60 (6.39-16.04)          | 7.25 (4.35-10.90)         |
| Ghana         | 173.34 (113.26-241.68) | 52.37 (34.51-75.40)   | 9550.23 (5619.49-13807.68)  | 1952.34 (1327.08-2732.35) |
| Greece        | 0.16 (0.07-0.26)       | 0.20 (0.08-0.33)      | 15.85 (10.23-23.54)         | 7.82 (4.94-11.25)         |
| Greenland     | 1.87 (1.02-3.21)       | 0.67 (0.36-1.06)      | 76.15 (48.58-107.66)        | 29.37 (19.04-44.13)       |
| Grenada       | 13.14 (8.21-18.20)     | 5.34 (2.95-7.84)      | 558.84 (407.99-710.34)      | 297.85 (216.11-387.70)    |
| Guam          | 5.83 (3.44-9.86)       | 2.46 (1.33-4.02)      | 261.64 (176.96-352.60)      | 232.48 (137.44-335.46)    |
| Guatemala     | 169.92 (145.44-192.03) | 25.67 (18.67-33.95)   | 7727.86 (6762.93-8700.93)   | 1044.15 (776.33-1366.20)  |
| Guinea        | 246.32 (165.99-343.90) | 107.10 (69.55-157.85) | 10825.45 (7813.26-14046.95) | 4014.95 (2658.26-5640.61) |
| Guinea-Bissau | 298.38 (190.97-445.32) | 129.03 (83.88-193.02) | 12347.23 (8462.16-17356.38) | 4783.02 (3082.63-7097.09) |
| Guyana        | 39.50 (32.21-47.19)    | 16.43 (11.26-22.09)   | 2032.63 (1699.40-2401.30)   | 692.57 (517.27-904.57)    |
| Haiti         | 154.31 (103.54-221.80) | 49.07 (31.72-69.89)   | 9128.52 (6907.34-11547.78)  | 2814.83 (1768.30-4156.37) |
| Honduras      | 60.64 (45.17-83.25)    | 15.09 (8.53-27.86)    | 3602.97 (2856.29-4472.03)   | 678.64 (452.96-1002.70)   |
| Hungary       | 0.23 (0.14-0.32)       | 0.49 (0.29-0.74)      | 153.25 (95.97-223.51)       | 76.35 (39.99-124.12)      |
| Iceland       | 0.39 (0.18-0.62)       | 0.18 (0.09-0.29)      | 16.29 (9.64-24.73)          | 6.94 (4.25-10.15)         |

|                                  |                        |                      |                            |                           |
|----------------------------------|------------------------|----------------------|----------------------------|---------------------------|
| India                            | 275.60 (180.60-374.91) | 69.76 (41.28-111.64) | 7803.99 (5766.67-10041.93) | 1808.09 (1263.88-2585.86) |
| Indonesia                        | 118.94 (74.67-178.05)  | 35.86 (21.06-54.16)  | 4350.82 (3435.50-5549.98)  | 1001.32 (708.56-1327.20)  |
| Iran (Islamic Republic of)       | 9.44 (6.66-12.75)      | 1.65 (1.03-2.40)     | 618.49 (460.28-830.80)     | 169.10 (109.36-235.26)    |
| Iraq                             | 11.38 (5.49-18.90)     | 1.88 (1.18-2.77)     | 825.69 (373.58-1455.07)    | 201.20 (132.48-275.05)    |
| Ireland                          | 0.60 (0.26-0.95)       | 0.27 (0.13-0.43)     | 22.28 (14.39-31.62)        | 8.00 (5.11-11.83)         |
| Israel                           | 0.32 (0.19-0.47)       | 0.36 (0.22-0.51)     | 16.99 (10.61-26.00)        | 10.72 (6.87-15.93)        |
| Italy                            | 0.15 (0.07-0.23)       | 0.11 (0.07-0.17)     | 12.12 (7.41-19.25)         | 6.38 (3.69-10.31)         |
| Jamaica                          | 13.05 (10.64-15.71)    | 2.94 (1.86-4.25)     | 777.98 (641.63-937.14)     | 209.09 (155.09-271.21)    |
| Japan                            | 1.17 (0.57-1.79)       | 0.57 (0.29-0.88)     | 23.62 (13.93-34.41)        | 11.98 (7.07-17.66)        |
| Jordan                           | 4.62 (2.93-6.68)       | 1.31 (0.73-2.01)     | 278.73 (202.57-372.29)     | 119.71 (73.10-179.05)     |
| Kazakhstan                       | 10.98 (8.74-13.50)     | 1.11 (0.59-1.70)     | 972.46 (786.69-1188.91)    | 136.42 (96.36-186.86)     |
| Kenya                            | 133.57 (96.85-182.83)  | 82.17 (55.36-119.57) | 5366.84 (4199.47-6738.80)  | 2898.23 (2116.64-3925.42) |
| Kiribati                         | 224.80 (128.53-344.26) | 86.19 (46.30-146.43) | 5997.35 (4135.02-8346.57)  | 2111.70 (1350.07-3094.09) |
| Kuwait                           | 1.72 (0.98-2.50)       | 1.44 (0.61-2.39)     | 124.03 (82.01-170.26)      | 99.64 (59.04-152.16)      |
| Kyrgyzstan                       | 12.96 (9.93-16.17)     | 1.73 (1.28-2.21)     | 1156.59 (905.38-1429.58)   | 235.85 (180.56-296.97)    |
| Lao People's Democratic Republic | 179.04 (95.89-279.93)  | 32.02 (20.45-48.83)  | 7600.42 (5163.95-10318.53) | 1145.59 (715.04-1744.66)  |
| Latvia                           | 0.66 (0.43-0.93)       | 0.27 (0.14-0.41)     | 176.58 (119.28-248.71)     | 97.64 (54.35-148.01)      |

|                                  |                        |                       |                             |                           |
|----------------------------------|------------------------|-----------------------|-----------------------------|---------------------------|
| Lebanon                          | 5.33 (3.46-7.59)       | 1.75 (0.97-2.84)      | 302.15 (225.86-405.02)      | 180.37 (114.71-250.58)    |
| Lesotho                          | 184.92 (128.21-257.43) | 137.90 (88.74-210.44) | 7877.20 (5993.85-10146.86)  | 5012.70 (3491.52-6933.47) |
| Liberia                          | 235.48 (176.63-311.91) | 87.36 (56.89-141.30)  | 13215.97 (9593.63-17547.10) | 3673.48 (2252.85-5389.29) |
| Libya                            | 8.01 (4.60-12.51)      | 1.89 (1.08-2.83)      | 494.50 (314.09-811.38)      | 186.85 (121.68-263.44)    |
| Lithuania                        | 0.66 (0.44-0.90)       | 0.35 (0.21-0.51)      | 163.69 (113.51-229.75)      | 101.31 (58.11-157.78)     |
| Luxembourg                       | 0.27 (0.15-0.41)       | 0.19 (0.11-0.30)      | 12.63 (7.89-19.30)          | 7.40 (4.42-11.38)         |
| Madagascar                       | 192.16 (149.14-251.35) | 106.62 (69.37-158.48) | 10471.00 (8498.46-12720.51) | 4836.89 (3405.03-6560.63) |
| Malawi                           | 249.95 (181.97-344.83) | 92.73 (62.32-135.67)  | 12532.56 (9278.72-15916.36) | 3284.27 (2305.79-4417.24) |
| Malaysia                         | 10.26 (6.16-17.01)     | 5.68 (3.17-9.17)      | 326.90 (224.66-461.07)      | 183.17 (110.92-266.66)    |
| Maldives                         | 31.05 (21.18-45.92)    | 4.59 (2.97-6.80)      | 1398.97 (942.13-2051.51)    | 225.87 (170.20-286.02)    |
| Mali                             | 287.91 (200.89-387.34) | 113.03 (63.04-189.42) | 13353.95 (9419.47-17851.70) | 4224.09 (2743.42-6564.60) |
| Malta                            | 0.32 (0.15-0.52)       | 0.21 (0.10-0.36)      | 18.59 (11.69-27.56)         | 7.25 (4.39-10.87)         |
| Marshall Islands                 | 88.15 (47.21-146.78)   | 23.28 (11.96-41.43)   | 2250.81 (1422.02-3399.25)   | 716.69 (466.34-1048.80)   |
| Mauritania                       | 184.60 (124.69-255.35) | 64.88 (39.05-97.13)   | 8430.44 (5346.71-11841.15)  | 2776.49 (1635.80-4176.75) |
| Mauritius                        | 6.85 (5.38-8.36)       | 0.87 (0.50-1.28)      | 346.33 (266.86-431.54)      | 64.38 (34.79-99.68)       |
| Mexico                           | 31.21 (25.63-36.55)    | 3.87 (2.78-4.96)      | 1701.73 (1360.98-2040.71)   | 181.66 (128.33-234.07)    |
| Micronesia (Federated States of) | 79.13 (40.47-134.54)   | 18.63 (10.13-32.89)   | 2129.02 (1345.64-3204.10)   | 580.10 (385.48-831.12)    |

|                          |                        |                       |                              |                           |
|--------------------------|------------------------|-----------------------|------------------------------|---------------------------|
| Monaco                   | 0.21 (0.09-0.34)       | 0.20 (0.09-0.34)      | 8.90 (5.41-13.33)            | 5.79 (3.41-8.59)          |
| Mongolia                 | 32.32 (18.78-51.42)    | 2.73 (1.58-4.18)      | 2785.50 (1654.03-4416.44)    | 320.96 (231.65-430.38)    |
| Montenegro               | 0.28 (0.17-0.41)       | 0.15 (0.08-0.22)      | 122.30 (73.16-180.62)        | 77.64 (41.35-119.52)      |
| Morocco                  | 42.49 (31.22-55.57)    | 5.91 (3.69-8.80)      | 3199.64 (2332.46-4274.72)    | 433.95 (287.28-636.86)    |
| Mozambique               | 218.06 (125.58-329.06) | 68.03 (39.22-102.87)  | 11774.26 (6347.05-19404.60)  | 2502.86 (1512.05-3658.55) |
| Myanmar                  | 137.51 (70.20-222.25)  | 21.26 (14.21-31.29)   | 8069.68 (3575.85-13961.84)   | 851.38 (585.06-1182.55)   |
| Namibia                  | 135.76 (86.54-204.05)  | 53.14 (30.96-83.52)   | 4645.30 (2985.37-6696.09)    | 1968.56 (1209.32-2991.84) |
| Nauru                    | 29.36 (17.42-48.63)    | 11.47 (6.52-19.39)    | 866.10 (590.79-1238.86)      | 466.90 (317.53-653.09)    |
| Nepal                    | 179.34 (102.66-267.88) | 34.96 (19.75-60.09)   | 7050.13 (4992.80-9387.67)    | 1051.80 (732.21-1460.95)  |
| Netherlands              | 0.23 (0.10-0.38)       | 0.22 (0.11-0.34)      | 9.04 (5.36-13.89)            | 5.88 (3.63-8.80)          |
| New Zealand              | 0.76 (0.36-1.20)       | 0.40 (0.22-0.60)      | 36.48 (22.20-55.46)          | 25.58 (13.40-42.65)       |
| Nicaragua                | 45.07 (36.52-54.29)    | 5.48 (3.57-7.96)      | 3417.97 (2768.68-4138.25)    | 331.39 (248.83-427.78)    |
| Niger                    | 398.10 (256.04-552.87) | 144.12 (99.26-207.76) | 22407.58 (15155.71-30771.91) | 6906.54 (4651.81-9922.34) |
| Nigeria                  | 301.04 (188.84-415.04) | 109.91 (79.13-153.44) | 16697.33 (11010.70-22808.36) | 5663.49 (4364.08-7218.39) |
| Niue                     | 18.23 (10.18-31.95)    | 5.95 (3.08-11.15)     | 571.31 (397.05-820.83)       | 317.44 (199.92-454.77)    |
| North Macedonia          | 6.79 (4.37-9.41)       | 0.24 (0.14-0.38)      | 702.89 (452.75-959.43)       | 83.74 (45.34-134.90)      |
| Northern Mariana Islands | 8.03 (4.53-13.91)      | 5.28 (2.94-8.70)      | 290.95 (196.07-405.22)       | 291.10 (179.03-407.23)    |

|                     |                       |                      |                           |                           |
|---------------------|-----------------------|----------------------|---------------------------|---------------------------|
| Norway              | 0.48 (0.23-0.76)      | 0.30 (0.18-0.43)     | 13.42 (8.24-20.04)        | 6.97 (4.41-10.32)         |
| Oman                | 17.78 (11.20-25.76)   | 3.86 (2.21-5.74)     | 637.91 (457.54-853.49)    | 205.43 (132.21-291.99)    |
| Pakistan            | 160.48 (99.24-232.68) | 64.26 (35.66-103.27) | 5702.99 (4162.71-7309.72) | 2188.05 (1545.24-3022.26) |
| Palau               | 25.77 (14.28-42.96)   | 10.87 (5.83-18.12)   | 755.64 (491.76-1094.40)   | 420.27 (275.58-586.71)    |
| Palestine           | 8.87 (5.38-13.03)     | 2.78 (1.63-4.31)     | 388.83 (279.09-515.08)    | 182.73 (129.69-242.44)    |
| Panama              | 9.99 (8.23-11.96)     | 4.57 (3.11-6.23)     | 689.00 (563.50-832.95)    | 320.84 (232.64-421.95)    |
| Papua New Guinea    | 118.00 (83.36-168.52) | 67.91 (44.36-106.56) | 4100.15 (3050.26-5329.22) | 2405.70 (1720.60-3266.76) |
| Paraguay            | 22.36 (16.31-30.30)   | 4.59 (2.74-6.86)     | 1192.62 (935.93-1470.11)  | 264.56 (187.48-358.27)    |
| Peru                | 35.88 (25.55-47.11)   | 7.31 (4.17-11.13)    | 2175.39 (1604.17-2810.51) | 371.53 (258.80-505.24)    |
| Philippines         | 48.74 (34.47-68.03)   | 15.35 (9.90-22.52)   | 2363.63 (1741.54-2960.84) | 568.98 (428.61-725.94)    |
| Poland              | 0.51 (0.33-0.72)      | 0.29 (0.17-0.45)     | 107.56 (69.04-151.75)     | 44.78 (22.05-72.10)       |
| Portugal            | 0.81 (0.52-1.13)      | 0.47 (0.27-0.71)     | 68.61 (47.95-92.06)       | 19.39 (12.22-28.93)       |
| Puerto Rico         | 3.41 (1.67-5.26)      | 2.08 (1.32-3.00)     | 167.93 (113.06-222.96)    | 183.30 (121.93-252.50)    |
| Qatar               | 2.85 (1.64-4.38)      | 1.43 (0.78-2.24)     | 169.34 (118.46-226.97)    | 92.66 (56.09-137.27)      |
| Republic of Korea   | 2.03 (1.12-3.35)      | 0.61 (0.31-1.00)     | 60.39 (38.03-87.74)       | 15.36 (8.68-24.82)        |
| Republic of Moldova | 4.85 (3.31-6.48)      | 1.12 (0.59-1.73)     | 484.38 (366.31-615.58)    | 186.57 (133.46-253.52)    |
| Romania             | 3.28 (2.30-4.36)      | 0.47 (0.28-0.68)     | 419.09 (321.93-523.56)    | 118.80 (73.40-176.25)     |

|                                  |                        |                       |                             |                           |
|----------------------------------|------------------------|-----------------------|-----------------------------|---------------------------|
| Russian Federation               | 1.59 (1.22-1.96)       | 0.51 (0.29-0.76)      | 237.26 (180.07-302.37)      | 124.74 (81.65-180.61)     |
| Rwanda                           | 261.69 (161.13-392.66) | 64.60 (40.82-98.01)   | 12746.57 (8879.60-16992.01) | 2395.95 (1595.90-3472.72) |
| Saint Kitts and Nevis            | 23.43 (18.56-28.46)    | 7.27 (4.97-9.67)      | 964.72 (808.35-1148.01)     | 361.88 (262.04-466.18)    |
| Saint Lucia                      | 12.19 (9.70-14.75)     | 3.76 (2.55-5.07)      | 556.22 (461.78-663.26)      | 279.63 (204.85-363.35)    |
| Saint Vincent and the Grenadines | 16.57 (13.06-20.09)    | 6.31 (4.35-8.51)      | 811.12 (651.03-991.99)      | 336.84 (257.60-427.00)    |
| Samoa                            | 16.90 (8.79-29.62)     | 6.65 (3.41-11.89)     | 529.53 (346.04-764.53)      | 296.50 (174.96-431.56)    |
| San Marino                       | 0.15 (0.07-0.24)       | 0.10 (0.05-0.18)      | 8.62 (5.22-13.48)           | 4.80 (2.94-7.38)          |
| Sao Tome and Principe            | 107.24 (79.58-138.61)  | 28.58 (16.98-41.71)   | 5824.66 (4332.48-7570.95)   | 938.89 (641.26-1276.57)   |
| Saudi Arabia                     | 25.63 (16.41-36.57)    | 2.83 (1.61-4.27)      | 1043.82 (721.73-1484.86)    | 154.18 (94.65-225.66)     |
| Senegal                          | 212.70 (152.78-288.01) | 74.15 (48.63-108.37)  | 9929.13 (7491.99-12597.17)  | 2949.97 (1926.94-4091.55) |
| Serbia                           | 0.50 (0.29-0.76)       | 0.24 (0.12-0.39)      | 130.35 (80.63-191.43)       | 64.79 (31.18-106.00)      |
| Seychelles                       | 12.33 (7.56-19.03)     | 7.42 (4.56-11.32)     | 356.09 (255.28-478.67)      | 248.31 (175.60-330.43)    |
| Sierra Leone                     | 248.91 (178.64-334.56) | 105.21 (61.58-162.84) | 12399.57 (8871.44-16358.44) | 3781.04 (2063.13-5888.91) |
| Singapore                        | 2.71 (1.47-4.00)       | 1.06 (0.46-1.70)      | 64.42 (41.10-90.26)         | 20.87 (11.39-30.93)       |
| Slovakia                         | 0.76 (0.40-1.17)       | 0.25 (0.13-0.41)      | 126.68 (72.83-192.83)       | 48.83 (22.64-88.81)       |
| Slovenia                         | 0.32 (0.17-0.49)       | 0.14 (0.07-0.22)      | 72.59 (40.58-116.02)        | 33.19 (15.97-58.82)       |
| Solomon Islands                  | 241.41 (143.79-359.46) | 95.16 (57.76-153.05)  | 6339.28 (4214.27-9094.60)   | 2496.65 (1732.45-3672.42) |

|                            |                        |                       |                             |                           |
|----------------------------|------------------------|-----------------------|-----------------------------|---------------------------|
| Somalia                    | 285.26 (151.47-455.97) | 157.98 (91.94-248.87) | 11283.70 (7057.77-16142.91) | 6069.59 (3957.47-8734.85) |
| South Africa               | 80.04 (59.13-108.75)   | 37.69 (25.48-56.96)   | 4305.71 (3346.66-5523.92)   | 1466.87 (1098.90-1965.07) |
| South Sudan                | 188.17 (125.29-271.22) | 134.20 (88.37-193.00) | 8005.34 (5505.78-11390.96)  | 5193.81 (3574.40-7222.07) |
| Spain                      | 0.28 (0.15-0.42)       | 0.18 (0.10-0.27)      | 15.05 (9.53-22.74)          | 7.39 (4.36-11.83)         |
| Sri Lanka                  | 37.04 (22.78-53.26)    | 5.47 (3.14-9.17)      | 942.57 (677.65-1240.84)     | 202.21 (143.02-280.21)    |
| Sudan                      | 76.28 (34.38-136.26)   | 21.81 (12.63-33.28)   | 5554.30 (2221.00-10534.65)  | 1350.62 (800.34-2140.72)  |
| Suriname                   | 28.24 (21.39-36.51)    | 9.14 (5.98-13.43)     | 1596.41 (1268.48-1930.71)   | 490.12 (354.04-650.62)    |
| Sweden                     | 0.30 (0.14-0.49)       | 0.25 (0.16-0.37)      | 13.59 (8.16-21.02)          | 7.53 (4.87-11.43)         |
| Switzerland                | 0.29 (0.14-0.45)       | 0.13 (0.07-0.20)      | 9.75 (6.11-14.56)           | 4.91 (3.13-7.37)          |
| Syrian Arab Republic       | 7.89 (5.23-11.03)      | 1.96 (1.17-2.94)      | 597.80 (405.23-850.62)      | 174.49 (116.20-239.01)    |
| Taiwan (Province of China) | 1.98 (1.26-2.73)       | 0.71 (0.34-1.15)      | 112.41 (81.11-146.20)       | 47.93 (26.38-75.64)       |
| Tajikistan                 | 48.36 (38.23-59.55)    | 10.04 (6.54-14.85)    | 4058.82 (3221.32-4976.84)   | 799.61 (555.20-1134.57)   |
| Thailand                   | 23.81 (15.05-37.90)    | 8.10 (4.74-12.63)     | 836.31 (590.55-1199.89)     | 273.18 (193.97-366.33)    |
| Timor-Leste                | 110.34 (63.28-170.20)  | 31.87 (18.02-53.59)   | 4561.79 (3022.78-6375.53)   | 1037.50 (578.01-1527.94)  |
| Togo                       | 211.86 (146.67-280.73) | 106.62 (73.02-148.15) | 11348.61 (7201.82-15041.28) | 5199.85 (3095.35-7253.40) |
| Tokelau                    | 37.82 (21.34-65.01)    | 8.57 (4.63-15.40)     | 1026.80 (672.07-1586.23)    | 345.17 (234.09-491.51)    |
| Tonga                      | 12.78 (7.95-20.66)     | 4.33 (2.44-7.02)      | 461.93 (340.20-614.24)      | 268.22 (189.78-362.18)    |

|                                    |                        |                      |                            |                           |
|------------------------------------|------------------------|----------------------|----------------------------|---------------------------|
| Trinidad and Tobago                | 9.05 (6.64-11.74)      | 2.48 (1.61-3.59)     | 389.66 (305.82-475.97)     | 182.19 (130.56-242.50)    |
| Tunisia                            | 6.00 (3.76-8.94)       | 1.86 (1.06-2.91)     | 375.08 (249.78-577.52)     | 171.95 (117.54-233.36)    |
| Turkey                             | 10.17 (6.35-14.74)     | 1.87 (1.14-2.74)     | 728.18 (488.26-1034.69)    | 193.47 (131.43-266.77)    |
| Turkmenistan                       | 29.24 (22.94-36.03)    | 2.38 (1.48-3.46)     | 2504.47 (1975.23-3071.86)  | 267.69 (189.49-361.01)    |
| Tuvalu                             | 65.14 (34.49-113.99)   | 14.67 (7.80-26.05)   | 1846.96 (1213.67-2730.33)  | 500.02 (329.30-712.19)    |
| Uganda                             | 144.39 (97.19-200.11)  | 65.64 (42.14-99.04)  | 6538.74 (4236.38-9173.54)  | 2216.67 (1513.95-3113.21) |
| Ukraine                            | 0.80 (0.53-1.09)       | 0.58 (0.30-0.93)     | 142.66 (104.30-191.71)     | 126.15 (85.54-177.91)     |
| United Arab Emirates               | 9.80 (4.58-15.30)      | 3.54 (1.50-5.88)     | 260.74 (169.25-364.91)     | 142.10 (80.97-215.32)     |
| United Kingdom                     | 0.47 (0.19-0.77)       | 0.33 (0.15-0.52)     | 12.48 (7.09-19.68)         | 7.39 (4.40-11.15)         |
| United Republic of Tanzania        | 187.15 (135.57-253.27) | 71.01 (45.88-106.27) | 8089.05 (6062.76-10389.06) | 2293.34 (1548.93-3267.62) |
| United States of America           | 0.29 (0.14-0.45)       | 0.33 (0.22-0.45)     | 26.10 (16.38-39.46)        | 14.74 (9.43-21.49)        |
| United States Virgin Islands       | 3.04 (1.88-4.49)       | 1.66 (0.96-2.47)     | 201.84 (148.67-263.37)     | 170.19 (111.42-236.12)    |
| Uruguay                            | 3.60 (2.68-4.47)       | 1.65 (1.01-2.41)     | 192.61 (141.92-240.86)     | 65.08 (37.75-98.53)       |
| Uzbekistan                         | 15.98 (12.18-19.93)    | 2.27 (1.15-3.57)     | 1396.23 (1086.82-1718.98)  | 235.43 (159.89-322.78)    |
| Vanuatu                            | 97.82 (57.75-158.03)   | 51.78 (28.59-87.37)  | 2621.17 (1691.93-3898.69)  | 1468.71 (969.81-2073.17)  |
| Venezuela (Bolivarian Republic of) | 18.42 (15.13-21.42)    | 4.82 (3.15-6.71)     | 1156.95 (953.21-1341.28)   | 278.00 (191.88-372.74)    |
| Viet Nam                           | 19.16 (12.50-27.81)    | 4.38 (2.53-6.72)     | 921.39 (607.49-1297.70)    | 191.66 (137.84-252.52)    |

|          |                        |                      |                            |                           |
|----------|------------------------|----------------------|----------------------------|---------------------------|
| Yemen    | 87.02 (44.25-140.61)   | 22.39 (12.62-35.54)  | 6343.80 (2946.76-10696.82) | 1574.28 (837.88-2662.14)  |
| Zambia   | 205.69 (139.92-294.27) | 77.78 (53.34-113.73) | 9383.41 (6753.86-12558.88) | 3015.29 (2203.05-4144.80) |
| Zimbabwe | 80.90 (53.07-107.98)   | 83.92 (52.61-118.61) | 2944.00 (2091.55-3766.53)  | 2909.64 (1920.41-3945.65) |

---

ASDR, disability-adjusted death rate; DALY, disability-adjusted life year; UI, uncertainty interval.

**Table S3.** ASDR and age-standardized DALY rate (per 100,000) of diarrheal diseases and lower respiratory infections due to unsafe water, sanitation and hygiene from 1990 to 2019.

| Year | ASDR, per 100,000, No. (95% UI) |                              | Age-standardized DALY rate, per 100,000, No. (95% UI) |                              |
|------|---------------------------------|------------------------------|-------------------------------------------------------|------------------------------|
|      | Diarrheal diseases              | Lower respiratory infections | Diarrheal diseases                                    | Lower respiratory infections |
| 1990 | 55.49 (41.19-72.04)             | 8.44 (3.63-12.97)            | 3065.08 (2432.05-3677.58)                             | 548.89 (238.06-854.53)       |
| 1991 | 55.08 (40.29-71.55)             | 8.28 (3.61-12.72)            | 3037.40 (2420.84-3661.44)                             | 537.69 (236.72-840.74)       |
| 1992 | 54.14 (39.42-70.92)             | 8.19 (3.54-12.67)            | 2964.56 (2343.00-3600.56)                             | 529.73 (231.19-827.84)       |
| 1993 | 52.19 (38.50-68.28)             | 8.01 (3.47-12.37)            | 2874.50 (2295.41-3472.01)                             | 516.63 (223.95-809.52)       |
| 1994 | 50.47 (37.60-65.80)             | 7.86 (3.40-12.15)            | 2807.14 (2249.92-3390.64)                             | 505.06 (218.87-790.27)       |
| 1995 | 48.78 (36.25-64.31)             | 7.71 (3.34-11.87)            | 2721.86 (2163.62-3296.26)                             | 494.42 (214.01-770.09)       |
| 1996 | 47.25 (35.01-61.56)             | 7.52 (3.27-11.62)            | 2645.52 (2106.43-3213.12)                             | 479.84 (209.02-752.69)       |
| 1997 | 46.19 (34.58-60.12)             | 7.39 (3.24-11.31)            | 2581.41 (2065.77-3107.90)                             | 467.96 (204.32-732.43)       |
| 1998 | 45.13 (33.92-59.38)             | 7.22 (3.17-11.16)            | 2522.20 (2032.13-3038.18)                             | 455.34 (201.85-710.10)       |
| 1999 | 43.83 (32.81-57.56)             | 7.05 (3.10-10.80)            | 2450.95 (1973.62-2958.64)                             | 443.58 (197.42-685.64)       |
| 2000 | 42.33 (31.74-56.03)             | 6.88 (3.05-10.55)            | 2367.67 (1916.22-2864.48)                             | 430.91 (192.13-666.88)       |
| 2001 | 40.71 (30.65-54.08)             | 6.66 (2.94-10.16)            | 2280.48 (1851.90-2748.77)                             | 414.92 (185.84-638.19)       |
| 2002 | 39.04 (29.62-51.58)             | 6.49 (2.86-9.86)             | 2190.75 (1788.94-2635.94)                             | 401.51 (178.88-615.06)       |

---

|      |                     |                  |                           |                        |
|------|---------------------|------------------|---------------------------|------------------------|
| 2003 | 37.29 (28.75-49.17) | 6.31 (2.78-9.55) | 2099.18 (1727.61-2524.65) | 388.26 (174.44-594.58) |
| 2004 | 35.41 (27.21-46.82) | 6.11 (2.70-9.23) | 2008.83 (1668.25-2407.23) | 375.07 (169.33-574.68) |
| 2005 | 34.18 (26.23-45.42) | 5.95 (2.64-8.99) | 1938.73 (1618.00-2318.05) | 362.83 (163.41-550.39) |
| 2006 | 33.35 (25.69-44.36) | 5.80 (2.59-8.76) | 1887.65 (1578.61-2257.77) | 351.56 (160.46-534.52) |
| 2007 | 32.25 (24.67-42.91) | 5.63 (2.50-8.54) | 1817.47 (1512.61-2174.45) | 338.87 (152.68-512.27) |
| 2008 | 31.21 (23.96-41.80) | 5.46 (2.45-8.39) | 1749.03 (1458.54-2094.78) | 326.00 (148.88-498.28) |
| 2009 | 29.61 (22.53-39.82) | 5.25 (2.37-8.05) | 1672.50 (1399.11-1992.69) | 312.47 (143.39-479.59) |
| 2010 | 28.37 (21.66-38.05) | 5.06 (2.27-7.77) | 1600.43 (1346.53-1885.05) | 299.29 (134.66-458.55) |
| 2011 | 27.50 (20.85-36.92) | 4.87 (2.19-7.51) | 1537.18 (1289.18-1822.23) | 285.68 (128.90-439.49) |
| 2012 | 26.00 (19.69-35.39) | 4.71 (2.11-7.34) | 1450.82 (1218.77-1731.80) | 274.50 (124.59-424.49) |
| 2013 | 24.89 (18.67-34.02) | 4.61 (2.06-7.16) | 1378.65 (1150.30-1654.79) | 265.88 (118.89-408.84) |
| 2014 | 23.59 (17.50-32.50) | 4.48 (1.99-6.89) | 1305.35 (1079.97-1575.35) | 256.92 (114.52-395.66) |
| 2015 | 22.46 (16.56-31.22) | 4.33 (1.91-6.65) | 1239.36 (1010.88-1517.84) | 246.40 (109.37-377.95) |
| 2016 | 21.46 (15.66-29.86) | 4.16 (1.83-6.42) | 1185.14 (958.54-1457.82)  | 234.01 (104.37-361.98) |
| 2017 | 20.98 (15.33-29.65) | 4.00 (1.75-6.21) | 1159.29 (931.89-1431.21)  | 221.93 (99.11-344.10)  |
| 2018 | 19.90 (14.39-28.14) | 3.87 (1.69-6.00) | 1093.57 (868.29-1364.92)  | 212.51 (94.69-331.75)  |
| 2019 | 18.94 (13.59-26.96) | 3.74 (1.66-5.83) | 1040.75 (830.67-1301.00)  | 203.55 (90.59-321.55)  |

---

ASDR, disability-adjusted death rate; DALY, disability-adjusted life year; UI, uncertainty interval.

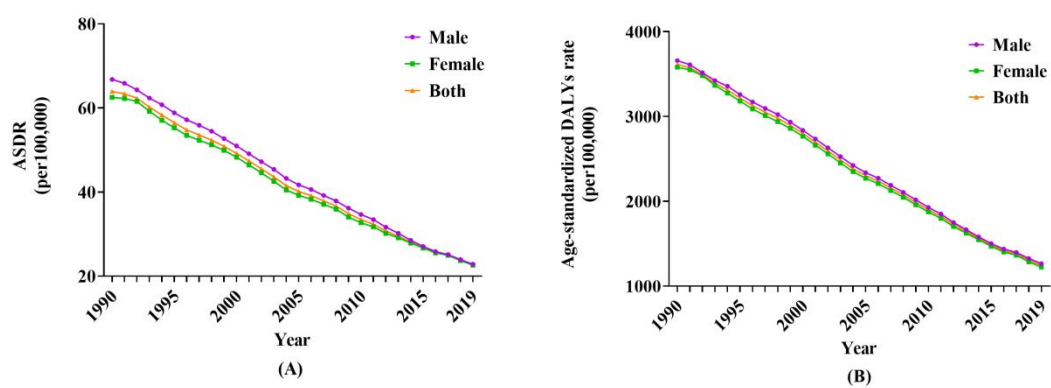


**Figure S1.** ASDR (A) and age-standardized DALY (B) rate of both sexes due to unsafe water, sanitation, and hygiene from 1990 to 2019. ASDR, disability-adjusted death rate; DALY, disability-adjusted life year.

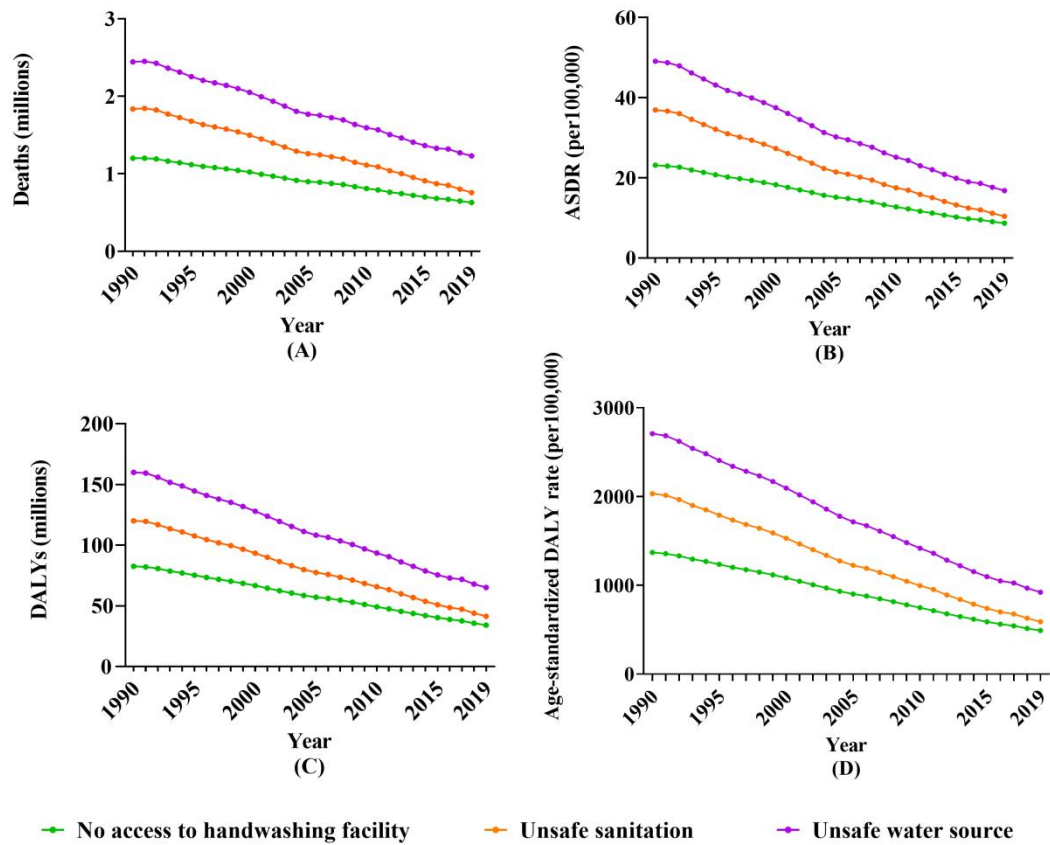


**Figure S2.** Disease burden caused by three risk factors of unsafe water, sanitation, and hygiene from 1990 to 2019. Number of deaths (A) and ASDR (B) from 1990 to 2019. Number of DALYs (C) and age-standardized DALY rate (D) from 1990 to 2019. *ASDR*, disability-adjusted death rate; *DALY*, disability-adjusted life year.

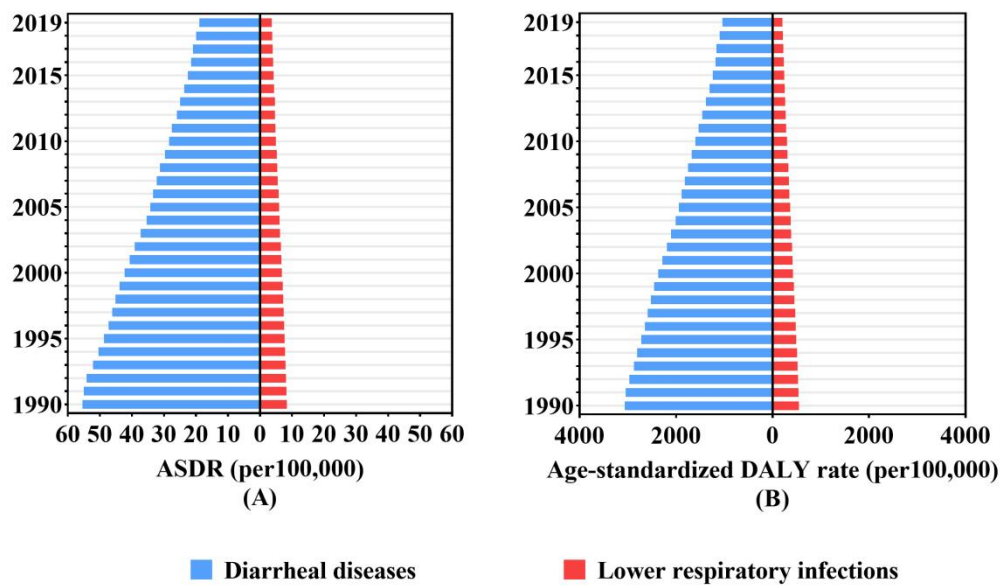


**Figure S3.** Comparison of ASDR (A) and age-standardized DALY rate (B) of different diseases caused by unsafe water, sanitation, and hygiene from 1990 to 2019 globally. Blue bar indicates diarrheal, red bar indicates lower respiratory infections. *ASDR*, disability-adjusted death rate; *DALY*, disability-adjusted life year.