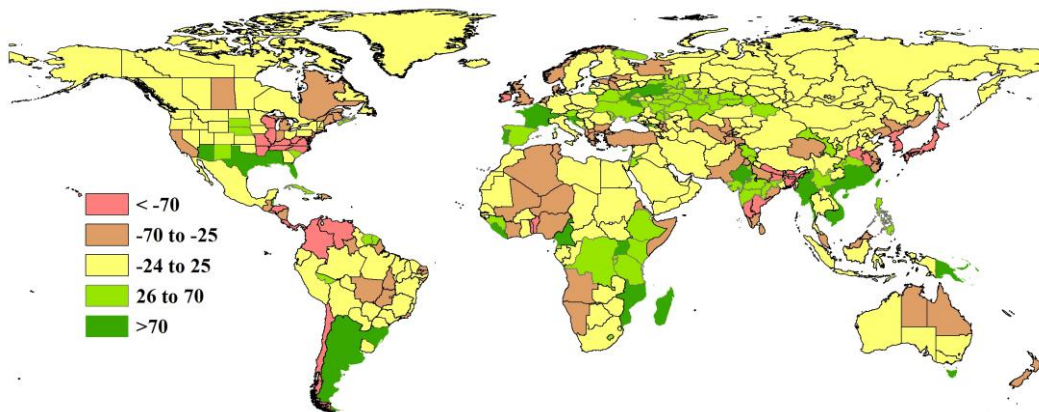


Annex D Environmental Indices and Production Estimates by Country

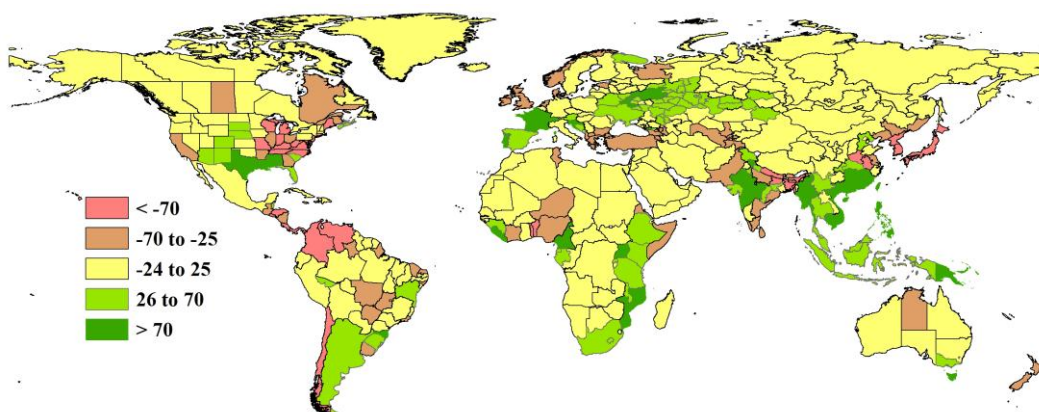
Figures D.1, D.2, and D.3 illustrate accumulated rainfall, temperature accumulation, and accumulated photosynthetically active radiation (PAR) for 173 countries and territories and the first-level administrative units for eight large countries—Australia, Brazil, Canada, China, India, Kazakhstan, Russia, and the United States. The figures each show the values' departure from the five-year average for 2008-12 (a), departure from the twelve-year average (2001-12) (b), and the trend for 2001-13 normalized by dividing it by the twelve-year average (c).

Figure D.1 October 2012-September 2013 rainfall accumulation, for countries and sub-national units (mm)

a. 2013 accumulated rainfall departure from the five-year average



b. 2013 accumulated rainfall departure from the twelve-year average



c. Accumulated rainfall trend for 2001-2013 (refer to figure B.1c for details)

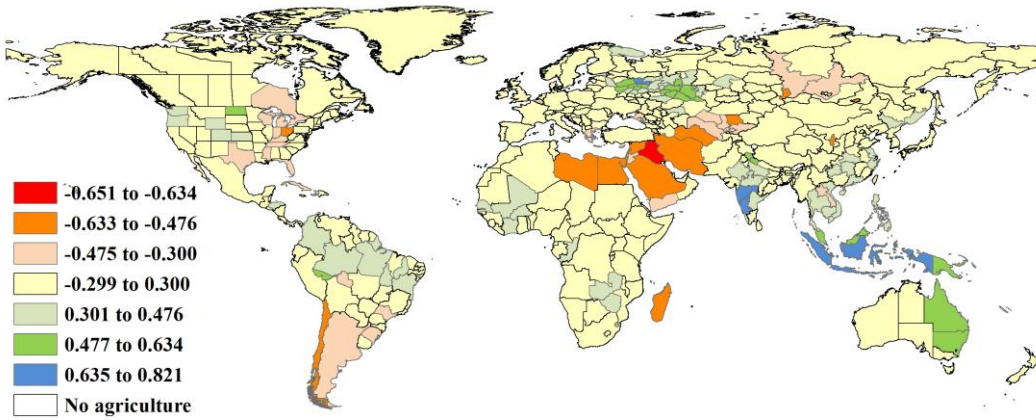
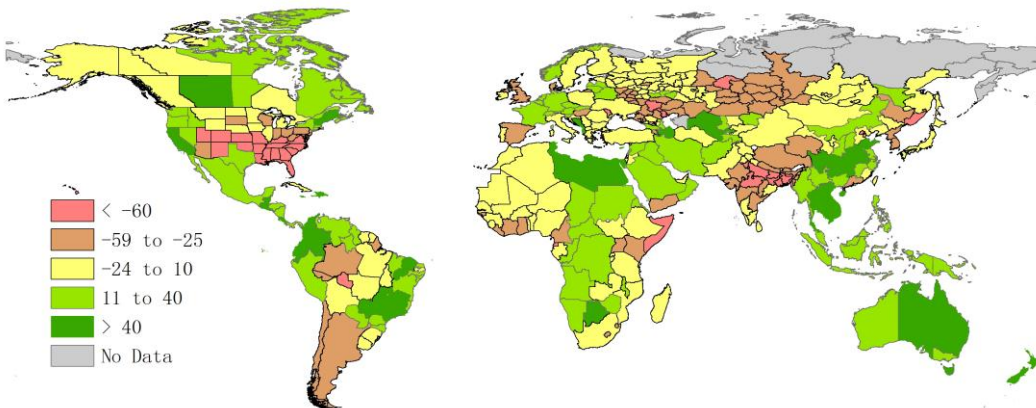
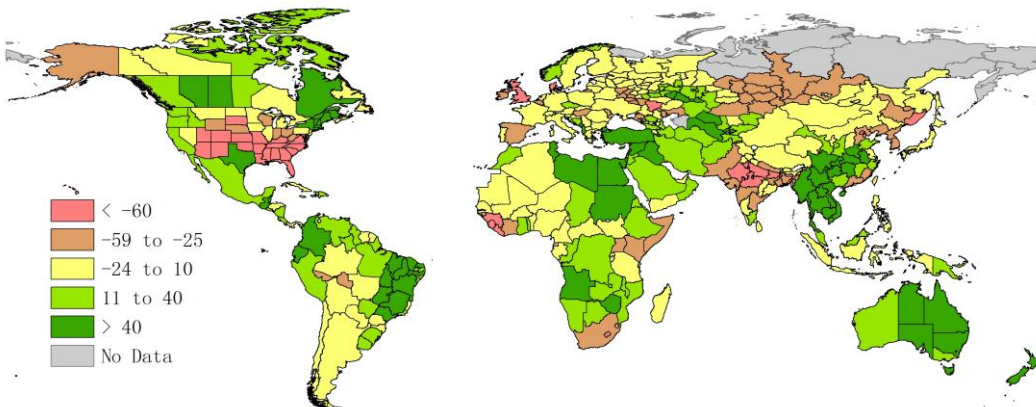


Figure D.2 October 2012-September 2013 temperature accumulation, for countries and sub-national units (°C)

a. 2013 Temperature departure from the five-year average



b. 2013 Temperature departure from the twelve-year average



c. Temperature trend for 2001-2013 (refer to figure B.1c for details)

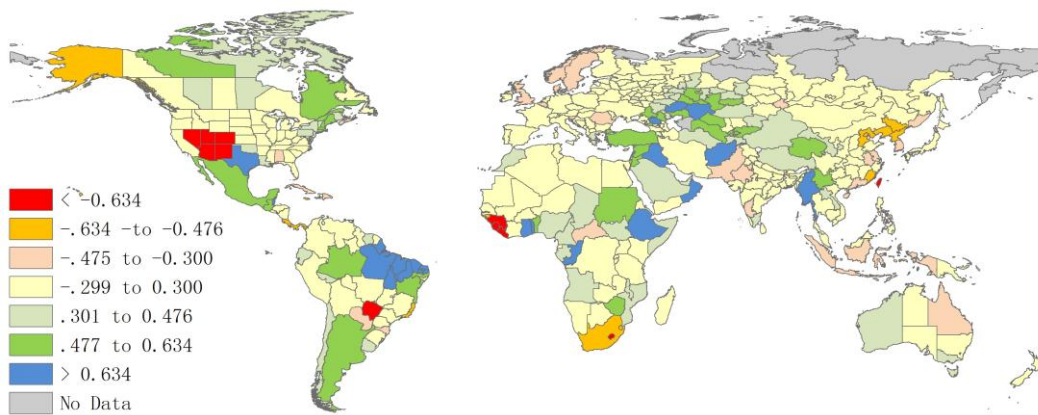
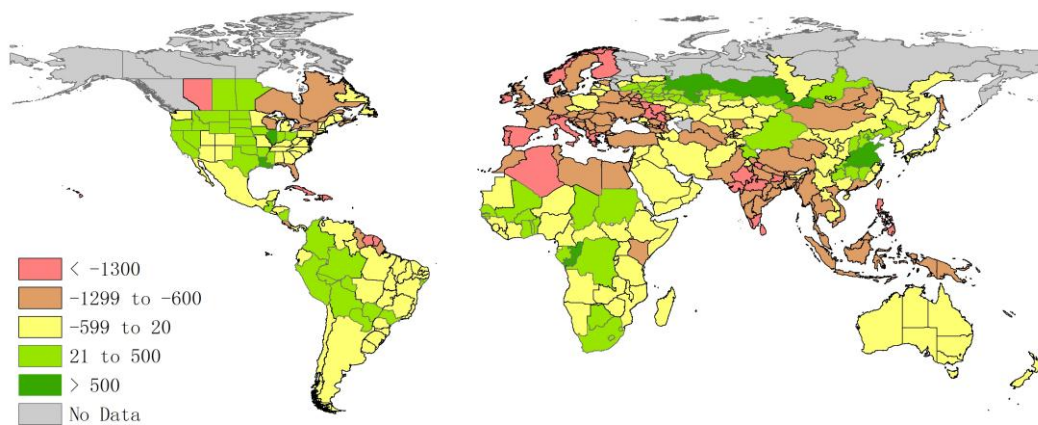
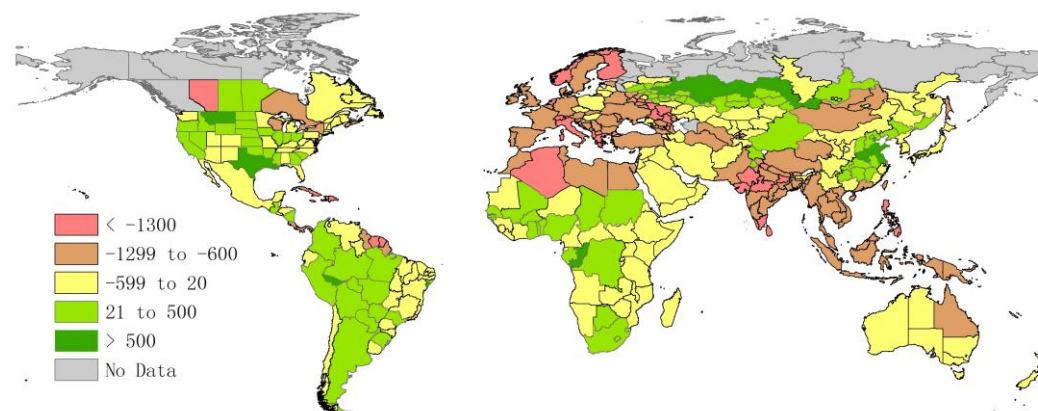


Figure D.3 October 2012-September 2013 accumulated PAR, for countries and sub-national units (W/m^2)

a. 2013 accumulated PAR departure from the five-year average



b. 2013 accumulated PAR departure from the twelve-year average



c. Accumulated PAR trend for 2001-2013 (Refer to figure B.1c for details)

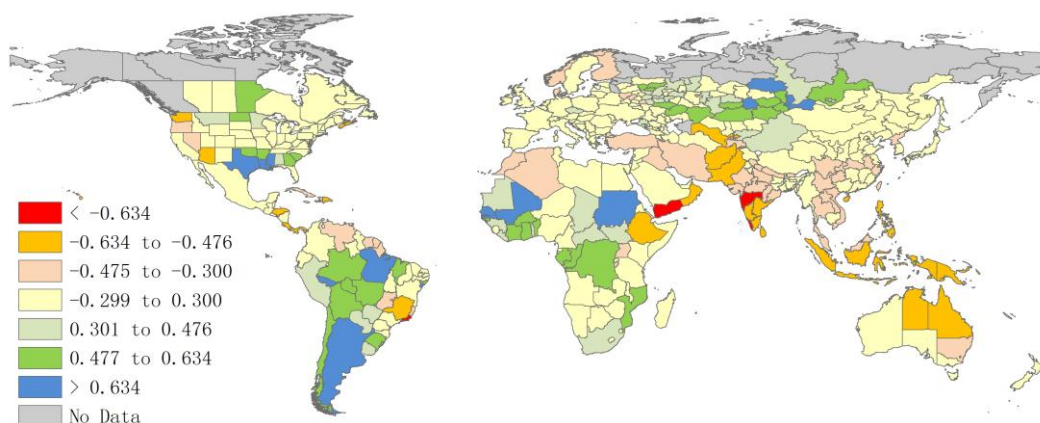
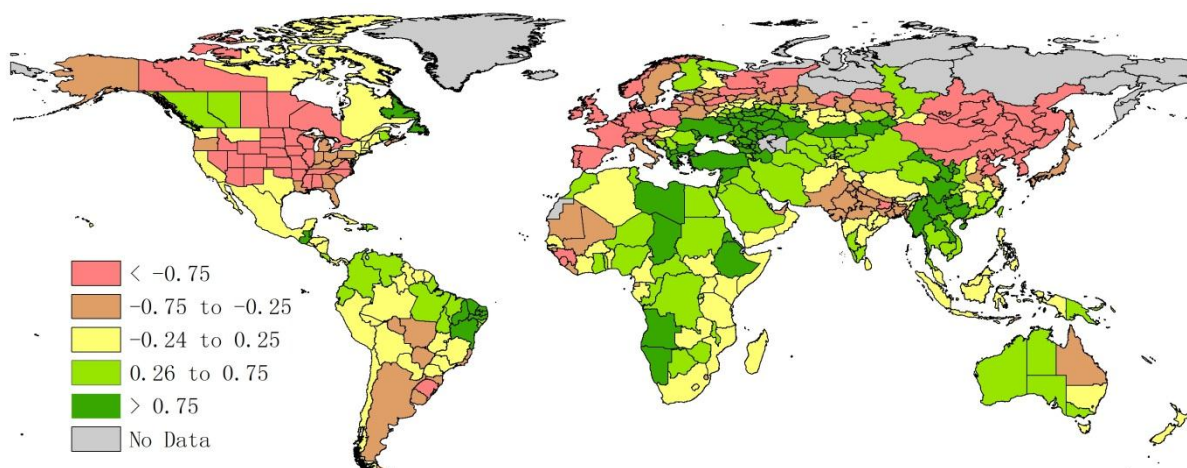
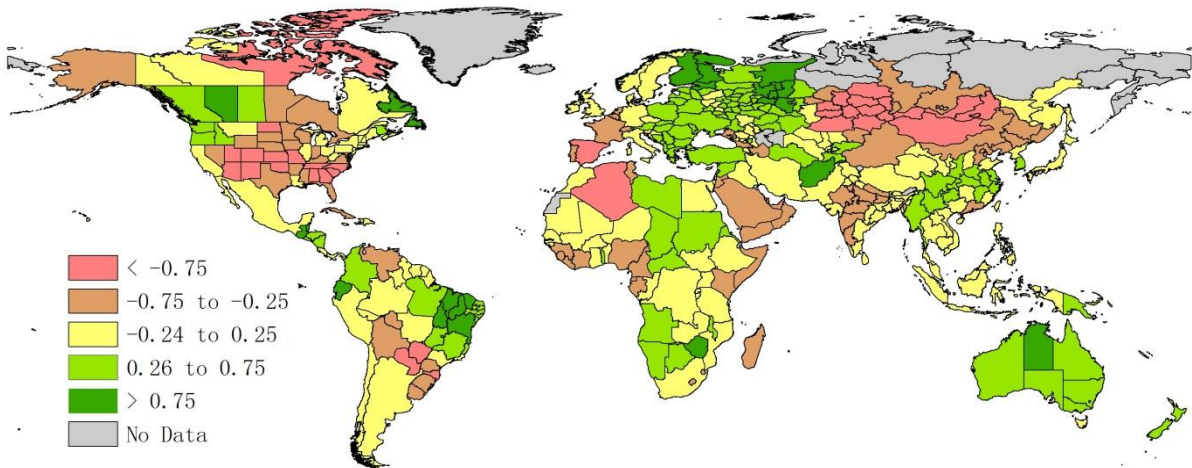


Figure D.4 Temperature and rainfall anomaly indices, for countries and sub-national units

a. Average temperature index anomaly, January-June (°C)



b. Average temperature index anomaly, April-September 2013 (°C)



c. Average rainfall index anomaly, April – September 2013 (percent)

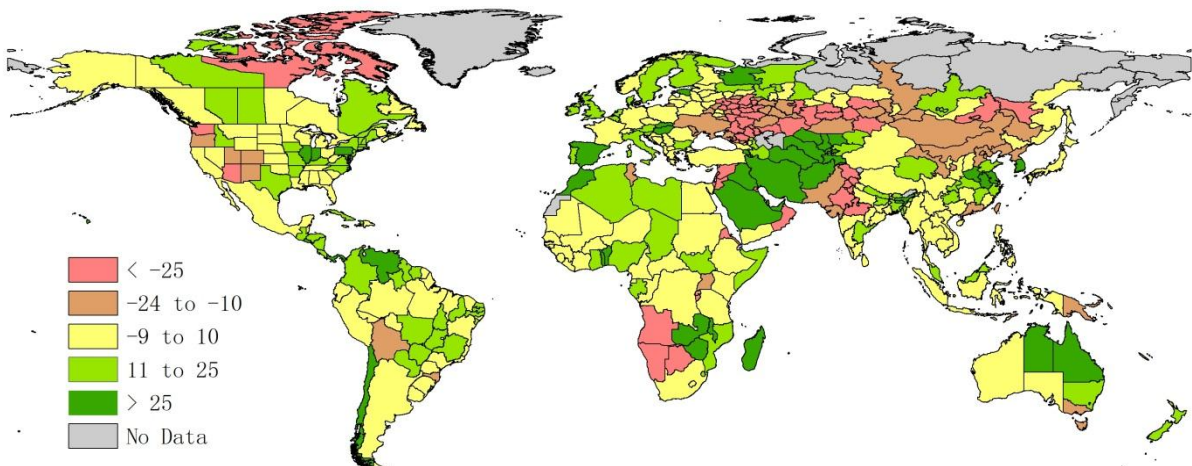


Table D.1 2013 Yield (maize, rice, soybean, wheat), and percent difference with 2012, by country (tons/ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|---------------------------|-------|-------|------|------|---------|-------|-------|------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| AFRICA | | | | | | | | |
| Egypt | 8.47 | -9.3 | 9.64 | -0.7 | 3.17 | -1.2 | 6.27 | -3.8 |
| Ethiopia | 2.78 | -7.8 | 2.97 | 2.3 | 1.70 | -8.8 | 1.98 | -2.6 |
| Nigeria | 1.78 | -1.9 | 1.79 | -0.8 | 0.97 | -5.5 | 1.41 | 26.2 |
| S-Africa | 3.64 | -5.3 | | | 1.70 | -0.0 | 3.17 | 5.1 |
| WEST ASIA | | | | | | | | |
| Iran | 7.03 | 3.5 | 5.00 | 0.0 | 2.47 | -1.3 | 1.94 | -1.7 |
| Turkey | 7.26 | -1.7 | 8.12 | 10.5 | 3.76 | 2.9 | 2.84 | 6.4 |
| Central Asia | | | | | | | | |
| Kazakhstan | 3.05 | 175.7 | 2.99 | 30.6 | 1.97 | -2.8 | 1.38 | 40.1 |
| Uzbekistan | 6.45 | 14.5 | 2.53 | 41.2 | | | | |
| EAST ASIA | | | | | | | | |
| China | 5.94 | 0.7 | 6.04 | 0.4 | 1.86 | 0.1 | 4.13 | -0.1 |
| SOUTH ASIA | | | | | | | | |
| Bangladesh | 6.05 | 0.8 | 3.60 | 23.0 | 1.53 | 3.8 | 2.59 | 0.5 |
| India | 2.47 | 3.0 | 3.61 | 4.1 | 1.13 | 6.2 | 3.08 | -2.9 |
| Pakistan | 3.92 | 0.8 | 3.55 | 2.0 | | | 2.81 | 3.7 |
| SE ASIA | | | | | | | | |
| Cambodia | 2.32 | -3.1 | 2.81 | -6.4 | 1.61 | 0.7 | | |
| Indonesia | 4.64 | -5.1 | 4.96 | -3.4 | 1.43 | -4.9 | | |
| Myanmar | 3.77 | -4.5 | 3.73 | -7.9 | 1.36 | 10.9 | 1.80 | 0.1 |
| Philippines | 2.80 | -2.0 | 3.67 | -4.6 | | | | |
| Thailand | 4.37 | -1.9 | 2.80 | -6.8 | 1.88 | 4.3 | | |
| Vietnam | 4.30 | 0.2 | 5.60 | -0.5 | 1.46 | 0.7 | | |
| EUROPE- RUSSIA | | | | | | | | |
| France | 9.21 | 1.4 | 5.93 | -0.6 | 2.86 | 3.1 | 7.36 | -3.2 |
| Germany | 10.20 | 4.1 | | | | | 7.37 | 0.6 |
| Poland | 6.23 | -0.5 | | | | | 4.29 | 4.0 |
| Romania | 3.58 | 63.6 | 4.84 | 7.6 | 1.64 | 23.1 | 3.16 | 18.7 |
| U. Kingdom | | | | | | | 8.10 | 21.6 |
| Ukraine | 4.48 | -6.5 | 5.96 | -3.9 | 1.85 | 8.6 | 3.10 | 10.7 |
| W. Russia | 4.29 | 1.1 | 5.29 | -3.7 | 1.39 | 5.8 | 2.00 | 12.9 |
| N. AMERICA | | | | | | | | |
| Canada | 8.61 | 3.0 | | | 2.84 | -2.7 | 2.58 | -9.4 |
| Mexico | 2.96 | -7.3 | 5.35 | -4.6 | 1.52 | -12.6 | 5.50 | -0.8 |
| United States | 8.30 | 5.4 | 8.86 | 5.0 | 2.77 | 1.4 | 3.12 | -0.4 |
| S. AMERICA | | | | | | | | |
| Argentina | 5.84 | -16.0 | 6.73 | 1.0 | 2.59 | -11.5 | 3.78 | 8.6 |
| Brazil | 3.95 | -16.5 | 5.15 | 7.1 | 2.51 | -4.1 | 2.56 | 10.6 |
| OCEANIA | | | | | | | | |
| Australia | 6.11 | -5.3 | 9.18 | 3.0 | 2.06 | -7.6 | 2.00 | -7.9 |

Note: Δ% indicates percent difference with 2012.

Table D.2 2013 harvested area (maize, rice, soybean, wheat), by country (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|---------------------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| AFRICA | | | | | | | | |
| Egypt | 819 | 9.2 | 632 | -5.7 | 10 | -2.3 | 1373 | 1.7 |
| Ethiopia | 1988 | -1.2 | 30 | -1.3 | 15 | -21.0 | 1461 | 1.6 |
| Nigeria | 5235 | 0.7 | 2632 | -2.0 | 524 | 19.2 | 95 | 5.0 |
| S-Africa | 3139 | -3.4 | | | 459 | -8.2 | 600 | 0.8 |
| WEST ASIA | | | | | | | | |
| Iran | 179 | -0.6 | 470 | -2.1 | 75 | -6.3 | 7040 | 0.6 |
| Turkey | 606 | -2.7 | 110 | -8.5 | 29 | -8.2 | 7380 | -2.0 |
| Central Asia | | | | | | | | |
| Kazakhstan | 97 | -0.2 | 95 | -2.0 | 77 | -8.3 | 13014 | -3.3 |
| Uzbekistan | 36 | -2.6 | 47 | -29.1 | | | 1399 | 0.2 |
| EAST ASIA | | | | | | | | |
| China | 34616 | 1.6 | 34287 | 0.2 | 7165 | -3.7 | 25839 | -0.1 |
| SOUTH ASIA | | | | | | | | |
| Bangladesh | 253 | -25.7 | 11798 | 0.8 | 42 | -0.7 | 387 | -3.3 |
| India | 8668 | -1.3 | 43029 | -2.2 | 10490 | -2.9 | 29463 | -1.3 |
| Pakistan | 997 | 9.5 | 2619 | -3.0 | | | 8658 | -0.1 |
| SE ASIA | | | | | | | | |
| Cambodia | 325 | -1.5 | 3218 | 3.8 | 73 | -2.9 | | |
| Indonesia | 3984 | 0.6 | 13575 | 1.0 | 594 | 4.7 | | |
| Myanmar | 396 | 4.1 | 8312 | 2.0 | 162 | -2.8 | 99 | -3.7 |
| Philippines | 2569 | -0.9 | 4734 | 0.9 | | | | |
| Thailand | 1101 | 1.9 | 12940 | 2.7 | 95 | -5.1 | | |
| Vietnam | 1120 | 0.1 | 7687 | -0.9 | 151 | 25.1 | | |
| EUROPE- RUSSIA | | | | | | | | |
| France | 1712 | -0.4 | 21 | 2.7 | 40 | 5.4 | 5323 | 0.4 |
| Germany | 499 | -2.2 | | | | | 3068 | 0.2 |
| Poland | 439 | -19.4 | | | | | 2094 | 0.2 |
| Romania | 2468 | -9.3 | 12 | 6.0 | 75 | -3.9 | 1969 | -1.2 |
| U. Kingdom | | | | | | | 1760 | -11.6 |
| Ukraine | 4883 | 11.7 | 28 | 7.4 | 1261 | -10.7 | 6144 | 9.1 |
| Russia | 1770 | -8.6 | 199 | 4.1 | 1281 | -6.8 | 23466 | 10.3 |
| N. AMERICA | | | | | | | | |
| Canada | 1301 | -7.1 | | | 1605 | -3.8 | 10147 | 6.8 |
| Mexico | 6714 | -3.0 | 33 | 3.5 | 149 | 4.6 | 535 | 31.4 |
| USA. | 35419 | 1.9 | 984 | -8.2 | 29980 | -0.1 | 18608 | -5.5 |
| S. AMERICA | | | | | | | | |
| Argentina | 4237 | 14.6 | 246 | 4.7 | 19363 | 10.2 | 3320 | 5.1 |
| Brazil | 16058 | 6.6 | 2416 | 1.9 | 27939 | 11.5 | 1966 | 4.0 |
| OCEANIA | | | | | | | | |
| Australia | 66 | -5.4 | 89 | -13.3 | 28 | -27.2 | 14460 | 4.0 |
| Sub total | 141692 | 1.6 | 150244 | -0.2 | 101683 | 3.9 | 189667 | 1.1 |
| other countries | 40577 | 8.1 | 13192 | 2.3 | 7239 | -17.3 | 28530 | -1.6 |
| World | 182269 | 3.0 | 163436 | 0.0 | 108922 | 2.2 | 218197 | 0.7 |

Note: Δ% indicates percent difference with 2012. The world areas for the four crops are extrapolated from FAO statistics.

Table D.3 Environmental indices by country: Accumulated rainfall (mm), October-September

| | 2013 rainfall (mm) | Twelve-year average (2001-12) | Five-year average (2008-12) | 2001-13 normalized trend | Coefficient of correlation | Significance level of trend | Difference between 2013 and twelve-year average | Difference between 2013 and five-year average |
|--------------|-----------------------|-------------------------------------|-----------------------------------|--------------------------------|-------------------------------|--------------------------------|---|---|
| Argentina | 321 | 283 | 249 | -19.753 | -0.395 | | 38 | 72 |
| Australia | 159 | 149 | 167 | 22.564 | 0.521 | * | 10 | -8 |
| Bangladesh | 655 | 757 | 783 | 2.741 | 0.117 | | -102 | -128 |
| Brazil | 375 | 383 | 384 | 0.953 | 0.121 | | -8 | -9 |
| Cambodia | 800 | 638 | 646 | 11.451 | 0.302 | | 162 | 154 |
| Canada | 104 | 123 | 120 | -6.618 | -0.217 | | -19 | -16 |
| China | 308 | 273 | 280 | 8.883 | 0.46 | | 35 | 28 |
| Egypt | 14 | 9 | 5 | -75.444 | -0.529 | * | 5 | 9 |
| Ethiopia | 370 | 339 | 331 | 2.968 | 0.11 | | 31 | 39 |
| France | 385 | 292 | 278 | -0.942 | -0.02 | | 93 | 107 |
| Germany | 231 | 251 | 247 | -9.331 | -0.275 | | -20 | -16 |
| India | 456 | 453 | 473 | 15.435 | 0.621 | * | 3 | -17 |
| Indonesia | 921 | 866 | 928 | 16.151 | 0.778 | ** | 55 | -7 |
| Iran | 101 | 110 | 90 | -27.227 | -0.504 | * | -9 | 11 |
| Kazakhstan | 97 | 66 | 60 | -3.773 | -0.078 | | 31 | 37 |
| Mexico | 293 | 281 | 279 | 3 | 0.146 | | 12 | 14 |
| Myanmar | 776 | 677 | 666 | 0.708 | 0.039 | | 99 | 110 |
| Nigeria | 365 | 409 | 415 | -2.482 | -0.136 | | -44 | -50 |
| Pakistan | 153 | 196 | 193 | -1.429 | -0.022 | | -43 | -40 |
| Philippines | 988 | 872 | 944 | 14.505 | 0.456 | | 116 | 44 |
| Poland | 147 | 145 | 150 | 0.041 | 0.001 | | 2 | -3 |
| Romania | 113 | 126 | 132 | 2.357 | 0.058 | | -13 | -19 |
| Russia | 120 | 92 | 93 | 14.891 | 0.431 | | 28 | 27 |
| South Africa | 148 | 117 | 124 | 9.325 | 0.143 | | 31 | 24 |
| Thailand | 576 | 539 | 563 | 10.581 | 0.47 | | 37 | 13 |
| Turkey | 138 | 186 | 189 | -8.134 | -0.206 | | -48 | -51 |
| UK | 260 | 290 | 290 | -5.938 | -0.225 | | -30 | -30 |
| USA | 242 | 235 | 228 | -8.617 | -0.432 | | 7 | 14 |
| Ukraine | 173 | 119 | 119 | 9.353 | 0.172 | | 54 | 54 |
| Uzbekistan | 50 | 85 | 81 | -25.6 | -0.3 | | -35 | -31 |
| Viet Nam | 780 | 662 | 701 | 13.822 | 0.409 | | 118 | 79 |

Note: Table displays rainfall accumulation (mm) between October 2012 and September 2013. The normalized trend is the 2001-2013 trend normalized by dividing it by the twelve-year average. Significance level of the trend is * for $p < 0.05$ and ** for $p < 0.01$. See also figures D.1a –c for a graphical representation of some of the variables in this table.

Table D.4 Environmental indices by country: Temperature (°C), October-September accumulation

| | 2013 temperature (°C) | Twelve-year average (2001-12) | Five-year average (2008-12) | 2001-13 normalized trend | Coefficient of correlation | Significance level of trend | Difference between 2013 and twelve-year average | Difference between 2013 and five-year average |
|---------------------|-----------------------------|-------------------------------------|-----------------------------------|--------------------------------|----------------------------------|-----------------------------------|---|---|
| Argentina | 1284 | 1280 | 1312 | 4.11 | 0.55 | * | 4 | -28 |
| Australia | 940 | 899 | 891 | -0.018 | -0.003 | | 41 | 49 |
| Bangladesh | 2359 | 2417 | 2423 | -0.416 | -0.167 | | -58 | -64 |
| Brazil | 1844 | 1807 | 1827 | 1.714 | 0.416 | | 37 | 17 |
| Cambodia | 2592 | 2527 | 2522 | 0.519 | 0.151 | | 65 | 70 |
| Canada | 197 | 156 | 161 | 13.795 | 0.316 | | 41 | 36 |
| China | 1041 | 1022 | 1016 | -0.762 | -0.128 | | 19 | 25 |
| Egypt | 2222 | 2166 | 2174 | -0.084 | -0.016 | | 56 | 48 |
| Ethiopia | 1435 | 1406 | 1427 | 3.764 | 0.836 | ** | 29 | 8 |
| France | 836 | 841 | 818 | -3.578 | -0.218 | | -5 | 18 |
| Germany | 681 | 682 | 661 | -3.849 | -0.227 | | -1 | 20 |
| India | 2036 | 2080 | 2083 | -0.638 | -0.181 | | -44 | -47 |
| Indonesia | 2249 | 2241 | 2230 | -0.852 | -0.441 | | 8 | 19 |
| Iran | 955 | 921 | 939 | 2.826 | 0.21 | | 34 | 16 |
| Kazakhstan | 470 | 472 | 490 | 11.083 | 0.562 | * | -2 | -20 |
| Mexico | 1456 | 1430 | 1438 | 1.951 | 0.578 | * | 26 | 18 |
| Myanmar | 1970 | 1913 | 1933 | 3.065 | 0.654 | ** | 57 | 37 |
| Nigeria | 2242 | 2243 | 2246 | 1.192 | 0.322 | | -1 | -4 |
| Pakistan | 1955 | 1991 | 1979 | -1.785 | -0.398 | | -36 | -24 |
| Philippines | 2342 | 2333 | 2324 | -0.219 | -0.125 | | 9 | 18 |
| Poland | 429 | 448 | 435 | -2.658 | -0.164 | | -19 | -6 |
| Romania | 328 | 333 | 325 | -8.24 | -0.303 | | -5 | 3 |
| Russia | 304 | 316 | 326 | 9.81 | 0.446 | | -12 | -22 |
| South Africa | 785 | 811 | 787 | -6.234 | -0.592 | * | -26 | -2 |
| Thailand | 2377 | 2305 | 2295 | 0.548 | 0.139 | | 72 | 82 |
| Turkey | 860 | 806 | 854 | 11.128 | 0.593 | * | 54 | 6 |
| UK | 517 | 578 | 558 | -6.839 | -0.369 | | -61 | -41 |
| USA | 833 | 890 | 887 | -0.345 | -0.037 | | -57 | -54 |
| Ukraine | 361 | 378 | 380 | 2.405 | 0.149 | | -17 | -19 |
| Uzbekistan | 1400 | 1338 | 1354 | 4.681 | 0.576 | * | 62 | 46 |
| Viet Nam | 2197 | 2121 | 2118 | 0.841 | 0.208 | | 76 | 79 |

Note: Table displays temperature accumulation (°C) over a threshold of 5.0 °C between October 2012 and September 2013. The normalized trend is the 2001-2013 trend normalized by dividing it by the twelve-year average. Significance level of the trend is * for $p < 0.05$ and ** for $p < 0.01$. See also figures D.2a – c for a graphical representation of some of the variables in this table.

Table D.5 Environmental indices by country: PAR (W/m^2), October-September accumulation

| | 2013 PAR (W/m^2) | Twelve-year average (2001-12) | Five-year average (2008-12) | 2001-13 normalized trend | Coefficient of correlation | Significance level of trend | Difference between 2013 and twelve-year average | Difference between 2013 and five-year average |
|---------------------|-------------------------|-------------------------------------|-----------------------------------|--------------------------------|-------------------------------|--------------------------------|---|---|
| Argentina | 10125 | 9984 | 10273 | 6.897 | 0.786 | ** | 141 | -148 |
| Australia | 8079 | 8482 | 8352 | -3.085 | -0.408 | | -403 | -273 |
| Bangladesh | 9911 | 11134 | 11198 | -2.685 | -0.299 | | -1223 | -1287 |
| Brazil | 9745 | 9780 | 9855 | 1.116 | 0.386 | | -35 | -110 |
| Cambodia | 11126 | 11742 | 11713 | -1.888 | -0.272 | | -616 | -587 |
| Canada | 3889 | 4935 | 5034 | -3.322 | -0.19 | | -1046 | -1145 |
| China | 6907 | 6953 | 6913 | -1.463 | -0.46 | | -46 | -6 |
| Egypt | 14185 | 14914 | 15035 | -0.373 | -0.087 | | -729 | -850 |
| Ethiopia | 10075 | 10606 | 10546 | -3.402 | -0.562 | * | -531 | -471 |
| France | 7255 | 8300 | 8501 | 1.506 | 0.111 | | -1045 | -1246 |
| Germany | 5989 | 6624 | 6726 | 2.904 | 0.196 | | -635 | -737 |
| India | 9079 | 10305 | 10317 | -4.287 | -0.466 | | -1226 | -1238 |
| Indonesia | 10310 | 11313 | 11262 | -3.572 | -0.551 | * | -1003 | -952 |
| Iran | 8800 | 9307 | 9274 | -3.108 | -0.391 | | -507 | -474 |
| Kazakhstan | 6448 | 6449 | 6600 | 5.601 | 0.574 | * | -1 | -152 |
| Mexico | 9177 | 9387 | 9478 | 1.296 | 0.273 | | -210 | -301 |
| Myanmar | 8853 | 9681 | 9726 | -2.019 | -0.259 | | -828 | -873 |
| Nigeria | 10765 | 10714 | 10746 | 0.73 | 0.247 | | 51 | 19 |
| Pakistan | 11160 | 12096 | 12071 | -3.864 | -0.547 | * | -936 | -911 |
| Philippines | 10445 | 11926 | 11777 | -5.669 | -0.486 | * | -1481 | -1332 |
| Poland | 4493 | 5003 | 5025 | 2.401 | 0.141 | | -510 | -532 |
| Romania | 3870 | 4785 | 4906 | 2.065 | 0.099 | | -915 | -1036 |
| Russia | 4991 | 5084 | 5145 | 2.273 | 0.323 | | -93 | -154 |
| South Africa | 7202 | 7085 | 7086 | 2.509 | 0.302 | | 117 | 116 |
| Thailand | 10502 | 11231 | 11182 | -2.968 | -0.406 | | -729 | -680 |
| Turkey | 9031 | 9713 | 9681 | -2.656 | -0.368 | | -682 | -650 |
| UK | 4856 | 6085 | 6135 | -2.795 | -0.165 | | -1229 | -1279 |
| USA | 8064 | 8067 | 8161 | 2.723 | 0.645 | ** | -3 | -97 |
| Ukraine | 3902 | 4925 | 4984 | -0.391 | -0.018 | | -1023 | -1082 |
| Uzbekistan | 10724 | 11447 | 11377 | -3.258 | -0.517 | * | -723 | -653 |
| Viet Nam | 9423 | 10390 | 10254 | -4.652 | -0.471 | | -967 | -831 |

Note: Table displays accumulated photosynthetically active radiation (PAR) (W/m^2) over the growing season(s) between October 2012 and September 2013. The normalized trend is the 2001-2013 trend normalized by dividing it by the twelve-year average. Significance level of the trend is * for $p \leq 0.05$ and ** for $p \leq 0.01$. See also figures D.3a –c for a graphical representation of some of the variables in this table.

Table D.6 Kazakhstan, 2013 yield (maize, rice, soybean, wheat), by province (tons/ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|---------------------------|-------|----|------|----|---------|----|-------|------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Akmolinskaya | | | | | | | 1.12 | 61.3 |
| Karagandinskaya | | | | | | | 0.87 | 32.8 |
| Kustanayskaya | | | | | | | 1.22 | 99.2 |
| Pavlodarskaya | | | | | | | 0.57 | 50.8 |
| Severo-kazachstanskaya | | | | | | | 1.62 | 40.9 |
| Vostochno-kazachstanskaya | | | | | | | 1.08 | -0.9 |
| Zapadno-kazachstanskaya | | | | | | | 0.77 | 31.4 |

Note: Δ% is percent difference with 2012.

Table D.7 Kazakhstan, 2013 area under production (maize, rice, soybean, wheat), by province (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|---------------------------|-------|----|------|----|---------|----|--------------|--------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Akmolinskaya | | | | | | | 3767 | 26.4 |
| Karagandinskaya | | | | | | | 214 | 2.1 |
| Kustanayskaya | | | | | | | 2104 | 3.8 |
| Pavlodarskaya | | | | | | | 963 | -38.8 |
| Severo-kazachstanskaya | | | | | | | 4832 | -10.1 |
| Vostochno-kazachstanskaya | | | | | | | 451 | 4.2 |
| Zapadno-kazachstanskaya | | | | | | | 47 | 13.6 |
| Sub total | | | | | | | 12378 | |
| Other provinces | | | | | | | 636 | |
| Kazakhstan | | | | | | | 13014 | -3.34 |

Note: Δ% is percent difference with 2012.

Table D.8 India, 2013 yield, by state (tons/ha)

| | Maize | | Rice (paddy) | | Soybean | | Wheat | |
|------------------|-------|-------|--------------|-------|---------|----|-------|------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Andhra Pradesh | 4.74 | 11.8 | 3.09 | -1.9 | | | | |
| Assam | 0.71 | -1.9 | 1.81 | 1.8 | | | 1.15 | 0.6 |
| Delhi | | | | | | | 4.26 | -2.1 |
| Goa | | | 2.52 | -2.3 | | | | |
| Gujarat | 1.58 | 3.6 | 2.00 | -6.6 | | | 3.08 | 2.2 |
| Haryana | 2.15 | -19.4 | 2.92 | -4.2 | | | 4.83 | -4.1 |
| Himachal Pradesh | 2.35 | -3.4 | 1.69 | -0.7 | | | 1.60 | -4.3 |
| Karnataka | 3.23 | 6.8 | 2.75 | -1.4 | | | 0.98 | 14.6 |
| Kerala | | | 2.59 | -5.3 | | | | |
| Maharashtra | 2.84 | 2.9 | 1.81 | -1.8 | | | 1.68 | 7.9 |
| Manipur | 1.83 | 3.5 | 2.55 | -3.4 | | | | |
| Meghalaya | 1.54 | 0.9 | 1.94 | -2.3 | | | | |
| Mizoram | | | 1.27 | -10.1 | | | | |
| Nagaland | 1.97 | 0.7 | 2.11 | 0.2 | | | | |
| Orissa | 2.32 | 12.6 | 1.54 | 5.9 | | | | |
| Punjab | 3.82 | -4.2 | 3.78 | 1.1 | | | 4.80 | -2.1 |
| Rajasthan | 1.70 | 6.6 | 1.95 | 3.4 | | | 3.05 | -3.8 |

| | Maize | | Rice (paddy) | | Soybean | | Wheat | |
|------------------------|-------|-------|--------------|-------|---------|----|-------|-------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Sikkim | 1.66 | -0.1 | 1.74 | 0.8 | | | | |
| Tamil Nadu | 5.32 | -12.0 | 3.48 | -11.2 | | | | |
| Tripura | | | 2.68 | -0.7 | | | | |
| West Bengal | 3.85 | 3.5 | 2.66 | -0.9 | | | 2.76 | -0.02 |
| Arunachal Pradesh | 1.45 | -1.7 | 1.99 | -3.7 | | | | |
| Bihar | 2.31 | -3.2 | 1.67 | -22.6 | | | 2.08 | -5.8 |
| Chhattisgarh | 1.74 | 5.0 | 1.63 | 2.1 | | | 1.18 | -3.7 |
| Dadra and Nagar Haveli | | | 1.77 | 0.7 | | | | |
| Jharkhand | 1.36 | -9.1 | 1.94 | -9.1 | | | 1.80 | -5.6 |
| Madhya Pradesh | 1.38 | -7.5 | 1.23 | -8.6 | | | 2.08 | -12.0 |
| Puducherry | | | 2.61 | 2.9 | | | | |
| Uttar Pradesh | 1.57 | -5.5 | 2.24 | -4.9 | | | 3.11 | 0.0 |
| Uttarakhand | 1.49 | 1.9 | 2.01 | -5.4 | | | 2.35 | -1.3 |

Note: Δ% is percent difference with 2012.

Table D.9 India, 2013 area under production, by state (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|-------------------|-------------|-------------|--------------|-------------|---------|----|--------------|-------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Andhra Pradesh | 804 | -6.9 | 4424 | 8.0 | | | | |
| Assam | 21 | -3.5 | 2554 | 0.7 | | | 49 | -7.4 |
| Delhi | | | | | | | 23 | 15.6 |
| Gujarat | 509 | -1.5 | 822 | -1.7 | | | 1313 | -2.9 |
| Haryana | 10 | 5.6 | 1240 | 0.4 | | | 2519 | -0.1 |
| Himachal Pradesh | 295 | 0.4 | | | | | 357 | 0.09 |
| Karnataka | 1319 | -2.3 | 1478 | 4.4 | | | 240 | 6.7 |
| Maharashtra | 886 | 0.6 | 1531 | -0.8 | | | 1075 | 27.5 |
| Manipur | 21 | 5.9 | 218 | -2.5 | | | | |
| Meghalaya | 17 | -0.2 | 109 | -0.3 | | | | |
| Nagaland | 68 | -0.07 | | | | | | |
| Orissa | 110 | 7.0 | 4115 | 2.8 | | | | |
| Punjab | 130 | 2.8 | 2825 | 0.2 | | | 3519 | -0.3 |
| Rajasthan | 1094 | 4.7 | | | | | 2707 | -7.8 |
| Sikkim | 40 | 0.3 | | | | | | |
| Tamil Nadu | 256 | -8.9 | 1905 | 0.05 | | | | |
| Tripura | | | 265 | -0.3 | | | | |
| West Bengal | 93 | -4.7 | 5189 | -4.5 | | | 316 | 0.2 |
| Arunachal Pradesh | 46 | -1.5 | | | | | | |
| Bihar | 660 | -2.2 | 3078 | -7.4 | | | 2123 | -0.9 |
| Chhattisgarh | 103 | -0.6 | 3738 | -0.9 | | | 110 | 1.1 |
| Jharkhand | 215 | -0.03 | 1095 | -25.5 | | | 128 | -19.6 |
| Madhya Pradesh | 847 | -1.9 | 1632 | -1.8 | | | 4615 | -5.6 |
| Uttar Pradesh | 771 | -2.1 | 5802 | -2.4 | | | 9684 | -0.5 |
| Uttarakhand | 28 | 0.7 | 285 | 1.7 | | | 374 | 1.4 |
| Sub total | 8343 | | 42305 | | | | 29152 | |
| Other states | 325 | | 724 | | | | 311 | |
| India | 8668 | -1.3 | 43029 | -2.2 | | | 29463 | -1.3 |

Note: Δ% is percent difference with 2012.

Table D.10 Canada, 2013 yield by province (tons/ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|--------------|-------|----|------|----|---------|----|-------|-------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Alberta | | | | | | | 2.41 | -14.3 |
| Manitoba | | | | | | | 2.29 | -19.8 |
| Saskatchewan | | | | | | | 2.68 | -4.9 |

Note: Δ% is percent difference with 2012.

Table D.11 Canada, 2013 area under production, by province (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|-----------------|-------|----|------|----|---------|----|--------------|------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Alberta | | | | | | | 3566 | 19.9 |
| Manitoba | | | | | | | 1344 | -2.3 |
| Saskatchewan | | | | | | | 4526 | 0.1 |
| Sub total | | | | | | | 9436 | |
| Other provinces | | | | | | | 711 | |
| Canada | | | | | | | 10147 | 6.8 |

Note: Δ% is percent difference with 2012.

Table D.12 United States, 2013 yield and percent difference with 2012, by state (tons/ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|--------------|-------|-------|------|-------|---------|-------|-------|----|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Arkansas | 6.50 | -41.8 | 8.42 | 24.0 | 2.42 | -16.2 | | |
| California | | | 9.06 | -6.1 | | | | |
| Idaho | | | | | | | | |
| Illinois | 8.51 | 29.2 | | | 2.98 | 2.9 | | |
| Indiana | 7.61 | 22.5 | | | 3.04 | 3.9 | | |
| Iowa | 10.05 | 16.9 | | | 3.29 | 9.8 | | |
| Kansas | 5.57 | -7.5 | | | 1.72 | 16.4 | | |
| Michigan | 7.12 | -14.6 | | | 3.09 | 6.9 | | |
| Minnesota | 9.41 | -9.1 | | | 2.96 | 2.2 | | |
| Missouri | 5.95 | 26.3 | 7.44 | 44.8 | 2.11 | 6.3 | | |
| Montana | | | | | | | | |
| Nebraska | 8.20 | -8.1 | | | 3.42 | 22.5 | | |
| North Dakota | 5.59 | -26.9 | | | 2.17 | -4.9 | | |
| Ohio | 7.64 | -1.1 | | | 3.24 | 6.9 | | |
| Oklahoma | | | | | | | | |
| Oregon | | | | | | | | |
| South Dakota | 5.93 | -6.5 | | | 2.12 | 5.0 | | |
| Texas | 4.52 | -44.6 | 8.43 | -22.0 | | -20.1 | | |
| Washington | | | | | | | | |
| Wisconsin | 10.12 | 33.3 | | | 3.31 | 18.8 | | |

Note: Δ% is percent difference with 2012.

Table D.13 United States, 2013 area under production, by state (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat* | |
|----------------------|--------------|------------|------------|-------------|--------------|-------------|--------------|-------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Arkansas | 386 | 37.3 | 469 | -10.1 | 1460 | 14.2 | 280 | 54.0 |
| California | | | 234 | 2.9 | | | 276 | 53.3 |
| Idaho | | | | | | | 535 | 6.7 |
| Illinois | 4823 | -2.7 | | | 3659 | 1.3 | 254 | -2.7 |
| Indiana | 2396 | -1.8 | | | 2067 | -0.6 | | |
| Iowa | 5351 | -3.5 | | | 3645 | -3.1 | | |
| Kansas | 1889 | 18.2 | | | 1463 | -5.1 | 3315 | -10.0 |
| Michigan | 1164 | 20.3 | | | 752 | -6.6 | 272 | 24.4 |
| Minnesota | 3477 | 3.1 | | | 2628 | -7.1 | 457 | -13.7 |
| Missouri | 1276 | -4.5 | 63 | -14.0 | 2226 | 4.6 | 355 | 27.1 |
| Montana | | | | | | | 2152 | -4.8 |
| Nebraska | 4383 | 19.0 | | | 1853 | -8.2 | 474 | -10.0 |
| North Dakota | 1450 | 3.5 | | | 1712 | -10.6 | 2712 | -13.6 |
| Ohio | 1593 | 7.8 | | | 1774 | -4.3 | 245 | 34.4 |
| Oklahoma | | | | | | | 1920 | 10.3 |
| Oregon | | | | | | | 376 | 6.0 |
| South Dakota | 2546 | 18.7 | | | 1875 | -1.7 | 805 | -10.8 |
| Texas | 950 | 51.5 | 65 | 19.7 | | | 776 | -36.1 |
| Washington | | | | | | | 895 | 1.7 |
| Wisconsin | 1151 | -13.8 | | | 592 | -14.0 | | |
| Sub total | 32835 | | 831 | | 25706 | | 16099 | |
| Other states | 2584 | | 153 | | 4274 | | 2509 | |
| United States | 35419 | 1.9 | 984 | -8.2 | 29980 | -0.1 | 18608 | -5.5 |

Note: Δ% is percent difference with 2012.

* Wheat area in the table includes areas of winter wheat, durum wheat, and spring wheat.

Table D.14 Argentina 2013 yield, by province (tons/ha)

| | Maize | | Rice (paddy) | | Soybean | | Wheat | |
|--------------|-------|-------|--------------|----|---------|-------|-------|-------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Buenos Aires | 6.71 | -17.5 | | | 2.54 | -19.6 | 2.89 | -17.5 |
| Córdoba | 5.69 | -54.3 | | | 2.22 | -18.8 | 9.17 | 65.3 |
| Santa Fe | 7.42 | -24.8 | | | 2.92 | -17.6 | 7.72 | 63.5 |

Note: Δ% is percent difference with 2012.

Table D.15 Argentina, 2013 area under production, by province (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|------------------|-------------|-------------|------|----|--------------|-------------|-------------|------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Buenos Aires | 1298 | 7.9 | | | 6537 | 12.8 | 2142 | 80.9 |
| Córdoba | 1369 | 58.1 | | | 5161 | 6.2 | 153 | -67.5 |
| Santa Fe | 626 | 13.1 | | | 3201 | 6.4 | 188 | -61.6 |
| Sub total | 3293 | | | | 14899 | | 2483 | |
| Other provinces | 944 | | | | 4464 | | 837 | |
| Argentina | 4237 | 14.6 | | | 19363 | 10.2 | 3320 | 5.1 |

Note: Δ% is percent difference with 2012.

Table D.16 Brazil, 2013 yield, by state (tons/ha)

| | Maize | | Rice (paddy) | | Soybean | | Wheat | |
|--------------------|-------|------|--------------|------|---------|------|-------|-------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Mato Grosso | 5.91 | 3.5 | 3.15 | -2.3 | 2.95 | -5.6 | | |
| Mato Grosso Do Sul | 4.91 | -5.7 | 6.18 | -2.7 | 2.91 | 14.9 | 0.92 | -41.6 |
| Minas Gerais | 5.82 | -2.8 | 1.94 | 0.08 | 2.93 | -2.1 | 3.30 | -10.8 |
| Parana | 5.77 | 5.2 | 5.29 | 4.2 | 3.35 | 36.5 | 1.75 | -35.3 |
| Rio Grande Do Sul | 5.28 | 87.3 | 7.46 | 1.1 | 2.70 | 93.8 | 2.59 | 37.1 |
| Santa Catarina | 6.87 | 25.6 | 6.82 | -7.3 | 3.04 | 27.5 | 3.00 | 43.3 |
| Sao Paulo | 5.25 | -5.0 | 5.30 | 21.8 | 3.15 | 13.8 | 2.52 | -18.8 |

Note: Δ% is percent difference with 2012.

Table D.17 Brazil, 2013 area, by state (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|---------------------|--------------|------------|-------------|------------|--------------|-------------|-------------|------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Goiás* | 1229 | 0.7 | 44 | -25.1 | 2937 | 10.2 | 4 | -58.5 |
| Mato Grosso* | 3417 | 24.7 | 158 | 11.4 | 7932 | 13.6 | | |
| Mato Grosso Do Sul* | 1538 | 23.6 | 16 | -6.8 | 1987 | 9.6 | 10 | -32.8 |
| Minas Gerais* | 1214 | -1.4 | 20 | -34.6 | 1151 | 11.9 | 36 | 66.7 |
| Parana* | 3033 | 1.1 | 33 | -5.4 | 4755 | 6.8 | 977 | 25.8 |
| Rio Grande Do Sul* | 984 | -2.3 | 1084 | 4.3 | 4728 | 13.8 | 1040 | 5.1 |
| Santa Catarina* | 484 | -6.5 | 150 | 0.8 | 521 | 15.5 | 73 | 9.0 |
| Sao Paulo* | 876 | 1.7 | 18 | -7.0 | 615 | 15.4 | 35 | -13.3 |
| Sub total | 12775 | | 1523 | | 24626 | | 2175 | |
| Other states | 3283 | | 893 | | 3313 | | -209 | |
| Brazil | 16058 | 6.6 | 2416 | 1.9 | 27939 | 11.5 | 1966 | 3.9 |

Source: Database aggregates, the Brazilian Institute of Geographic and Statistics (IBGE) (107).

Note: Δ% is percent difference with 2012.

Table D.18 Australia, 2013 yield, by state (tons/ha).

| | Maize | | Rice | | Soybean | | Wheat | |
|-------------------|-------|----|------|----|---------|----|-------|-------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Western Australia | | | | | | | 1.95 | -30.0 |
| South Australia | | | | | | | 1.97 | 7.4 |
| New South Wales | | | | | | | 2.38 | 17.5 |
| Victoria | | | | | | | 2.11 | -13.4 |

Note: Δ% is percent difference with 2012.

Table D.19 Australia, 2013 area, by state (thousand ha)

| | Maize | | Rice | | Soybean | | Wheat | |
|-------------------|-------|----|------|----|---------|----|--------------|------------|
| | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% | 2013 | Δ% |
| Western Australia | | | | | | | 4116 | 3.9 |
| South Australia | | | | | | | 2667 | 7.7 |
| New South Wales | | | | | | | 3997 | -5.1 |
| Victoria | | | | | | | 1973 | 22.9 |
| Sub total | | | | | | | 12754 | |
| Other states | | | | | | | 1706 | |
| Australia | | | | | | | 14460 | 4.0 |

Note: Δ% is percent difference with 2012.