CAMBRIDGE

Cambridge University Press
978-1-108-47983-7 — Climate Risk and Sustainable Water Management
Edited by Qiuhong Tang , Guoyong Leng
Index
More Information

Index

active layer thickness, 185–186
adaptation, 19, 23–24, 66, 179, 198, 212, 240, 317, 322–323, 328–329, 331, 374, 376, 387, 391–392
anthropogenic activities, 97, 110, 162, 220, 408, 414
AQUASTAT, 225
aquifer depth, xiv, 289–294, 299–300, 303, 305–309
ArcGIS, 70, 270, 300

Borg Multi-Objective Evolutionary Algorithm (MOEA), 424

central Florida, 114–115, 122
China, xiv, xvi, 3–4, 7–8, 11, 15, 21, 24, 32, 43, 47, 65, 75–77, 82, 84, 88–89, 92–95, 98, 101, 110, 112, 139, 141–142, 147, 151, 154–157, 160, 179–180, 188, 198, 201, 203, 208, 220–229, 232–236, 240–242, 244–246, 249, 259, 261, 315, 317, 323–324, 332–333, 345, 363, 376–377, 389, 401, 406–408, 410–417, 420, 427, 445, 447
climate change, xiv–xv, 3–6, 8, 11–12, 15, 18–19, 21–22, 24, 29, 31, 33–34, 37, 41–44, 47–48, 65–66, 73, 77, 82–84, 86, 89–91, 93, 96–99, 101, 111, 115, 139, 141, 160, 163, 170, 179–181, 183, 186–189, 191–192, 198, 200–201, 203, 206, 209, 211, 235–236, 240–241, 252, 257–259, 262, 284, 289, 315–322, 324, 326–329, 332–333, 362, 374–375, 377, 385–387, 389, 391–393, 401, 403–404, 406–407, 413, 417–418, 420–422, 425, 437, 439–440, 445–448, 459–460, 473
climate extremes, 198, 201, 203–204, 206–207, 210–212, 316, 407
CMIP5, 8, 24, 29, 31, 202–203, 386, 406, 425
coastal aquifers, xiv, 110–112, 114
coastal floods, 3–5, 16, 18, 23–24
consumptive water use, 221
CORDEX models, 467, 473, 478–479
correlation analysis, 300
crop growing season, 233
crop growth, 96, 99, 198, 201, 204–205, 207, 212, 220, 229–230
crop production, 50, 65, 198, 200–201, 206–209, 212, 379–380, 382, 389, 407, 465
crop yield, 82, 172, 198–200, 204–207, 209–212, 220, 383
cropping area, 200
cultivar choices, 211

desertification, 187–188, 471
domestic water use, 225, 234, 252, 256, 453
drought, 47–48, 50–51, 53–54, 58, 202, 206–209, 362

early warning systems, 22
Earth System Models, 203
east Africa, xiv, 47–49, 56, 59–60, 203
ecological zones, 160, 168
economic losses, 16, 30, 49, 315, 324
EM-DAT, 16, 24, 29–30, 48, 332
extreme heat, 201–202

flood damage, 5, 31, 325
flood management, 3, 5, 18–19, 21, 23–24, 333
flood resilience, 315, 318, 322, 329, 333
flood risk management, 19, 22, 24, 315, 317–318, 321, 323–327, 331–333
flood risks, 3, 5–6, 11, 13, 15, 18, 24, 31, 38, 43
floods, 3–8, 11–13, 15–16, 18–19, 21–24, 30, 33, 36, 41, 44, 289, 315–316, 320, 323, 367, 386, 391, 401
forecasting, 30–31, 362
freshwater, 33, 110–112, 114–115, 117–118, 121, 123–124, 127, 129, 133–135, 240, 242, 253, 261, 385, 388, 391, 401, 421, 445–446, 466
frozen ground, 179–181, 184–187, 192

GCMs, 8, 13–14, 41, 100, 201–203, 207, 245, 260–261, 329, 333, 386–387, 420, 426, 437, 439, 449–450, 458, 466
global hydrological model, 222
Global Precipitation Measurement (GPM), 274
global warming, 30, 42, 48, 50, 60, 82, 88, 99, 111, 139, 181, 186, 190, 192, 201–202, 209, 240, 320, 418

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-108-47983-7 — Climate Risk and Sustainable Water Management
Edited by Qiuhong Tang , Guoyong Leng
Index
More Information

GRACE TWSA, 466, 469
grain filling, 198, 204–206, 212
green and blue water uses, 220–226, 228–229, 234, 236
greenhouse gas emissions, 38, 179, 332
groundwater, 48, 90, 110–114, 116, 118–121, 123–124, 128–129, 131, 133–134, 189, 220, 245–250, 253, 255, 259, 261, 294, 346, 374–375, 377, 382, 386, 388–389, 391, 402, 421, 460, 465–466, 468–469, 471–472

Hong Kong, 3–7, 9, 16, 18–20, 22, 24
hydrological cycles, 170, 289
hydrological models, 13–14, 31, 37, 234, 245, 247, 366, 403, 420–421
hydrological projections, xiv, 13, 420–421, 440

integrated modelling framework, 315, 317–318, 327, 330, 333
IPCC, 13, 29, 31, 65, 98, 202–203, 241, 316, 319–320, 327, 329, 331–332, 387
irrigation, 48, 116, 199, 208, 211, 220–226, 228–229, 232–236, 240–241, 245–246, 248, 250–251, 256–257, 259–260, 262, 308, 345, 378, 380, 382, 387, 390, 420–421, 446–449, 451, 453–454, 456, 458, 465, 469, 479
ISI-MIP, 14, 24, 245, 450

Lancang-Mekong River Basin (LMRB), 32
land use and land cover, 98, 120, 162, 166
landslide, xiii–xiv, 6, 91, 161, 267–269, 271–274, 277–279, 281–285, 316

machine learning, 90, 210, 330, 342, 353, 363–366
Mann-Kendall trend test, 7
mitigation, 3, 5, 19, 21–22, 65, 134, 198, 240, 267–268, 316–317, 321, 323, 325, 329–333, 392, 447–448, 451, 456–457, 460, 471
model calibration, xiv, 39, 77, 130, 420–421, 438, 440
MOPEX watersheds, 408
multi-objective calibration, 420, 428–429, 440

Nash-Sutcliffe efficiency, 13, 425–426
NDVI, 69, 160–164, 168, 170, 173, 291, 298
Nepal, xiv, 160–170, 172–173

Palmer drought severity index, 207–208
Pearl River Delta, 3–4, 24
permafrost, 179–181, 183–192
planting dates, 211
precipitation elasticity, xiv, 401–403, 405–407, 409, 414, 416–417
precipitation extremes, 3, 5–8, 11–12, 14, 19, 21
precipitation regimes, 6, 12, 112, 375

rainfall erosivity, 67, 86, 97–99, 189
rainfall thresholds, 267–269, 273–274, 277–279, 281, 284–285
rainwater harvesting, xiv, 221, 235–236, 374–377, 379–382, 384–393
RCP2.6, 9, 11, 14–15, 204, 245, 251, 253–257, 259–260
RCP4.5, 29, 34, 41, 204, 465, 468
RCP8.5, 8–9, 11, 14–15, 17–18, 38, 41, 204, 208, 245, 251, 253, 255–257, 259–260
regression analysis, 300
renewable water resources, 220, 246, 248–249, 390, 450, 465, 479
return period, 5–7, 11–13, 19, 22
RUSLE, 65–66, 70, 76–77, 83

saltwater intrusion, xiii–xiv, 110–114, 116, 121–124, 126, 129, 133–134, 391
sea-level rise, 110–112, 114, 116, 118–119, 121, 123, 130, 133–134, 318, 325, 329, 331–332
SEAWAT, 114, 117
shared socio-economic pathway, 245
soil erosion, xiv, 65, 76, 82, 86–88, 92–94, 96–101, 160, 179, 188–190, 192, 375, 382–383
South-to-North water diversion, xiv, 240–241, 447
SPI, 29, 34, 37–38, 206, 209–210, 352, 363
Standardized Precipitation-Evapotranspiration Index (SPEI), 48
storm surge, xiii, 3–5, 15–16, 18, 21–24, 29, 110–111, 114, 116, 118–119, 124–126, 130–131, 133, 316, 331
susceptibility, 67, 90, 267–270, 273–274, 318

Tibetan Plateau, xiv, 37, 44, 179, 181, 185, 188, 190–191, 193, 240, 281, 447

uncertainty, xiv–xv, 11, 13, 15, 24, 31, 41, 67, 130, 133–134, 142, 233, 237, 259, 317–318, 326–327, 329, 333, 376, 385, 387, 391, 401, 406, 409, 420–421, 427, 430, 432–433, 436–440, 458, 466, 472–474, 476, 479–480
urban flood, xiv, 19, 21, 23, 315–322, 324, 327–333, 345, 375
urban heat island, 139
urban rainfall island, 139
urbanization, xiv, 4, 18–19, 23, 48, 100, 139, 141–143, 145, 149, 151–152, 154–156, 161, 199, 220, 234, 315–319, 321, 323–327, 329, 331–332, 377, 385, 407, 414

vegetation dynamics, xiv, 160–162, 164
VIC model, 13, 35, 39, 44, 422–423, 426, 429, 436, 440

water demand, 47, 110–112, 210, 221, 225, 233–235, 248, 251–252, 256–258, 374–375, 377, 383, 385–387, 389–390, 392–393, 445–456, 458–460, 465, 479
water erosion, 65, 77, 82–84, 93, 97, 100
water erosion vulnerability, xiv, 65–66, 70, 72–73, 75, 77

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-108-47983-7 — Climate Risk and Sustainable Water Management
Edited by Qiuhong Tang , Guoyong Leng
Index
More Information

water management, xiii–xv, 20, 140, 221–222, 236, 262, 317, 322, 326, 333, 342, 344, 346–347, 350, 355–356, 360–362, 364, 367–368, 376, 385, 387, 390–391, 401, 445, 460, 466, 479
water resource management, 240, 374, 465
water scarcity, xiii–xiv, 173, 222, 240, 253, 258, 262, 309, 316, 374–375, 381, 386–387, 390–391, 393, 401, 445–447, 450–452, 454–460
water stress index, 445, 451
water supply, 3, 110–111, 128, 134, 209–210, 223, 233, 240, 248, 250, 252–253, 257–259, 261, 319, 346, 362, 374, 377–378, 380, 383–384, 387–391, 393, 407, 446
water transfer, 226, 234, 240, 259, 262, 446–447, 451–452, 457–458, 460, 471
water withdrawal, 134, 220–226, 233, 235–236, 241, 245–246, 248–251, 256, 260, 262, 389, 446, 450, 471
Weather Generator Model, 11

Yellow River, 92, 223–224, 232, 241, 248, 255–258, 261, 407, 445, 447, 452–455, 457–458

© in this web service Cambridge University Press www.cambridge.org