Index

2030 Agenda 84, 87–9, 107
  see also sustainability

Aarhus Convention 45, 53, 58, 59, 62, 209, 215
  see also human rights
accountability 11, 25, 110, 112, 124, 141, 144, 190, 203, 226
  see also government
adaptation
  and climate change 7, 30, 33, 35, 41, 46, 47, 120, 125, 151, 158, 164, 217
  community based 123, 144
  and law 30, 42, 44, 130, 135, 137, 144–46, 165, 223
  and mitigation 12, 24, 120, 121, 123, 124, 156
  and resilience 21, 22, 23, 24, 25, 33, 34, 47, 48, 54, 67, 121, 124, 138, 212, 222
  see also adaptive governance
adaptive governance
Adger, W.N. 11, 21, 24, 25, 45, 67, 72, 80, 122, 210, 223
Anthropocene 4, 145
Arnold, C. 30, 32, 36, 38, 41, 43, 49, 50, 54
attribution science
  and climate change 147, 152–4
  and insurance 160, 163, 165
  and law 25, 149, 155, 156, 162, 166
  and resilience 156, 161
Australia
biodiversity 40, 137
environmental law 25, 30, 31, 38, 40, 42, 44, 142, 212
regulation 30, 38, 44, 47, 133, 137, 141–3, 212
resource management 38, 47, 133, 141, 143
  see also governance
Beck, U. 19, 68, 69, 77–9, 82, 129
Berkes, F. 20, 33, 73, 135
biodiversity
  and climate change 15, 36
  and conservation 11, 30, 35, 36, 46, 143
  and ecology 92, 96, 98, 210
  and equity 35, 87, 88–91, 99, 220
  global biodiversity 36, 88
  and governance 92, 137
  and law 37, 84, 87, 89–92, 104, 105, 107, 211
  mainstreaming 84–92, 99, 105, 106
  risks to 5, 8, 9, 40, 84, 88, 90, 97–9, 106, 129, 143
  traditional knowledge of 86, 91, 92, 212
  see also 2030 Agenda; Australia; Convention on Biological Diversity; Latin America
Black, J. 18, 196, 211, 221
Bodansky, D. 16, 89
Carpenter, S. 72, 73, 197
change
  capacity to change 20, 24, 37, 118, 134, 141, 145, 199
  and governance 3, 12, 13, 14, 25, 31, 41, 45, 54, 59, 61, 134, 137, 139, 149, 201
  management of 24, 38, 40, 44, 47, 49, 133, 138, 144, 145, 223
  and resilience 20, 21, 33, 34, 138, 222, 223
  system change 20, 24, 25, 29, 31, 33, 34, 40, 43, 143, 144, 210

281
Risk, resilience, inequality and environmental law

transformative change 4, 7, 145, 147, 220, 226
see also climate change; law; stationarity; sustainability

China
cities 168, 169, 174, 176, 179, 190, 193, 198, 203
economic growth 9, 14, 168, 176, 186, 192, 193, 195, 203, 217
environmental governance 169, 196, 199, 203
environmental law 191, 192, 201, 212, 217, 224
environmental risks 26, 188, 189, 199, 202, 214, 215
governance 169, 171, 172, 186, 187, 191, 193, 196–9, 201, 203
government (central and local) 169, 170, 172, 189, 191, 192, 196, 197, 199
NGOs 169, 173, 177, 180, 181, 189, 197, 214, 215, 225
regulation 14, 26, 168–70, 182, 184, 186, 188, 190–93, 196, 198–203, 212, 217, 220, 224
resilience 167, 168, 170, 182, 185, 186, 190, 191, 196, 202, 203
sustainability 167, 168, 182
see also participation
cities
capacities 119, 120, 122, 137, 151
developed countries 9, 117
developing countries 9, 117
and extreme weather 10, 121, 151, 221
and inequalities 8, 9, 16, 26, 105, 110, 111, 114, 115, 219
and resilience 9, 20, 21, 121, 122, 217, 221, 224
and risk 9, 110, 111, 115, 118, 120, 122, 124, 125, 193
see also China; government; urban
civil society 113, 118, 121, 169, 208, 216, 217, 221
see also NGOs
Clarke, L. 11, 24, 208, 221
climate change
causes of 6, 7, 67, 70, 71, 162
conventions 6, 15, 16, 120, 155, 156
costs of 12, 16, 17, 68, 77, 157, 163, 183, 193
effects of 16, 23, 29, 39, 79, 147, 162, 218
and health 10, 98, 105, 114, 188
and inequality 8–10, 63, 68, 69, 80, 105, 109, 115, 118, 138, 209, 210, 218, 221
and insurance 148, 151, 158–66, 215, 216, 218, 219, 222, 226
and law 16, 17, 19, 29, 129
responsiveness to 5, 21, 24, 35–37, 41, 214
and risks 5, 6–8, 10, 19, 49, 55, 58, 67, 69, 74, 76, 81, 119, 120, 124, 125, 143, 158, 160, 165, 216, 217
and science 17, 18, 24, 26, 147–50, 152, 154–6, 158, 160–62, 166, 213, 216
and uncertainty 7, 8, 30, 32, 67, 129, 152
see also adaptation; attribution science; biodiversity; IPCC; mitigation
climate resilience gap 148, 157–60, 162, 165, 166, 226
Comfort, L. 20, 22, 215
complex systems 20, 24, 33, 42, 43, 45, 130, 145
Convention on Biological Diversity (CBD) 39, 84, 85, 87–9, 104–106
Cossens, B. 43, 44, 129, 132, 134–7, 141
Craig, R. 30–32, 42, 43, 45, 49, 129, 141
Curran, D. 68, 69, 74, 76, 77, 79, 80, 210, 219, 220
de Búrca, G. 129–35, 141
decentred regulation see governance; participation
developing countries 9, 10, 88, 90, 104, 117, 144
see also cities
disasters
environmental 7, 132, 164, 189
inequalities 8, 119, 125, 163
natural 7, 33, 35, 47, 158
recovery 8, 20, 160, 162, 163, 165
resilience 20, 34, 46, 121, 124, 208

see also government; insurance

Djalante, R. 132, 134, 135
Doremus, H. 31, 139, 141, 142, 145
Duit, A. 23, 211, 214, 217

Ebbesson, J. 89, 106, 211, 213
Engel, K. 131, 134, 138
environmental challenges 4, 11, 21
environmental governance see governance

environmental health see health
environmental inequalities see inequalities
environmental justice see justice
environmental law
adaptation 26, 33–5, 47, 54, 129, 137, 145
failures 14, 38, 132, 140, 209, 217
flexibility 43, 50, 53, 55, 56, 132, 144, 194, 213
governance 4, 12–14, 16, 26, 30, 32, 35, 36, 39, 45, 47, 49, 58, 129, 131, 132, 135–8, 141, 196, 203
inequality 25, 89, 207, 221
international 12, 14, 15, 16, 58, 89, 129, 217
limitations 12, 14, 18, 25, 105
resilience 25, 26, 49–51, 54–7, 59, 63, 129, 132, 207, 221
risk 3, 18, 50, 55, 58, 131, 143, 211, 221

see also Australia; China; Latin America; law; regulation; UK environmental risks

perceptions 3, 7, 12, 25
regulation 3, 12, 16, 17

see also China; climate change; health; inequality; justice; risk; uncertainty

equity

see also biodiversity, inequalities, justice

intergenerational 12, 19, 35, 119

intrigenerational 12, 119
mainstreaming 87, 88, 90–92, 98, 99, 106
social 87, 220

extreme weather 10, 114, 121, 148, 151–4, 160–63, 216, 221

see also climate change; disasters

Fisher, E. 12, 18, 31, 52, 221, 222
Folke, C. 20, 21, 33, 34, 42, 105, 134
Fraser, A. 121–3

Garmestani, A. 30, 42, 129, 130, 141, 143
global see transnational governance

adaptive governance 26, 132, 133, 135, 136, 146
arrangements 30, 32, 34, 35, 38, 40, 43–5, 142, 171, 214
challenges 30, 139, 224
flexibility 130, 132, 141, 144, 223
good governance 45, 141, 186, 187, 196, 198
governance gaps 162, 216
ew environmental governance 47, 130, 132, 133, 135, 140, 144, 214, 216, 223, 226, 227
participatory 41, 218
polycentric 36, 38, 45–7, 215, 216
public 172, 186
risk governance 132, 209, 226
self-governance 130, 169
transnational 16, 26, 98, 224

see also biodiversity; change; China; environmental law; government; insurance; NGOs; participation; uncertainty

government
accountability of 11, 25, 110, 112, 124, 141, 190, 226
central 168–70, 189–92, 196, 197, 199, 215, 217, 221
and disasters 9, 162, 165
and governance 38, 45, 172, 196, 213, 215, 223
local 169, 176, 185, 192, 194, 198, 217, 220, 221, 223, 225
national 109, 112, 113, 120, 121, 137
officials 132, 169, 175, 177, 181, 183, 184, 187–202
see also China; cities; insurance
Green, O. 30, 32, 35, 42, 44, 45
Gunderson, L. 33, 34, 130
Gunningham, N. 12–14, 133, 141, 145

Hayek, F. 55–7

health
burdens 108, 110, 111
care 20, 112, 113, 115, 124, 221
environmental health 8, 108, 110–12, 114, 115, 117, 120, 203, 221
and environmental risks 5, 8, 10, 108, 111, 114, 115, 117, 120, 167
and inequalities 8, 110, 111, 112, 114, 115, 117, 221
outcomes 111–14, 118, 217
see also climate change; water
Heijden, J. 131, 133, 135
Hill Clarvis, M. 44, 129, 137, 141
Hobday, A. 29, 30, 38
Hollling, C. 20, 32, 33, 49, 68, 71, 81, 82, 130, 134, 135
human rights
see also 2030 Agenda; Aarhus Convention
courts 59, 89, 100, 101, 103, 106
transnational conventions, laws and treaties 89, 90, 100, 106, 107
Hutter, B.M. 12, 13, 18, 20, 21, 24, 129, 132, 190, 196, 197, 208, 211, 214, 216, 219, 221
India 9, 14, 114
inequality
challenges 105, 218
and environmental inequalities 8, 10, 11
and environmental risks 3, 8, 11, 63, 68, 76, 80, 108, 110, 111, 114, 117, 223
and justice 10, 99, 109
and law 11, 25, 63, 77, 207, 220
and participation 52,
and regulation 16, 26, 203
relational inequalities 68, 69, 73, 74, 76, 222, 223
and resilience 4, 23, 75, 68, 69, 73, 74, 76, 80, 82, 209, 219, 221, 223
transnational 9, 26
see also cities; climate change; disasters; government; governance; health; inequality; resilience; risk; sustainability
insurance
and climate resilience 148, 160, 163, 165, 166, 216, 226
and disasters 159, 162, 165
government 160, 161, 165
and law 148, 151, 158
parametric 163, 164, 216
private 161, 162, 165, 218
and regulation 13, 164
see also attribution science; climate change; climate resilience gap
Intergovernmental Panel on Climate Change (IPCC) 6, 16, 17
Ituarte-Lima, C. 86, 95, 97, 211, 212, 215, 217, 220, 224
justice
environmental 10, 45, 91, 99, 106
and inequality 10, 85, 99, 109, 220
and law 86, 88, 90, 92, 106, 211
and property rights 41, 85–93, 96, 97, 99, 101–103, 215
and risk 76, 89
see also climate change; equity; participation; sustainability
Karkkainen, B. 131–8, 140, 141, 145
Kostka, G. 191, 193–6
Latin America
biodiversity 84–92, 96–9, 104–107
indigenous people 91–3, 97, 98, 100–104, 212, 214, 215, 220
law 84, 90, 164
see also Peru
law
challenges 4, 7, 18, 44, 48, 54, 63, 105, 215
and change 23, 32, 150
enforcement 134, 182
and flexibility 55, 130, 132
property law 26, 89, 99, 220
and resilience 21, 25, 30, 47, 49, 54–7, 59, 77, 207
and risk 58, 213, 227
role of 25, 132, 207, 211–13
and science 149, 150
transnational 12, 16, 89
and uncertainty 7, 12, 18, 19, 130, 136, 149, 213
see also adaptation; attribution
science; Australia; biodiversity; China; climate change;
environmental law; human rights; inequality; insurance;
justice; Latin America;
participation; regulation; UK
Lee, M. 15, 62, 140, 141, 145, 209, 219
Macrae, C. 22, 190, 225
McEldowney, J. 9, 13, 18
Minzner, C. 193, 194, 200
mitigation 12, 24, 29, 120, 121, 123–5, 156, 162, 199, 209, 216
see also adaptation
Mitlin, D. 110, 113, 118
moral value 68, 72, 73
Nelson, D. 21, 23–5, 30, 34, 46, 131, 209, 218, 222, 223
new environmental governance see governance
NGOs 13, 15, 38, 45, 51, 54, 87, 137, 138, 169, 173, 177, 180, 181, 189, 197, 198, 213–15, 218, 219, 225
see also China; civil society
Nourse, V. 131, 135, 136, 145
O’Malley, P. 18, 22, 129
Olsson, L. 32, 34, 105, 144
organised irresponsibility 69, 77–9, 219
Ostrom, E. 33, 38, 133, 216
participation
China 169, 170, 179, 185, 189, 196, 197, 215, 218, 224
community participation 169, 170, 217
decentred regulation 14, 198, 199
justice 45, 58, 91, 92
law 59–63, 92, 196, 197, 215
public participation 25, 26, 43, 45, 49, 57–63, 168, 169, 185, 189, 197, 215
and resilience 22, 25, 36, 45, 57, 62, 209, 214, 223
stakeholder dialogue 170–76, 182, 183, 186, 217
see also accountability; governance;
inequality
Patton, L. 213, 215, 216, 222, 226
Pedersen, O. 52, 56, 212, 213, 215, 225, 226
Peru 84, 90–94, 96–8, 104, 106, 164, 220
see also Latin America
regulation
dilemmas 3, 12
regulatory approaches 12, 46, 136
resilience 7, 21, 22
risk 19, 21, 22, 190, 198, 203
risk regulation 19, 21, 22, 190, 198, 203
uncertainty 19, 213
see also Australia; China;
environmental law;
environmental risks; inequality;
insurance; law; participation;
UK
resilience
aspirations of 133, 209, 210
authoritarian resilience 188–203
concept of 20, 21, 32, 63, 67, 72, 83, 121, 129, 132, 144
designing resilience 54, 213
and flexibility 32, 50, 52, 55, 56, 130, 210, 212, 213, 222, 223
managing 131–4, 136, 141, 144
prospects for 207, 224
and relational inequalities 69, 73, 74, 76, 222, 223
and risk 9, 21, 22, 23
strategies of 12, 17, 22, 23, 25, 191, 196, 208–211, 213, 218, 219, 223, 224, 226, 227
and sustainability 67, 167, 168, 179, 182, 185, 186
and uncertainty 22, 30, 136, 138, 207, 208, 213, 221
Risk, resilience, inequality and environmental law

see also adaptation; attribution science; change; China; cities; climate change; climate resilience gap; disasters; environmental law; inequality; insurance; law; regulation; participation; urban risk
and anticipation 3, 7, 22, 225 financial risks 68, 69, 76, 80, 148 and inequality 4, 8, 10, 23, 26, 63, 68, 69, 76, 77, 80, 109, 114, 118, 207, 221 perceptions 3, 57, 214, 215 risk class 67–9, 76, 77, 80, 82, 219 risk management 3, 4 risk reduction 20, 124, 125, 132, 156, 166, 203, 226 and uncertainty 3, 4 see also biodiversity; China; cities; climate change; environmental law; environmental risks; governance; health; inequality; justice; law; mitigation; regulation; resilience Ruhl, J. 30–32, 38, 42, 43, 45, 49, 50, 132, 138 Satterthwaite, D. 9, 110, 111, 113, 116–18, 123, 216 science see attribution science; climate change; law; uncertainty Scotford, E. 52, 56, 211, 217 Shi, Y. 197–9 Simonson, S. 36, 40, 42, 43, 45, 46 social stability 194, 198–203, 212 stakeholder dialogue see participation stationarity 31, 150, 210, 212 Steffen, W. 6, 30, 36, 119 Stern, N. 14, 19, 75, 197–9 sustainability development 87, 88, 159 ecological/environmental 30, 31, 84, 105, 107, 124, 134, 168, 185, 220 and inequality 159, 211 see also 2030 Agenda; China; resilience Tierney, K. 11, 20, 21, 23, 209, 210, 221, 225 UK Courts 60, 61, 215 environmental law 25, 50–54, 63, 217 regulation 51, 52, 59, 211 uncertainty and change 3, 7, 42, 44, 137, 149, 213 and governance 7, 12, 18, 19, 30, 32, 130, 131, 136, 138–40, 144, 208, 213, 221 and science 18, 149, 208 see also climate change; law; regulation; resilience; risk UNEP 15, 16, 96 United Nations (UN) 5, 14, 15, 85, 87, 88, 102, 104, 109, 110, 117, 155 urban and migration 5, 9 planning 11, 41, 121–4, 172, 174, 175, 201 populations 5, 29, 108–110, 114, 115, 117, 120, 220 and resilience 20, 34, 121, 122, 133, 197, 210, 219, 221 see also cities; government Van Rooij, B. 14, 190, 192, 193, 196, 197, 199–203, 220 Walker, B. 10, 33, 34, 40, 134, 135, 139 Wang, A. 191, 194, 195, 203 water contamination 5, 10, 98, 116, 117, 119, 143, 177, 178, 221 and health 7, 98, 108, 110–12, 115–17, 221 management 5, 11, 30, 38, 44, 46, 47, 102, 104, 122, 123, 133, 134, 137–40, 142, 188 quality 12, 112, 167, 221 resources 75, 112, 115, 121, 122, 129, 133, 150, 154, 161, 200 WHO/UNICEF 110, 115, 117 World Commission on Environment and Development 15, 109, 119 World Health Organization (WHO) 8, 108, 110, 111, 115, 117 Zhang, L. 14, 192, 197