

# Index

---

1944 Treaty, 243–246, 248, 250–252

## A

Abstraction licensing, 81–82, 84, 87–89, 259, 269

Agricultural use, 3, 5, 8, 14, 20–21, 27, 29–30, 54–55, 58, 83, 89, 97, 106, 110–112, 114, 189, 195, 198–199, 262–263, 265–269

Agriculture, 2–4, 6–7, 14, 27, 29–30, 32, 38, 41, 43, 45, 50, 52, 54, 58, 64–66, 72, 74, 79, 85, 87–89, 94, 99, 105–106, 110–113, 117–126, 144, 150, 154, 159–160, 167, 173–174, 176, 180, 183, 189–191, 193, 195–199, 204, 212–213, 216, 230–231, 234, 240, 245–246, 263–264, 266–267

Agro–food value chains, 113

Allocation, 2–9, 11–22, 25–33, 37, 40, 42–43, 49–58, 63–74, 80, 84–85, 87–89, 93–96, 98–102, 105–106, 110–114, 117–125, 129–130, 133–134, 136–140, 143–144, 146–155, 159–169, 173, 178, 180, 183–184, 189–191, 193–197, 199, 204, 206, 208, 213, 215–218, 221–224, 227–232, 234–235, 237–240, 246–248, 250–252, 255–265, 267–270

Amudarya, 9, 227–232, 234–238, 240, 259, 267

Aquifer recharge, 27–28, 54, 153, 184, 206, 209, 211, 213, 260

Aquifer, 1–3, 5, 8, 12–13, 15, 27–28, 42, 53–54, 64, 67, 70, 72, 97–99, 101, 105–112, 136, 139, 147, 150, 152–153, 160, 164, 174–175,

177, 179–184, 203–206, 208–213, 216, 219, 224, 248–250, 252–253, 259–263

Australia, 8, 15, 20, 26–28, 30–32, 34, 51, 54–55, 57, 65, 73–74, 143–144, 146, 153, 269

## C

Case studies, 15, 55, 125, 176, 180, 183, 256, 265, 267

Central Asia, 227, 229–230

Climate change, 5, 7, 12, 27, 50, 58, 79, 88–89, 113, 117, 124, 133, 139, 154, 161, 190, 198, 227, 240, 243, 248, 252, 255, 270

Collaborative governance, 54–55, 138, 243, 248, 252

Collective management, 8, 108, 114

Common pool resource, 176, 178, 184

Cooperative water management, 203–213

## D

Declaration of the Rights of Indigenous Peoples, 38, 45

Drought adaptation, 211–212

Drought, 6–7, 12, 17, 30, 51–52, 57–58, 66, 70, 72–74, 81–82, 85–86, 88, 96–98, 101–102, 105–106, 108–110, 112, 118, 121–125, 129, 139, 152–154, 164–169, 175–176, 178, 190, 193, 216–219, 222–224, 245–246, 251, 263, 265–267

**E**

Ecological effects, 50–59  
 Economic instruments, 7, 64, 69–74, 86, 101, 118, 125, 261, 267  
 England and Wales, 7, 27, 79–80, 86, 89, 257, 259–260, 264, 266–269  
 Environmental flows, 2–7, 49–50, 54–57, 59, 68, 73, 87, 94, 100–101, 114, 139, 147, 199, 252, 259, 262, 266  
 Environmental sustainability, 6–7, 64, 68, 114, 259

**F**

Federalism, 191–193, 215, 217, 219, 224  
 Freshwater management, 130, 132, 135, 259  
 Functional flows, 51, 53, 55, 262

**G**

Governance, 4, 7–9, 13, 17, 37, 43, 45, 54–58, 64, 70, 94, 100, 114, 132, 134, 137–138, 140, 154, 175, 177–180, 183–184, 189, 212, 215–216, 223–224, 240, 243, 245–246, 248, 250–252, 270  
 Groundwater allocation, 8, 11–17, 21–22, 27, 31, 136, 143, 146–147, 150, 153, 163–164, 224, 260  
 Groundwater management, 12–14, 16, 22, 50, 53–54, 56, 58, 99, 136, 145–146, 149, 152–155, 175–178, 180, 183–185, 217, 219, 221–222, 258  
 Groundwater overexploitation, 94, 99, 102  
 Groundwater policy, 146  
 Groundwater, 2–9, 11–22, 26–28, 30–33, 40–42, 50, 53–54, 56–59, 72, 79–88, 94–97, 99, 102, 105–106, 109–110, 112–113, 118–121, 123, 130, 134, 136, 139, 143–155, 160–164, 168, 173–181, 183–185, 190, 194, 197, 203–212, 216–224, 229–230, 244, 247–250, 253, 257–260, 262–266, 269–270

**H**

Human right to water, 29, 32

**I**

Indigenous groundwater rights, 40–41  
 Indigenous rights, 7, 39–41, 270  
 Indigenous uses, 54

Indigenous water rights, 38–42  
 Institutional innovation, 81, 108, 118, 125  
 Institutional reform, 64  
 Institutions, 3–4, 32–33, 39, 64–65, 68–69, 80, 99, 118–119, 121–122, 130, 160, 166, 184, 215, 217, 219, 240, 243, 248, 251, 257, 260, 268  
 Integrated water resources management, 4, 70, 239, 256

**L**

Law, 7, 22, 25–34, 37–46, 69, 74, 80–81, 83, 94–97, 99–101, 106, 108, 110–113, 119–121, 123–125, 130, 134, 136, 151, 153, 162, 176, 189–199, 203–204, 208–210, 212, 217–219, 223–224, 246–248, 251, 257–258, 264

**M**

Management, 2, 4, 6, 8, 12–16, 19, 21–22, 26–30, 32, 37, 40, 43–45, 50–51, 53–59, 63, 68, 70, 72, 74, 79–89, 94, 96–99, 102, 106–110, 112–114, 118–121, 123–125, 130–140, 143–155, 160–162, 164–169, 174–180, 183–185, 191–193, 196–199, 204–206, 208, 211–212, 217–224, 228–231, 236–240, 243, 245–246, 248, 250–253, 256–261, 264, 267–269

**N**

Nebraska, 8, 15, 19–21, 215–224, 257, 259–260, 264, 267–268, 270  
 New South Wales, 8, 31, 143, 145–146, 153, 257, 261, 264–265, 267  
 New Zealand, 7–8, 26, 28, 30–31, 33, 44–45, 54–56, 129–131, 138, 259–260, 266–269

**O**

Open access, 1, 7, 11, 13–17, 19, 21–22, 113, 255–256, 260, 269  
 Organisations, 4, 83, 95–96, 98, 101, 111, 113–114, 153, 177, 179, 258, 265, 267–268  
 Overallocation, 7, 67, 93–94, 98, 102, 111, 164  
 Over-exploitation, 16, 43, 45, 94, 97–99, 102, 264

**P**

Participation, 3, 7, 22, 29, 32–33, 54, 57, 70, 102, 120, 160, 165–166, 176, 178, 184, 223–224, 229, 238, 250–252, 260, 270

Politics, 11, 14, 21, 178

Polycentricity, 216, 218

Prior appropriation, 112, 189, 204, 211–212, 217, 219, 247–248, 264

**R**

Reallocations, 4, 64–67, 259, 267

Regulated access, 2, 7, 255–256, 259–261, 263

Rio Grande River Basin, 243–244, 246

Riparianism, 189, 193–194, 199

River basin planning, 57, 118–120, 125, 259

**S**

Stakeholder involvement, 33, 58, 224, 250

Stakeholder's engagement, 161, 163, 165

Stakeholders, 3, 6, 13, 18, 25, 29, 33, 55, 74, 82, 85, 88, 96, 110, 112–113, 120, 125–126, 138, 153, 164, 176, 180, 198–199, 204, 206, 208, 223–224, 244, 247–251, 258–259, 268

Sui Generis, 39–40, 46

Surface water, 2–5, 7–9, 12–14, 16, 18, 20–21, 26–28, 30–31, 51, 54, 56–58, 69, 72, 79–82, 85–88, 94–96, 98, 106, 109–110, 119–121, 123, 130, 134, 136, 139, 144, 148–150, 152–154, 160, 163–164, 175, 190, 195, 198, 204–206, 208–209, 211–212, 215–224, 229, 246–250, 256–257, 259, 263–264, 266

Surface–groundwater connections, 54

**T**

Te Mana o Te Wai, 132–133, 138

Transboundary governance, 248–250, 253

Transboundary waters, 227–230, 237–238, 240

Transition, 1, 7–8, 11, 13–22, 51, 66, 84, 94, 100, 113, 136, 153–154, 162, 165, 255–257, 259–261, 263–264, 269–270

Transitioning, 1, 14, 16, 20, 113, 153, 165, 255–256, 263–264

Turkey, 117–125, 257, 259–260, 262, 267

**U**

United Nation, 29, 38, 45

United States, 7–8, 38, 40–41, 45, 65, 74, 203–204, 213, 240, 243, 245–246, 249, 251–252

**W**

Water allocation, 2–4, 7–9, 11–17, 19, 21–22, 26–33, 37, 50–58, 63–65, 67–74, 80, 84–85, 87–88, 93–96, 98, 102, 105–106, 113–114, 117–125, 129–130, 133–134, 136, 138–140, 143–144, 146–147, 150–151, 153, 159–169, 189–190, 194–195, 197, 199, 204, 213, 215, 217–218, 223–224, 227–232, 234–235, 237–240, 247, 250–251, 255–258, 260–261, 269–270

Water budgets, 55

Water licensing, 143

Water markets, 31, 63, 65, 70–71, 74, 101, 111, 154, 161, 267

Water planning, 26–27, 33, 88, 94–95, 98, 100, 102, 119, 135, 138, 205, 249

Water policy, 57, 65–66, 83, 98, 137, 144, 146, 198, 203, 205–206, 211, 229

Water quality, 7, 11, 13, 16, 28, 40, 56–58, 85, 117, 123, 130–131, 138–139, 146–148, 151, 162–164, 174–175, 184, 189, 191, 194–195, 197–199, 223, 230, 240, 248–249, 262

Water resources, 1–5, 7–9, 12, 20, 22, 26, 32, 43, 45, 54, 56, 63, 65–66, 69–70, 79, 81–84, 86, 88, 93–95, 97–98, 100–101, 105–106, 113, 117, 119–125, 130, 134, 136, 139, 144–145, 148, 153–154, 161–168, 173, 175–180, 184, 189–190, 194, 197–199, 204–205, 207, 219, 223, 228–230, 238–239, 247–250, 255–257, 259–261, 263–264, 269–270

Water resources management, 4, 32, 63, 70, 82, 86, 125, 161, 239, 256

Water rights, 5, 7, 28, 30–32, 38–42, 55, 66, 80, 83, 87, 94–96, 98, 100–102, 106, 118–119, 130, 134–137, 144, 154, 161, 189, 191, 195–198, 204–209, 211–213, 217–219, 247–248, 251, 266

Water scarcity, 2, 6, 12, 28, 33, 69, 89, 105–106, 110, 125, 129, 162, 167, 174, 189, 199, 213, 231, 234, 237

Water transfers, 31, 101, 109, 125, 193, 197, 199, 221, 263

Water user, 2–3, 5–6, 13–14, 17–22, 25–26, 28–29, 32–33, 55, 58, 64, 68, 73, 83, 96, 99, 101, 110, 119, 133, 136–139, 149–151, 154, 165, 168, 179, 193–194, 204–206, 208–211, 218–219, 223, 230–232, 237, 239–240, 252, 257, 260–262, 266, 268–269

Water user institutions, 26, 28–29, 32–33

Western, 26–28, 30–31, 33, 52, 74, 82, 99, 112, 152, 176, 205–206, 213, 216–217, 249