

# Index

---

## Africa

- Code of Manu 163
  - customary law 92–3
  - East Africa 92–3
  - Egypt 163, 214
  - Ethiopia 214
  - Ghana 239, 248
  - Hammurabi Code 163
  - highlands water project 259
  - interstate agreements 133–8, 209–10
  - interstate water transfers 259
  - Morocco 175, 244, 247, 255, 275, 281, 290
  - Mozambique 273
  - Nigeria 247
  - Protocol on Shared Watercourse System 334
  - River Niger Basin 209–10, 215
  - river Nile 133–4, 214, 215
  - River Senegal 209, 215
  - Senegal 244, 248
  - South Africa *see separate entry*
  - Southern African Development Community Region 334
  - water as community resource 92–3
  - Zambezi River 134, 137
  - Zambia 239
- Agenda 21 25, 109, 111
- allocation 80–82, 103–4, 232, 274–7  
*see also* public domain
- appropriation 79, 99–100, 103–4, 232  
*see also* prior appropriation doctrine
- Aristotle 85
- Armenia 255, 281, 285
- Water Code 275

## Asia

- China *see separate entry*
- India *see separate entry*
- Indonesia 307–8
- Japan 78, 88
- Malaysia 259
- Nepal 214, 236, 244, 273, 276
- Pakistan 216
- Philippines 88, 308–10
- South Asia 210, 212, 213
- Tibet 216
- Vietnam, Socialist Republic of 238, 264, 275

## Australia 78, 81

- access to water 277
- Boyne River Basin 318–9
- Commonwealth 154, 155, 156–9
- Constitution 156–7, 160
- ecological protection 287–8
- intergovernmental agreements 155
- international agreements 156
- irrigation 155, 245, 271
- Lake Eyre Basin Intergovernmental Agreement (2000) 155
- Murray–Darling Basin 154–9
- New South Wales 258, 316–8
- Queensland 81–2, 283, 318–9
- states' powers 154
- trade in water rights 156–7, 159, 283
- Victoria 287–8
- Water Act 2007 156–9, 160
  - normative structure 158, 160
- Water Management Act 2000 (NSW) 316–8
- water market 159
- water resource planning 158–9, 258
- water resources governance 316–9
- water rights 270, 271–2, 283
- water use priorities 316–9

## Belgium *see* Flemish Belgium

- Blackstone 99, 100, 170
- Bolivia 259
- Brundtland Report 21, 36
- Brazil 238, 290
  - National Water Resources Policy 247, 275, 285

## Canada 153–4

- Canada Water Act (1970) 153
- cooperative federalism 159
- interstate water transfers 259–60
- Master Apportionment Agreement (1969) 154
- Prairie Provinces Water Board 154
- public domain 244–5

## Chile 299–300

## China

- adjudication of water rights 291
- allocation 276
- Chinese law 78, 80–81, 163–4
- public domain 244, 249–50

- Tarim River Basin 285
- trade in water rights 282–3
- water equalisation 164
- Water Law (2002) 244, 250, 272, 276, 282, 285, 291
- water plans 255
- water rights 272, 291
- water transfers 260–61
- Civil law
  - Civil Code 179–83
  - communal 179
  - French Civil Code (1804) 179, 180
  - Huizen case 181
  - Italy 179–80
  - Jochems case 181
  - Potassium Mines case 182
  - public domain regimes 179–80
  - riparian rights 179, 180
  - River Rhine 182
  - Spain 180
  - The Netherlands 180–82
- climate change 16, 17, 113, 341
- Code of Romney Marsh 91
- Constitutions
  - Brazil 238
  - Colorado 241–2
  - Columbia, Constitutional Court of 240
  - Ecuador 239
  - Ethiopia 239
  - Florida 243
  - Ghana 239
  - India 240
  - individuals' rights 239–41
  - Mexico 238–9
  - Peru 241
  - rights and values 237–8
  - South Africa 239
  - states' rights 238–9
  - Vietnam, Socialist Republic of 238
  - Yemen, Republic of 238
  - Zambia 239
- Convention on Biological Diversity (1992) *see* United Nations Convention on Biological Diversity (1992)
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes *see* United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992)
- Convention Relating to the Development of Hydraulic Power (1923) 116
- cooperation principle 195, 212–20
- court cases *see* international judicial decisions; national judicial decisions
  - custom and practice 1, 2, 79, 89–90, 183, 231
  - customary international law *see* international law
  - Draft Declaration on Human Rights and the Environment 87
  - Draft International Covenant on Environment and Development, 50–52, 111, 331
  - Dublin Statement on Water and Sustainable Development 34–5
  - Dubrovnik Declaration (1956) 117
  - East Africa *see* Africa
  - Ecuador 239
  - ecological justice 24, 25, 47, 48
  - ecological protection of water 283–8
    - administrative arrangements for 284–6
    - by reserves 287–8
    - by water rights 286–7
    - environmental water reserves 287–8
    - use of water rights for 283–8
  - English law 78, 79, 85, 98–102, 168–74, 231
    - see also* United Kingdom
    - appropriation doctrine 99–100
    - Birmingham case 172
    - common law right to water 168–72, 270
    - Embrey's case 171
    - land, as source of water rights, 168–70
    - Middle Ages 98–9
    - Miner's case 171
    - Pennington's case 173
    - riparian doctrine 100–101, 170–72
    - riparian rights 170–72, 173
    - statutory arrangements 172–4
    - statutory power 101–2
    - Young's case 171
  - environmental water reserves 287–8
  - equitable use *see* equitable utilisation
  - equitable utilisation principle 192, 193–200, 207, 208, 214, 332
  - Ethiopia 214
  - Europe
    - Belgium *see* Flemish Belgium
    - Convention on Cooperation for the Protection and Sustainable Use of the Danube River (1994) 334
    - Convention on the Protection of the Rhine (1999) 335
    - cooperation 218–20
    - Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy (2000) (European Union) 131–3, 310, 311, 336, 337
    - Flemish Belgium 310–11, 336
    - France *see separate entry*

- Germany 255, 284  
 Italy 179–80  
 Mediterranean states 235–6  
 Portugal 255, 265  
 Rhine Basin 219–20  
 Spain 180, 243, 260, 265, 277  
 sustainable development 49–50  
 The Netherlands 181
- federal jurisdictions 147–160  
 Australia 154–9  
 Canada 153–4  
 community of interest 147  
 consensual arrangements 149–52, 160  
 cooperative federalism 159  
 equitable apportionment 148–9  
 individual rights and duties 160  
 interstate water resources 160  
 normative structure 147–60  
 United States of America 147–53
- Flemish Belgium 310–11, 336
- France 255, 260, 284  
 allocation 276–7  
 Civil Code (1804) 179  
 public domain 78, 244  
 water rights 271–2
- Germany 255, 284
- Ghana 239, 248
- governance  
*see also* water resources governance;  
 international water resources  
 governance  
 economic management approach 45  
 function of 43–5  
 integration 42  
 juridical approach 45–6  
 legal arrangements for 43  
 models of 47–52  
 political and civic approach 45  
 theoretical foundation 42–7
- Grundnorms 31, 32, 77–9, 109, 125, 137, 145,  
 153, 176, 250–51  
*see also* norms  
 constitutional 237–43, 250  
 environmentally sustainable use, Africa 284  
 equitable apportionment as 153, 159  
 European Union 336  
 Indonesia 307  
 international law 109  
 international watercourses 125  
 interstate agreements 335  
 Islamic law 166, 176  
 legal status 251  
 public domain 235–6, 243–6
- South Africa 284, 336  
 sustainable development as 345  
 United Nations Convention on Non-  
 navigational Uses of International  
 Watercourses (1997) 333  
 United States 153, 159  
 water resources development 235–51  
 water resources governance, of 345
- harm avoidance principle 195–200, 214  
 Helsinki Rules 118–9  
 human right to water 85–7, 89, 203, 204  
*see also* water rights  
 Draft Declaration of Human Rights and the  
 Environment 87
- hydrological cycle *see* water cycle
- India 88, 214, 216, 240, 255, 258, 273  
 Maharashtra Water Conservation Corporation  
 Act (2000) 304  
 public management 304–7  
 Rajasthan Farmers' Participation in  
 Management of Irrigation System Act  
 (2000) 305  
 Tirupathi 305–7  
 water resources governance 304–7
- Indonesia  
 sustainable development 307–8
- integration 42, 322–30  
 coherence 344–9, 354–6  
 international legal arrangements 345–8  
 legal integration 322–30, 344–56  
 national legal arrangements 348–54  
 normative arrangements 344–5  
 normative arrangements 344–5, 354–6  
 principle 341  
 water resources management *see* integrated  
 water resources management
- integrated water resources management 323–4,  
 340–57  
 coherence 344–9  
 conflict of interest 342–3  
 Draft Declaration on Guardianship over  
 Water 343  
 guardianship 343–4  
 international arrangements for 345–8  
 legal structure 344–6  
 normative structures 340–4  
 principle of integration 341  
 water codes 344  
 water rights system 341
- international instruments  
 African Convention on the Conservation of  
 Nature and Natural Resources (1968)  
 Douglas Fisher - 9781781950166  
 130

- Agreement between the Federal Republic of Nigeria and the Republic of Niger concerning the Equitable Sharing in the Development, Conservation and Use of Their Common Water Resources (1990) 135
- Agreement between the Government of the Republic of Kazakhstan, the Government of the Kyrgyz Republic and the Government of the Republic of Uzbekistan on Cooperation in the Area of Environment and Rational Nature Use (1998) 130–1
- Agreement between the Republic of Sudan and the United Arab Republic for the Full Utilization of the Nile Waters (1959) 133–4
- Agreement between the Republic of Zimbabwe and the Republic of Zambia Concerning the Utilization of the Zambezi River (1987) 134–5
- Agreement Concerning the River Niger Commission and the Navigation and Transport in the River Niger (1964) 135
- Agreement on Cooperation for the Sustainable Development of the Mekong River Basin (1995) 334–5
- Agreement on Cooperation for the Sustainable Development of the Mekong River Basin (1995) 334–5
- Asuncion Declaration (1971) 130
- Convention on Cooperation for the Protection and Sustainable Use of the Danube River (1994) 334
- Convention on the Industrial and Agricultural Use of International Rivers and Lakes (1965) 130
- Convention on the Protection of the Rhine (1999) 335
- Convention Relating to the Development of Hydraulic Power (1923) 116
- Convention Relating to the Status of the River Gambia (1998) 135
- Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy (European Union) 131–3, 310, 311, 336, 337
- Draft Declaration on Human Rights and the Environment 87
- Draft International Covenant on Environment and Development 50–52, 111, 331
- Draft Rio de Janeiro Convention *see* Convention on the Industrial and Agricultural Use of International Rivers and Lakes
- Framework for General Cooperation between the Arab Republic of Egypt and Ethiopia (1993) 134
- General Agreement on Tariffs and Trade (1994) 226–7
- Great Lakes Charter (1985) 149–50
- Johannesburg Declaration (2002) 25, 330
- Madrid Declaration (1911) 115, 116, 117
- New Delhi Declaration (2002) 28–9, 330
- New York Declaration (1958) 118
- Paris Convention for the Protection of World Cultural and Natural Heritage (1972) 113
- Protocol on Shared Watercourse Systems in the Southern Africa Development Community Region (1995, rev 2000) 137, 334
- Ramsar Convention on Wetlands of International Significance (1971) 112
- Rio Declaration (1992) 28, 34, 195, 331
- Stockholm Declaration (1972) 23, 26, 34, 110, 111, 195
- Treaty establishing a Constitution for Europe 49–50
- Treaty establishing the European Community 49
- Treaty on the Development and Utilization of the Water Resources of the Komati River Basin between the Kingdom of Swaziland and the Government of the Republic of South Africa (1992) 135–6
- United Nations Convention on Biological Diversity (1992) 34, 113
- United Nations Convention on the Law of Non-navigational Uses of International Watercourses (1997) 119–22, 129, 190–91, 193, 197–9, 201, 207–8, 332–3
- United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992) 119–20
- United Nations Convention to Combat Desertification (1994) 114
- United Nations Framework Convention on Climate Change (1992) 113
- World Charter for Nature 110, 111
- World Conservation Strategy 23
- international judicial decisions
- Lake Lanoux Arbitration (France and Spain) (1957) 117
- Nicaragua case: *Nicaragua v United States of America* (1986) 90

- River Danube case: Judgment in the case concerning the Gabčíkovo-Nagymaros Project (Hungary and Slovakia) (1997) 123–5, 129, 201
- River Meuse case: Diversion of Water from the Meuse Case (Belgium and The Netherlands) (1937) 116
- River Oder case: Case relating to the Territorial Jurisdiction of the International Commission of the River Oder (1929) 116
- Trail Smelter Arbitration (Canada and the United States of America) (1941) 119
- international law  
*see also* international instruments  
 conflict of interest 342–3  
 cooperation principle 195  
 customary international law 2, 90, 189–90, 195, 200, 212, 213–4, 327, 345–6  
 dispute resolution 191  
 Dublin Conference *see* International Conference on Water and the Environment  
 equitable utilisation principle 193–5, 196, 200  
 riparian states 196  
 equity principle *see* equitable utilisation principle  
 General Agreement on Tariffs and Trade (1994) 226–7  
 Grundnorm 109  
 harm avoidance principle 195–200  
 riparian states 196  
 International Conference on Water and the Environment (1992) 331  
 International Court of Justice 14, 123–5, 193, 340  
 international legal system 189–90  
 international trade in water 226–7  
 Madrid Declaration (1911) 115, 116, 117  
 normative arrangements 340  
 normative structure 191  
 pacta sunt servanda 129, 189, 345  
 paralegal rules 110–12  
 Permanent Court of International Justice 115–6  
 precautionary principle 90  
 Rio Declaration (1992) 195  
 riparian states 115  
 sovereignty 129, 189, 204, 345  
 Stockholm Declaration (1972) 195  
 sustainable development 331–3  
 water as shared resource 192–3  
 water resources function 191–2  
 water resources governance principles 330–31
- International Law Association 115, 117, 118
- international water resources 109, 114–125, 139–42, 145  
*see also* international watercourses  
 common interest 115–8  
 community of interest 115–118  
 consensual arrangements 140, 141  
 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992) 119–120  
 equitable use 118–119, 126  
 governance 149–42, 145, 187–8  
 international norms 114–125  
 pollution, protection from 121  
 transboundary waters 120
- international water resources governance 187–8, 331–3  
 community of interest 192–3, 202, 208–10, 217–8, 220, 225, 232, 236, 237  
 cooperation principle 195, 212–20  
 dispute resolution 191  
 Dublin Conference *see* International Conference on Water and the Environment  
 equitable use *see* equitable utilisation  
 equitable utilisation principle 192, 193–200, 207, 208, 214, 332  
 harm avoidance principle 195–200, 214  
 International Conference on Water and the Environment (1992) 331  
 international law 191–2  
 international legal system 189–91  
 no-harm principle *see* harm avoidance principle  
 right of use 332  
 shared governance 193  
 shared resource, water as 192–3, 332  
 states' right of use 332  
 sustainable management 191  
 United Nations Convention on the Law of Non-navigational Uses of International Watercourses (1997) 332–3
- international watercourses 109, 115–6  
 Aswan dam 133–4  
 common management doctrine 126–7  
 community of interest 115–8, 126  
 control of 114–25  
 duty of watercourse states 122  
 ecosystems 121  
 Euphrates River 215–6  
 Grundnorm 125  
 Indus River 216, 256  
 Kariba dam 134–5  
 Komati River Basin 135–6  
 Meuse river 115–6  
 mutual interests 116

- Nile river 133–4  
 pollution, protection from 121, 126  
 riparian states 120, 214–5  
 River Danube case 123–5, 129, 201  
 River Gambia 135  
 River Kagera Basin 135  
 River Meuse dispute 115–6  
 River Niger 135  
 River Oder dispute 116  
 Sudd el Aali Reservoir, Aswan 133–4  
 Syrian and Iraq 215  
 Tigris and Euphrates 215, 256  
 Trail Smelter Arbitration (1941) 119  
 Turkey 215  
 United Nations Convention on the Law of  
 Non-navigational Uses of International  
 Watercourses (1997) 119–22, 129,  
 190–91, 193, 197–9, 201, 207–8,  
 332–3  
 Zambezi River 134
- interstate agreements 129–42  
 African 133–8  
 African Convention on the Conservation of  
 Nature and Natural Resources (1968)  
 130  
 Agreement between the Federal Republic of  
 Nigeria and the Republic of Niger  
 concerning the Equitable Sharing in the  
 Development, Conservation and Use of  
 Their Common Water Resources  
 (1990) 135  
 Agreement between the Government of the  
 Republic of Kazakhstan, the  
 Government of the Kyrgyz Republic  
 and the Government of the Republic of  
 Uzbekistan on Cooperation in the Area  
 of Environment and Rational Nature  
 Use (1998) 130–1  
 Agreement between the Republic of Sudan  
 and the United Arab Republic for the  
 Full Utilization of the Nile Waters  
 (1959) 133–4  
 Agreement between the Republic of  
 Zimbabwe and the Republic of Zambia  
 Concerning the Utilization of the  
 Zambezi River (1987) 134–5  
 Agreement Concerning the River Niger  
 Commission and the Navigation and  
 Transport in the River Niger (1964)  
 135  
 Agreement on Cooperation for the  
 Sustainable Development of the  
 Mekong River Basin (1995) 334–5  
 Asia 138–9  
 Asuncion Declaration (1971) 130  
 Blue Nile 133, 214  
 Cambodia, Laos, Thailand and Vietnam  
 (1995) 139  
 community of interest 208, 220  
 Convention on Cooperation for the Protection  
 and Sustainable Use of the Danube  
 River (1994) 334  
 Convention on the Industrial and Agricultural  
 Use of International Rivers and Lakes  
 (1965) 130  
 Convention on the Protection of the Rhine  
 (1999) 335  
 Convention Relating to the Status of the  
 River Gambia (1998) 135  
 cooperation 131, 212–20  
 Directive 2000/60/EC Establishing a  
 Framework for Community Action in  
 the Field of Water Policy (2000)  
 (European Union) 131–3, 310, 311,  
 336, 337  
 Egypt and Ethiopia (1993) 134, 214  
 equitable utilisation principle 207, 214  
 Europe 131–3, 218–20  
 Finland and Sweden (1971) 219  
 Framework for General Cooperation between  
 the Arab Republic of Egypt and  
 Ethiopia (1993) 134  
 Great Lakes Charter (1985) 149–50  
 Grundnorms 335  
 harm avoidance 214  
 hydrological issues 215–7  
 India and Bangladesh 139, 218  
 India and Nepal 138, 314, 317, 218  
 Inkomati River Basin 136  
 Kazakhstan, Kyrgyz and Uzbekistan (1998)  
 130–1  
 Komati River Basin 135–6  
 Mahakali River 138  
 Mekong River Basin 139  
 Mozambique, Swaziland and South Africa  
 (1992) 136  
 mutuality of interests 220  
 normative structure 129–30, 139–42  
 operational norms 133–9  
 Organisation of American States 130  
 pacta sunt servanda 207  
 Protocol on Shared Watercourse Systems in  
 the Southern Africa Development  
 Community Region (1995, rev 2000)  
 137, 334  
 Rhine Basin 219–220  
 River Ganges 135, 218  
 River Kagera Basin 135  
 River Niger Basin 135  
 River Nile 133–4

- River Plate Basin 130  
 Sarada barrage 138  
 Scandinavia 218-9  
 strategic norms 130-33  
 Sudan and the United Arab Republic 133-4  
 sustainable development 333-5  
 Swaziland and South Africa (1992) 135-6  
 trade 221-7  
 Treaty on the Development and Utilization of the Water Resources of the Komati River Basin between the Kingdom of Swaziland and the Government of the Republic of South Africa (1992) 135-6  
 water transfers 223-5  
 water use rules 226-7  
 Zambezi River 134, 137
- interstitial normativity 3, 4, 33, 37, 51, 190, 308, 337, 344, 357
- Iran 301-2  
 Water Law and the Manner of Water Nationalisation Law (1968) 301-2
- Irrigation 12, 15  
 Australia 155, 245, 271  
 China 12, 164, 283  
 Colorado and Kansas dispute 148  
 Hammurabi Code 163  
 India 304-6  
 Islamic law 167, 168, 175, 177  
 Lahj, Sultanate of 177  
 Lebanon 176  
 Morocco 281  
 Roman law 165  
 Sri Lanka 14
- Islamic law 78, 79, 102-3, 165-8, 231  
 codified arrangements 174-8  
 community resource, water as 175, 178  
 Grundnorm 166, 176  
 irrigation 167, 168, 175, 177  
 Iraq, Constitution of 178  
 Lahj, Sultanate of 177-8  
 Lebanon 176  
 Majalla *see* Ottoman Civil Code  
 Morocco 175  
 Ottoman Civil Code 78, 80, 176  
 Ottoman land laws (1858) 175  
 public domain 176  
 shared resources 167-8, 175  
 shari'ah 102, 166, 177  
 sustainable development 24, 26  
 Syria 176  
 Tigris and Euphrates rivers 178  
 water rights 102-3, 167  
 Yemen 290
- Israel 259
- Japan 78, 88  
 Johannesburg Declaration (2002) 25, 330  
 Jordan-Yarmouk basin 214  
 judicial decisions *see* international judicial decisions; national judicial decisions
- Kazakhstan 249, 255, 272, 281
- Lahj, Sultanate of 177-8  
 Lebanon 176  
 legal systems 61-7  
 Code of Romney Marsh 91  
 customary law 91-2  
 judiciary, function of 78, 101  
 property 63-4  
 sovereignty, concept of 61-2
- Locke, John 99
- Madrid Declaration (1911) 115, 116, 117  
 Malaysia 259  
 Mexico 238-9, 255, 275, 281  
 Middle East 214  
 Morocco 175, 255, 275, 281, 290  
 Water Law (1995) 244, 247  
 Mozambique 273
- national judicial decisions  
 Australia  
 Harper's case: Harper v Minister for Sea Fisheries (1989) 245  
 Nature Conservation Council case: Nature Conservation Council of New South Wales Inc v Minister Administering the Water Management Act 2000 (2005) 317-8  
 France: Potassium Mines case (1988) 182  
 India: Tirupathi case: Intellectuals Forum Tirupathi v State of Andhra Pradesh (2006) 305-7  
 New Zealand: Genesis Power case: Genesis Power Ltd v Franklin District Council (2005) 48  
 The Netherlands  
 Huizen case 181  
 Jochems case (1944) 181  
 United Kingdom  
 Birmingham case: Attorney-General v Birmingham Borough Council (1858) 172  
 Calvin's case: Calvin v Smith (1608) 93  
 Chasemore's case: Chasemore v Richards (1859) 85  
 Embrey's case: Embrey v Owen (1851) 101, 171  
 Liggins's case: Liggins v Inge (1831) 100

- Mason's case: *Mason v Hill* (1833) 101  
 Medway case: *Medway Company v Earl of Romney* (1861) 102  
 Miner's case: *Miner v Gilmour* (1858) 171  
 Pennington's case: *Pennington v Brinsop Hall Coal Company* (1877) 173  
 Prior of Southwark's case (1498) 169  
 Sury's case: *Sury v Pigot* (1625) 99  
 Young's case: *Young v Bankier Distillery Company* (1893) 171
- United States of America  
 Appalachian Electric Power case: *United States v Appalachian Electric Power Company* (1940) 257  
 Day's case: *Day v Armstrong* (1961) 242  
 Emmert's case: *People v Emmert* (1979) 242  
 Hartman's case: *Hartman v Tresise* (1906) 242  
 Kansas case: *Kansas v Colorado* (1906) 147–8  
 Nebraska case: *Nebraska v Wyoming* (1945) 149  
 New Jersey case: *New Jersey v New York* (1931) 148
- national legal instruments  
*see also* Constitutions
- Australia  
 Lake Eyre Basin Intergovernmental Agreement Act 2001 (Commonwealth) 155  
 Murray Darling Basin Act 1993 (Commonwealth) 155  
 Water Act 2000 (Queensland) 318  
 Water Act 2007 (Commonwealth) 156–9, 160  
 Water Management Act 2000 (New South Wales) 316–8  
 Water (Resource Management) Act 2005 (Victoria) 287
- Canada Water Act 1970 (Canada) 153
- China: Water Law (2000) 244, 250, 272, 276, 282, 285, 291
- Civil Code 1804 (France) 179  
 Civil Code 1865 (Italy) 180  
 Civil Code (The Netherlands) 180
- Flemish Belgium: *Décret relatif à la politique intégrée de l'eau* (2003) 310, 336
- India  
 Maharashtra Water Conservation Corporation Act (2001)  
 Rajasthan Farmers' Participation in Management of Irrigation System Act (2000)  
 Indonesia: Law Concerning Basic Provisions for the Management of the Living Environment (1982) 307–8
- Iran: Water Law and the Manner of Water Nationalisation Law (1968) 301–2
- Morocco: Water Law (1995) 244, 247
- Nepal: Water Resources Act (1992) 244, 273
- New Zealand: Resource Management Act (1991) 337
- Philippines: Strategic Environment Plan for Palawan Act (1992)
- Singapore  
 Environmental Pollution Control Act 303  
 Public Utilities Act 303–4  
 Sewerage and Drainage Act 303
- South Africa  
 National Water Act (1998) 287, 314–6  
 Water Services Act (1997) 89
- United Kingdom  
 Water Environment and Water Services (Scotland) Act (2003) 311–4  
 Water Industry (Scotland) Act (2000) 311, 337  
 Water Resources Act 1991 (Eng & Wales) 284
- United States of America  
 Alabama–Coosa–Tallapoosa River Basin Compact (1997) 150–1  
 Colorado River Compact (1928) 150  
 Delaware River Basin Compact (1961) 152  
 South Platte River Compact (1926) 151–2  
 Water Resources Act (1972) 262
- Yemen: Water Law 261, 273, 275, 285, 290
- national water resources  
 control of 109–14  
 legal rules 112–4  
 paralegal rules 110–112
- China 163–4  
 Civil law 179–83  
 English law 168–74  
 governance  
 codified normative arrangements 174–83  
 community of interest 145, 232  
 federated states 145, 146  
 legal arrangements 231–3  
 normative structure 145–6  
 planning for 233  
 unitary jurisdictions 163–83  
 international norms 109–14  
 Islamic law 165–8, 174–8  
 Roman law 164–5
- natural rights 85
- Nepal 214, 236, 276  
 Water Resources Act (1992) 244, 273



- New Delhi Declaration (2002) 28–9, 330
- New York Declaration (1958) 118
- New Zealand 48–9, 270, 290
- Resource Management Act (1991) 337
- norms
- see also* Grundnorms
  - balancing norms 32
  - coherent principles 119–22
  - competence, of 31–2, 38, 232
  - conduct, of 31–2, 38
  - consensual arrangements 140, 190
  - decision-making 117, 121, 142
  - equitable apportionment 148–9, 159
  - equity, of 194
  - federal jurisdictions 147–160
  - fixed norms 32
  - goal-oriented norms 32
  - integrated water resources management 340–44
  - international 107, 109–10, 114–127, 139–140, 189
  - international law 109–27
  - international water resources governance, of 139–42, 145
  - international water resources, control of 114–25
  - interstate agreements, of 129–39
  - interstitial normativity 3, 4, 33, 37
  - Iraq Constitution 178
  - Islamic, traditional 178
  - legal rules 112–4
  - nation states, of 232
  - national water resources, control of 109–14
  - obligation, of 232
  - operational 122–5 133–9
  - outcome, of 122
  - paralegal rules 110–2
  - procedural 118, 121, 122
  - reasonable and equitable use 118–9
  - riparian doctrine 170–2
  - sovereignty over natural resources 189
  - strategic 122–5, 130–33
  - substantive 118, 121, 122
  - sustainable development, of 37
  - traditional Islamic 178
  - unitary jurisdictions 163
  - water resources governance 345
- no-harm principle *see* harm avoidance principle
- Ottoman Civil Code 78, 80, 176
- Paris Convention for the Protection of World Cultural and Natural Heritage (1972) 113
- Pakistan 216
- Peru 241
- Philippines 88
- sustainable development 308–10
- Portugal 255, 265
- prior appropriation doctrine 237, 241–2, 257, 270–71, 280, 289
- property
- appropriation doctrine 99–100
  - common property 67–8, 69–70, 179
  - see also* water as common property
  - concept of 61, 63–4, 66, 193, 242, 274
  - economic instrument 68–9
  - flowing water 78, 85, 99
  - in water 67–71, 179, 274
  - ownerless property 67, 68
  - private property 67–8, 69–71, 243
  - public property 67–8, 239
  - res communis *see* common property
  - res nullius *see* ownerless property
  - res propria *see* private property
  - res publica *see* public property
  - riparian right as 101, 270–1
  - role in water resources management 326, 341
  - Roman law 67–8, 78, 97, 179
  - source of rights 64–6, 71–2, 96
  - sovereignty and 61, 193
  - water as commodity 59, 70–1, 76, 222, 226, 259, 278–83, 322, 344
  - water as common property 69–70, 78, 85, 99, 167, 179, 193, 236
  - water as private property 70–1, 242, 270, 300
  - water as public property 239, 241–2
  - water rights as 237, 300
- public domain 78, 135, 176, 231, 235–6, 244
- administration of 246–50
  - sustainable development, for 248–50
  - allocation of water rights 274
  - Armenia 248–9
  - Australia 245
  - Brazil 247, 264–5
  - Canada 244
  - China 244, 249–50, 264
  - Civil law 179–80, 183
  - codified 179–83
  - community of interest 236–7
  - ecological protection 284–6
  - France 78, 179, 244
  - Germany 244
  - Ghana 248
  - Grundnorm 243–6
  - irrigation 176, 179
  - Italy 179–80
  - Kazakhstan 249
  - Morocco 244, 247
  - Nepal 244

- Netherlands 181
- Nigeria 247
- planned regulation of water resources 264–6
- Portugal 265
- private rights and 237
- public control 245–6
- public ownership 243–5
- public trusteeship doctrine 245–6
- riparian rights 179–80
- Senegal 244, 248
- South Africa 245–6
- Spain 180, 243
- Syria and Lebanon 176
- Vietnam 264
  
- Ramsar Convention on Wetlands of International Significance (1971) 112
- Rio Declaration (1992) 28
- riparian doctrine 100–101, 170–72
  - irrigation 171
  - normative structure 170–72
- riparian rights
  - English law 170–2, 173
  - Roman law 164–5
- riparian states 115–7, 120
  - common pool resources 115
  - community of interests 115–8, 126
  - consensual arrangements 115–7
  - Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992) 119–20
  - cooperation 122, 214
  - duty of water use 122
  - equitable utilisation principle 196
  - harm avoidance principle 196
  - Lake Lanoux Arbitration 116–7
  - obligations of 120
  - River Danube case 123–5, 201
  - River Meuse dispute 115–6
  - River Nile 214
  - River Oder dispute 116
- Roman law 1–2, 67–8, 78, 79, 85, 97–8, 164–5, 179, 231, 345
  
- Salzburg Declaration (1961) 118
- Scandinavia 218–9
- Scotland *see* United Kingdom
- Senegal 244
- Singapore 259, 303–4
- sovereignty
  - concept of 2, 60, 61–2, 75
  - equity as limitation 193
  - international law and 189, 192–3
  - international legal system 189
  - interstate agreements and 189, 206, 208, 227
  - limited territorial sovereignty 192–3
  - natural resources, over 129, 189
  - norm of competence, as 189
  - pacta sunt servanda and 129, 189, 208, 345
  - restrictions on 133, 139, 140, 221
  - rights of 75–7, 107, 108, 129, 239
  - River Danube case 129
  - source of rights 61–2, 64, 65, 72
  - water resources, over 76–7, 80, 83, 107, 202
- South Africa 88–9, 239, 259
  - conservation of water resources 314–6
  - Constitutional Grundnorm 284, 336
  - ecological protection 287
  - National Water Resources Strategy 287
  - public trusteeship doctrine 245–6
  - reserves 287
  - Water Tribunal 290
- Spain 180, 243, 260, 265, 277
- state ownership *see* public domain
- state arrangements for water resources
  - governance *see* national water resources
- Stockholm Declaration (1972) 23, 26, 34, 110, 111, 195
- sustainability 21–5, 201–3, 250–51
  - see also* sustainable development
  - Indonesia 307–8
  - sustainable water use 14
- sustainable development
  - administration for 248
  - Agenda 21 35
  - Brundtland Report 21, 36
  - coherence 47
  - conflict of interest rule 342–3
  - conservation 22–3
  - cultural value, as 23–5
  - Draft International Covenant on Environment and Development 50–52, 111, 331
  - Dublin Statement on Water and Sustainable Development 34–5
  - ecological 23, 24
  - ecological justice 48
  - economic 22–3, 24
  - environmental protection 249–50
  - equitable utilisation 332
  - European Union 49–50
  - function, as 26–9
  - goal, as 25, 27
  - governance for 42–53
    - New Zealand 48
    - European Union 49
  - Grundnorm, as 52
  - hydrological cycle 344
  - international law 331–3
  - international watercourses 125–6
  - interstate agreements 333–5

- Islamic perspective 24, 26
  - Johannesburg Declaration (2002) 25, 330
  - language 22–3
  - legal norm, as 29–33
  - models of governance 47–50
  - moral value, as 25–6
  - New Delhi Declaration (2002) 28–9, 330
  - New Zealand Resource Management Act (1991) 337
  - norms 52–3, 142
  - operational foundations 26–34
  - Philippines 308–10
  - precautionary principle 45
  - public domain 248–50
  - Rio Declaration (1992) 28, 34, 195, 331
  - River Danube case 201
  - rule of law 340
  - Scotland, water resource development in 313–4
  - social 23, 24
  - Stockholm Declaration (1972) 23, 26, 34
  - theoretical foundations 22–5
  - United Nations Convention on Biological Diversity (1992) 34
  - United Nations Convention on the Law of Non-navigational Uses of International Watercourses (1997) 201
  - water resources governance 297
  - water resources, of 34–7, 46–7
  - World Commission on Environment and Development 21
  - World Conservation Strategy 23
- Tanzania 92
  - Tigris and Euphrates rivers 178
  - Tibet 216
  - Turkey 259
- United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992) 119–20
  - United Nations Convention on the Law of Non-navigational Uses of International Watercourses (1997) 119–22, 129, 190–91, 193, 197–9, 201, 207–8
    - equitable utilisation principle 207–8, 333
    - Grundnorm 333
    - sustainability 201
    - sustainable development 332–3
  - unitary jurisdictions 163–83
    - China 163–4
    - Civil code 179–83
    - codified laws 174–83
    - English law 168–72
    - Islamic law 165–8, 174–8
      - norms of water resource management 163
      - Roman law 164–5
  - United Kingdom
    - see also* English law
    - England and Wales 255–6, 284
      - ecological protection of water 284
      - National Rivers Authority 255–6
      - Water Resources Act (1991) 284
    - Scotland
      - Water Environment and Water Services (Scotland) Act (2003) 311–4
      - Water Industry (Scotland) Act (2000) 311, 337
    - sustainable water resource development 311–4
  - United Nations Conference on Environment and Development (1992) 109
  - United Nations Convention on Biological Diversity (1992) 34, 113
  - United Nations Convention to Combat Desertification (1994) 114
  - United Nations Framework Convention on Climate Change (1992) 113
  - United States of America 147–53
    - Alabama–Coosa–Tallapoosa River Basin Compact (1997) 150–51
    - Arkansas River dispute 148
    - California 279
    - Colorado 241–2
    - Colorado River Compact (1928) 150
    - Colorado Water Conservation Board 286–7
    - consensual arrangements 149–52
    - Constitution 147–8, 257
    - Court imposed water arrangements 148–9
    - Delaware River Basin Compact (1961) 152, 256
    - Department of Environmental Regulation 263
    - Drought Water Bank 279
    - ecological protection 286
    - equitable apportionment 148–9, 159
    - Florida 241
    - Great Lakes Charter (1985) 149–50
    - individual right to water 286
    - interstate compacts 256
    - interstate water disputes 148
    - planned regulation 262–3
    - prior appropriation doctrine 241, 270–71
    - project planning 257
    - riparian doctrine 148, 241, 270–71
    - South Platte River Compact (1926) 151–2
    - sovereignty, local
    - state power 147
    - Supreme Court 147–9, 159, 257
    - sustainable water policy (western USA) 340
    - trade in water rights 279

- water resource planning 257
  - Water Resources Act (1972) 262
  - water rights 270
  - Wyoming 242
- Vietnam, Socialist Republic of 238, 264, 275
- water cycle 1, 9, 59–60
- water entitlements *see* water rights
- water resource development  
*see also* water resources governance
- Canada 259–60
  - England and Wales 255
  - Indus river 256
  - informal planning 254–6
  - infrastructure 258–9
  - interstate transfers of water 259–60
  - planned regulation 261–6
  - planning 254–66
  - project planning 256–7
  - public domain regimes 264–6
  - regulating 261–6
  - Tigris and Euphrates rivers 256
  - transfers of water 258–61
  - United Kingdom 257
  - United States 256, 257, 262–3
- water plans
- India 255
  - Yemen 255
  - Morocco 255
  - Armenia 255
  - Kazakhstan 255
  - Mexico 255
  - France 255
  - Portugal 255
  - Spain 255
  - Germany 255
  - China 255, 256
  - Egypt 256
  - Iraq 256
- water resource planning 257–8
- water resources  
*see also* water resources governance;  
 international water resources
- common pool resource 60–61
  - fungible commodity 59
  - irrigation 60
  - national control of 109–14
  - property in 67–71
  - public domain 78
  - rights to 64–7  
*see also* water rights; riparian rights
  - sustainable development 46–7, 52
  - sustainable management 120
  - water cycle 59–60
- water resources governance  
*see also* water resource development;  
 international water resources  
 governance; water use
- allocation 80–82
  - Australia 316–8
  - Belgium 310–11
  - Chile 299–300
  - coherence 345–9, 354–6
  - community of interest 64, 65, 76, 115–8, 126,  
 145, 147, 192–3, 202, 208–10, 217–8,  
 220, 225, 237
  - community responsibility 12
  - conflict of interest rule 342–3
  - control by law 232–3
  - custom and practice 89–90
  - customary rights 91–3
  - Flemish Belgium 310–11
  - formal structure 57–8
  - Grundnorms 235–51
  - guardianship 343–4
  - hydrological cycle 1, 9, 322, 323
  - India 304–7
  - integrated legal structures 344–6
  - integration 42, 322–4
  - international arrangements 348–56
  - international disputes 191
  - international law 191–2
  - interstate agreements 209–12
  - Iran 301–2
  - Islamic law 12–13
  - legal structure for 57–8, 324–37, 344–6
  - national approaches 336–7
  - national arrangements 231–3, 348–56
  - ownership rights 80, 81
  - power to regulate 82
  - public interest 237
  - public management 82–3
  - riparian states 115
  - Scotland 311–4
  - South Africa 314–6
  - statutory 299–319
  - statutory rights 80, 81
  - strategic 191
  - sustainable governance 297
  - sustainable water use 191, 233
- water rights  
*see also* riparian rights
- adjudication of 290–91
  - administration 288–91
  - administrative regulation *see* allocation
  - allocation, by 274–7
  - Chile 299–300
  - common law, at 270
  - community of interest 65, 66, 76, 237, 270–1

- constitutional 88–9
- constitutional rights 88–9
- constraints on 341
- courts, function of 290–91
- creation 289–90
- custom and practice 89–91
- customary rights 91–3, 273–4
  - Ghana 273
  - Mozambique 273
  - Yemen, Republic of 273
  - World Commission on Environment and Development (1987) 274
- ecological purposes 283–8
  - South Africa 284, 287
  - France 284
  - Germany 284
  - England and Wales 284
  - China 285
  - United States 286–7
  - Colorado 286–7
  - Australia 287–8
    - reserves 287–8
- enforcement 289–90
- English law 98–102, 168–9, 170–74
- environmental 85–8
- environmental rights 87
- human rights 85–7, 203, 204
- ideal system of 341
- individuals 85–93, 236–7
- individuals, of 85–93
- Islamic law 102–3, 167
- judiciary, function of 289–90
- land, in relation to 280
- legal sources 269–70, 271–2
- legislative 271–2
- market in 278–9
- nation states, in 233
- ownership 103–4
- prior appropriation of 280
- private legal relationships 270–71
- property rights, as 237
- property, as 281
- public interest in 237
- regulatory instruments, as 269–92
- riparian doctrine, under the 170–2, 173
- riparian rights 164–5, 170–3
- riparian rights transfer 280
- Roman law 97–8, 165
- source of 145, 269–70
- sovereignty 76–7
- trade in 277–83
  - Australia 156–7
  - statutory water rights 281–3
  - United States 279
- tradeable 279
- World Bank 277–8
- water use
  - see also* water resources governance; water resource development
  - ancient Egypt 13
  - availability 14–17
  - common law 13–14
  - common pool resource 60–61
  - Confucian philosophy 12
  - customary law 27
  - economic foundations 13–14
  - fungible commodity 59
  - governance of 57
  - human 14–19 *see also* human right to water
  - Islamic law 12–13
  - philosophical foundation 12
  - precautionary principles, customary 12
  - religious foundation 12
  - Roman law 13–14
  - sources 15
  - sustainable 14
  - traditional systems 14
  - utilitarian foundations 13–14
  - values underpinning 11–14
- water transfers
  - interstate 259–60
  - interbasin 260–61
  - infrastructure 258–9
  - southern Africa 259
  - Canada 259–60
  - Europe 260
- World Charter for Nature 110, 111
- World Commission on Environment and Development 21
- World Conservation Strategy 23
- Yemen, Republic of 236, 238, 255, 261, 290
  - National Water Resources Authority 261, 281
  - Water Law 261, 273, 275, 285, 290
  - customary rights 273
  - allocation of water rights 275
  - trade in water rights 281
- Zambia 239

