## Index

<table>
<thead>
<tr>
<th>Term</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aarnio, A.</td>
<td>231</td>
</tr>
<tr>
<td>Abate, Z.</td>
<td>83</td>
</tr>
<tr>
<td>absolute territorial integrity</td>
<td>76, 81</td>
</tr>
<tr>
<td>absolute territorial sovereignty</td>
<td>31, 76, 81, 119</td>
</tr>
<tr>
<td>access</td>
<td></td>
</tr>
<tr>
<td>benefit-sharing, sustainable use and</td>
<td>354–6</td>
</tr>
<tr>
<td>to justice</td>
<td>278</td>
</tr>
<tr>
<td>administrative courts</td>
<td>303</td>
</tr>
<tr>
<td>to water</td>
<td>see right of access to water</td>
</tr>
<tr>
<td>accountability</td>
<td>275, 278</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>45, 50, 54</td>
</tr>
<tr>
<td>Africa</td>
<td>112, 361</td>
</tr>
<tr>
<td>Nile River</td>
<td>see separate entry</td>
</tr>
<tr>
<td>Southern African Development Community (SADC)</td>
<td>43, 44, 109, 135</td>
</tr>
<tr>
<td>see also individual countries</td>
<td></td>
</tr>
<tr>
<td>African Ministers’ Council on Water</td>
<td>135</td>
</tr>
<tr>
<td>African Union</td>
<td>70, 85</td>
</tr>
<tr>
<td>Agence Française de Développement (AFD)</td>
<td>110, 135</td>
</tr>
<tr>
<td>Agenda 21</td>
<td>21, 130, 191, 199–200</td>
</tr>
<tr>
<td>agriculture</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>56</td>
</tr>
<tr>
<td>India</td>
<td>56</td>
</tr>
<tr>
<td>Murray–Darling Basin</td>
<td>217, 218, 247–8, 269</td>
</tr>
<tr>
<td>Netherlands</td>
<td>290, 294, 295, 297, 304</td>
</tr>
<tr>
<td>Nile Basin</td>
<td>68, 69, 74, 82, 83, 94</td>
</tr>
<tr>
<td>riparian forests</td>
<td>203, 204, 209</td>
</tr>
<tr>
<td>Amr, M.</td>
<td>76, 78, 80</td>
</tr>
<tr>
<td>aquifers</td>
<td>see transboundary groundwater management: international law and EU water policy</td>
</tr>
<tr>
<td>Arab Water Week (2013)</td>
<td>59</td>
</tr>
<tr>
<td>arbitration</td>
<td>52–3, 55, 192</td>
</tr>
<tr>
<td>Lac Lanoux</td>
<td>62, 77, 82</td>
</tr>
<tr>
<td>Argentina</td>
<td></td>
</tr>
<tr>
<td><em>Pulp Mills</em> case</td>
<td>61–2</td>
</tr>
<tr>
<td>Asia</td>
<td>112</td>
</tr>
<tr>
<td>see also individual countries</td>
<td></td>
</tr>
<tr>
<td>assessments</td>
<td></td>
</tr>
<tr>
<td>contextual</td>
<td>325–6</td>
</tr>
<tr>
<td>technical</td>
<td>325</td>
</tr>
<tr>
<td>attorneys</td>
<td>376</td>
</tr>
<tr>
<td>Auckland Acclimatisation Society Inc v Sutton Holdings Ltd (1985)</td>
<td>179</td>
</tr>
<tr>
<td>audit</td>
<td>59, 223</td>
</tr>
<tr>
<td>Australia</td>
<td>292</td>
</tr>
<tr>
<td>climate change adaptation in south-eastern</td>
<td>see separate entry</td>
</tr>
<tr>
<td>Murray–Darling Basin</td>
<td>see separate entry</td>
</tr>
<tr>
<td>Water Act 1989 of Victoria</td>
<td>261–2</td>
</tr>
<tr>
<td>Water Management Act 2000 of New South Wales</td>
<td>156–7</td>
</tr>
<tr>
<td>Austria</td>
<td>133</td>
</tr>
<tr>
<td>awareness gap</td>
<td>295</td>
</tr>
<tr>
<td>back end decision methods</td>
<td>256, 270</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>50, 53, 54, 55, 56</td>
</tr>
<tr>
<td>Basarwa</td>
<td>see Bushmen’s challenge for water rights</td>
</tr>
<tr>
<td>Al Bashir</td>
<td>M. 75</td>
</tr>
<tr>
<td>Bechtel</td>
<td>340</td>
</tr>
<tr>
<td>Belgium</td>
<td>92, 133</td>
</tr>
<tr>
<td>Flemish Parliament</td>
<td>150–51</td>
</tr>
</tbody>
</table>

379
benchmarks and indicators 316, 322, 324–6, 328
Benjamin, A.H. 201
Benson-Pope, David 175
Benvenisti, E. 26, 33, 65
Berlin Rules 74
Beurier, J.-P. 117
Bhutan 45, 50, 54, 55
Bigas, H. 1
bilateral treaties/agreements 50–51, 55, 79, 81, 82
Ethiopia and Egypt 69–70, 97
Ethiopia and Sudan 70, 95–6
Mahakali River: India–Nepal Treaty 51, 54–5, 147–8
biodiversity
Convention on Biological Diversity (CBD) 24, 352, 355–6
Conferences of the Parties (COPs) 353, 355, 356, 357
Murray–Darling Basin 155, 214, 246, 249, 251, 252–3, 273
riparian forests 202–3, 210
South Africa 310
Bolivia 335, 336
Cochabamba ‘water revolt’ 340
Bonn Declaration on Global Water Security (2013) 2
Botswana 43
Bushman’s challenge for water rights see separate entry
Brazil 63–4
Harmon doctrine 31
legal framework for water in 199–201
riparian forests and water resources 198–9, 210
anthropic impacts 204
deforestation 203, 204, 205–6
environmental services 201–4
Forest Code 204–5, 206–9
New Forest Code 204–5, 206–10
permanent preservation of vegetation 205
Brown Weiss, E. 1
Brundtland, Gro Harlem 2, 5
Burundi 37, 56–7, 58, 73, 85, 88, 92, 94, 96, 100, 102–3, 106
Bushman’s challenge for water rights 347–8, 349–50, 375–7
conservation in protected areas see separate entry
Mosetlhanye case (2011) see separate entry
Sesana case (2006) 367–8, 370, 376
Canada
International Development Agency 96
public good 296
catastrophe and crisis avoidance and response 256, 269
Central Asia 28–9
see also individual countries
Central Kalahari Game Reserve
Bushman’s challenge for water rights see separate entry
Central Plains Water Trust v Synlait Ltd (2009) 187–90
China 37, 63–4
India 50, 51, 54, 55–6
Strategic Economic Dialogue (SED) 51
and the Mekong 45–9, 107, 149
Chrétien, Jean 33–4
climate change 33, 46, 119
adapting to Australia see climate change adaptation in south-eastern Australia
definition of adaptation 275
institutional legal framework for regional and local water management see separate entry
typology of adaptation 254–5
Brazil 203–4, 206, 210
cooperation 14
human rights and 21
Index

Aborginal people 32
Adaptation 246–8, 272–3
Adaptive Water Law and Governance 253–7
Adaptive Water Law and Governance (AWLG) 253–7
Adaptive Water Law and Governance (AWLG) 253–7
Adaptive Management 357
Adaptive Water Law and Governance 253–7
Advisory Council on International Economic Policy 136
African Development Bank 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
African Development Initiative 222
cost recovery for water services 280
European Commission 294
free or cheap water 295, 343, 345
IWRM: full-cost pricing complemented by targeted subsidies 291
Netherlands 295, 297–8
right to water and social justice 342–6
tax evasion 342–3
UN Economic and Social Council 339
UN Human Rights Council 339–40
Council of Europe
Congress of Local and Regional Authorities 288
European Charter of Local Self-Government 285–6, 287–8
Craig, Robin Kundis 256–7, 260
Crawford, J. 190, 191
customary international law 35, 63, 86, 87
dam-building 47, 52, 53, 78, 92
Aswan Dam 68, 93
Renaissance (Nile) Dam in Ethiopia see separate entry
Danube River 292
Convention on Cooperation for the Protection and Sustainable Use of the (1994) 149–50
Danube River case (1998) 142, 143–4
Darfur 70
data-sharing agreements 49
De Beers 337, 366
decentralization 200, 283–4, 290, 298, 299, 303, 360, 364
functional 285, 298
legitimacy and 284–7
territorial 285
deforestation 83, 203, 204, 205–6
degrading treatment Moselthanyane case 337–8, 369–70, 371–2, 373–4
democracy 284, 286, 303

Corfu Channel case (1949) 119
corruption 340, 341
costs of inaction 326
costs and pricing of water 191, 278, 331–3, 334, 338, 347
Cochabamba ‘water revolt’ 340
cost recovery 280, 282, 292, 298, 301
cross-subsidy 345
EU Water Framework Directive (2000/60/EC)
Democratic Republic of Congo (DRC) 43, 56, 58, 73, 85, 88, 94, 96, 100, 102–3, 106, 336
developed and developing countries:
right to water 331–3
private and public management 338–42
water as fundamental right 333–8
development 22
evolving right to sustainable 142
right to 22–3, 141

dignity 200–201, 309, 314, 333, 334, 335, 338, 346, 376
disaster relief 22
Dublin Principles (1992) 35
duty to cooperate see cooperation duty and transboundary water

Ecuador 335, 336
effectiveness 276, 277, 279

Egypt and the Nile 56, 57–9, 63–4
Renaissance (Nile) Dam in Ethiopia see separate entry
transboundary water resources management agreement:
experiences from Nile Basin see separate entry

El Salvador 60
emergency powers 268
employment 233, 320

England and Wales
Water Industry Act 1991 157–60
environment, right to 141, 308
environmental impact assessments (EIAs) 59, 61
environmental protection 87, 94, 145, 199, 255–7
Australia 217, 226, 248, 251–2
ESD (ecologically sustainable development) concept 212–13, 214–15
costs of inaction 326
South Africa 308–9
weighing of interests 232, 233, 234–5, 240, 243

see also biodiversity; climate change; conservation in protected areas; precaution/precautionary principle; riparian forests
equality 314
equitable and reasonable use 64, 144, 146, 147
Nile Basin 58, 81
South Africa: Revised Protocol on Shared Watercourses (RPWS) 43
sustainability and 144–5, 147, 149, 150, 162
equitable utilization doctrine and no harm principle 80–83
equity 32, 300, 306
inter-generational 23, 43, 141, 145, 150, 214, 282, 306, 308
UNFCCC 282
Eritrea 56, 85, 88, 96
ethic of stewardship 170

Ethiopia
Constitution 336
and the Nile 56–9
Renaissance (Nile) Dam in see separate entry
transboundary water resources management agreement:
experiences from Nile Basin see separate entry

Euphrates River 78
European Charter of Local Self-Government 285–6, 287–8

European Union 117
Commission 30, 40, 129, 132
Water Initiative 135
water scarcity and droughts 294–5
Committee of the Regions 289–90
cost recovery 280, 298
Court of Justice of 289
European Parliament 30, 289
Habitats Directive (92/43/EEC) 234
Lisbon Treaty 289
right to water 278, 336
shared competence 111
subsidarity 288–90
transboundary groundwater
management: international law
and EU water policy see
separate entry
60/EC) 42, 116, 122–5, 127–9,
131–2, 133, 150–51, 236, 279,
292
cost recovery for water services
280
definition of aquifer 113
droughts 134
groundwater ‘daughter’ Directive
111
involvement of all interested
parties 134
IWRM 291
special status of water 296
water tariffs 346
fairness 275, 279–80, 282
Finnish water law: weighing of interests
227–30, 243–4
developing rational criteria
formally binding sources of law
232–5
human right for water as a primary
interest 230–32
plans and programmes 235–7
dynamics of legal reasoning
conducting weighing 240–42
(de)merits of assigning normative
value 240
normative hierarchy of interests
238–40
environmental protection 232, 233,
234–5, 240, 243
Flood-Risk Management Plans
(FRMPs) 237
hydro-electric power 233, 235
minimum harm principle 232
precedents 231, 233, 236, 238, 242
prohibited projects 228–9
soft law 231, 235, 240, 242
Supreme Administrative Court (SAC)
229–30, 233–5
Water Management Plans (WMPs)
236–7
first come, first served
Netherlands 280, 295
New Zealand 177–9, 191, 194
fish/fishing 40, 56, 68, 74, 94, 170, 185,
223, 290
connectivity between pools in river
system 269
Netherlands 295
riparian forests 203
weighing of interests 227, 232–3
Fleetwing Farms Ltd v Marlborough
District Council (1997) 177–9,
180, 181, 182, 184, 187, 188, 189,
191
flooding 40, 278, 292
Bangladesh 55
Netherlands 278, 293, 294, 295–6,
304
Nile 83
food, right to 22, 314
foreign direct investment 69, 70
foreign policy 33, 70–71, 77, 288
forests 290
Australia 245, 249, 250
Brazil: riparian forests and water
resources 198–9, 210
anthropic impacts 204
deforestation 203, 204, 205–6
environmental services 201–4
Forest Code 204–5, 206–9
New Forest Code 204–5, 206–10
permanent preservation of
vegetation 205
framework conventions 118
France 74, 91, 133
Agence Française de Développement
(AFD) 110, 135
Lac Lanoux arbitration 62, 77, 82
fusion knowledge 356–7
Gabőkovo–Nagymaros case 60–61
Gambia 335
Index

Ganges–Brahmaputra Meghna and the Indus 47, 49–56, 107

gazumping 181
gender discrimination 310

Geothem Group Ltd v Waikato Regional Council (2004) 184

Germany 133
security and environmental issues 25–6, 34

Giraudoux, J. 349
Glazewski, J. 308, 313

Gleick, P.H. 2, 8
global economic crisis (2008) 320
good neighbourliness 281, 282, 300–301

groundwater
artificial 232
Finland 232, 236
fossil 119

Netherlands 296, 298

Renaissance (Nile) Dam in Ethiopia 79, 83

riparian forests 202
transboundary groundwater management: international law and EU water policy see separate entry

guardianship of water
jurisprudential model 162–3
New Zealand: kaitiakitanga or 170

habitats
European Union 234
New Zealand 170

Hardin, G. 343, 358

Harmon Doctrine 31, 76, 119
El Hassan, Princess Sumaya bint 59

health 146, 233, 238, 308
effects of inaction on 326
right to 22, 142, 334, 335


Honduras 60–61
human rights 35, 75, 141, 142, 162, 210, 278

cooparation, climate change and 21 degrading treatment

Mosethanya case 337–8, 369–70, 371–2, 373–4
environment 141, 308
food 22, 314
health 22, 142, 334, 335
life 141, 142, 231, 309, 314, 334, 335, 346, 371, 375
right of access to water see separate entry

humanitarian assistance 22

Hungary
Danube River case (1998) 142, 143–4

Huntjes, P. 283, 291–2

hydroelectric power 46, 47, 49, 52–3, 56

Finland 227, 233, 235, 241

Lac Lanoux arbitration 82

New Zealand 167, 170, 179

Nile Basin 93, 94
Renaissance Dam in Ethiopia 66, 69, 74, 75, 79, 80–81, 82, 83

Ignatieff, M. 20, 65

implementation lags in South African water management reform process 305–7, 328

legal concepts that inform evaluation 312–13
progressive realization 314–19
reasonableness 313–14, 317–19

proposed evaluation framework 319, 321–6
actions for sub-objectives 323–4
indicators and benchmarks 324–6, 328

progressive realization 322, 326–7
reasonableness 322, 326, 327
strategic (sub-)objectives 323
theoretical foundation 319–21
vision and principles 322

reform 308
Constitution as key driver 308–9
legislative and strategic planning framework 310–12

India 45, 63–4, 371
Ganges–Brahmaputra Meghna and the Indus 47, 49–56, 107
Mahakali River: India–Nepal Treaty 51, 54–5, 147–8
indicators and benchmarks 316, 322, 324–6, 328
indigenous peoples 351–4
Bushmen’s challenge for water rights see separate entry
Maori 169–70, 171, 192
Indus and Ganges–Brahmaputra Meghna 47, 49–56, 107
inequalities 282
information 40, 93, 121–6, 135
access to 278, 291, 309
data-sharing agreements 49
exchange of 52, 53, 54, 59, 64
Inkomati Catchment Management Agency (ICMA) 320–21
Institut de droit international 34
institutional legal framework for regional and local water management 274, 302–4
certainty, legal 276–7
elements of good water management 278
economic instruments 280
institutional 278
legal instruments 279–80
technical measures 280
integrated assessment framework 292–3
lead requirements for water management 274
effectiveness 276, 277, 279
legitimacy 275–6, 277, 279
resilience 276–7, 279
leading legal and policy principles, ten 281–2, 298–302
decentralization 283–7, 290, 298, 299, 303
legitimacy and decentralization 284–7
subsidiarity 287–90, 299, 303
lessons from IWRM and CPRM
common pool resource management 290–91
integrated water resource management 291–2
Netherlands 278, 279, 280, 293, 302–4
assessment of approach by 298–302
financial autonomy 297–8
formal legal relation between stake, say and pay 297
institutional organization 295–8
public good 279, 296
shared competences 296
water problems 293–5
normative goals in society 277
precautionary principle 276, 281, 282, 296, 302
public good, water as 279, 296, 303
public interest 277, 279
rule of law 277, 284
insurance 280
integrated water resources management (IWRM) 4–5, 7–9, 191, 200
cooperation 64
definition 130, 291
evaluation of implementation lags see implementation lags in South African water management reform process
guiding principles 291–2
institutional legal framework for regional and local water management 278, 283, 291–2, 298–302
integrity
absolute territorial 76, 81
limited territorial sovereignty and 77–8
inter-generational equity 23, 43, 141, 145, 150, 214, 282, 306, 308
InterAction Council (IAC) 33–4
interests, weighing of see Finnish water law: weighing of interests
International Convention on the Elimination of All Forms of Racial Discrimination (ICERD) 231
International Court of Arbitration 77
International Court of Justice (ICJ) Corfu Channel case (1949) 119
Danube River case (1998) 142, 143–4
Gabikovo–Nagymaros case 60–61
Index 387

Pulp Mills case (Argentina and Uruguay) 61–2
International Covenant on Civil and Political Rights (ICCPR) 231
International Covenant on Economic, Social and Cultural Rights (ICESCR) 22, 231, 315–16, 351
International Criminal Court 75
International Labour Organization (ILO) indigenous and tribal peoples 351
International Law Association (ILA) 34
International Law Commission (ILC) 34, 37
transboundary aquifers 110, 111, 112–13, 114–17, 118, 121–9, 130, 134, 135–6
international law 34–5, 44, 83–4, 144–5
absolute territorial integrity 76, 81
absolute territorial sovereignty 31, 76, 81, 119
community-of-interests concept 60–61, 76–7
directed application 42–4, 48–9, 50–55, 57–9, 67, 68, 73, 74, 89–103, 147–51
equitable and reasonable use see separate entry
equitable utilization doctrine and no harm principle 80–83
framework conventions 118
general application 34–42, 45, 73–4, 78, 81–2, 109, 145–7, 292
limited territorial sovereignty and integrity 77–8
New Zealand: influence of 191–2
Renaissance (Nile) Dam in Ethiopia 75–84
transboundary groundwater management: international law and EU water policy see separate entry
International Network of Basin Organizations 135
International Union for Conservation of Nature (IUCN) 352–3
Academy of Environmental Law 2
World Conservation Congresses (WCCs) 353, 355, 356, 357
International Year of Water Cooperation (2013) 3, 15
Israel 78
Italy 74, 90, 91, 133
referenda on water issues 331–3, 338–9, 341, 346
tax evasion 342–3
water pricing and social justice 344–6
judicial activism 374–5
judicial review 159, 284
jurisprudential model for sustainable water resources governance 139–40
current doctrinal context
 evolving forms of obligations 143–4
evolving right to sustainable development 142
 normative forms of legal and paralegal rules 140–41
international law 144–5
 of directed application 147–51
 of general application 145–7
national rules 151–2
 Australia 154–7
 England and Wales 157–60
 South Africa 152–4
towards governance by outcomes 160–61
designing jurisprudential paradigm 164–6
 sustainability 161–4
justice, access to 278, 303
Kalahari Bushmen see Bushmen’s challenge for water rights
Kazakhstan 45, 47–8
Kenya 56, 58, 73, 85, 88, 94, 95, 96, 100, 102–3, 336
Kiss, A. 117
Knowles, Craig 223
Kruger National Park 321
Kyrgyzstan 45

Lac Lanoux arbitration 62, 77, 82
Laos 45
lawyers 376
Lazenby, J.B.C. 83
learning 326
by doing 320
dynamic 270
Lebanon 78
legitimacy 277, 279
decentralization and 284–7
input 275
output 275–6, 277
throughput 275–6
Libya 70
Liebenberg, S. 312, 314
Liechtenstein 133
life, right to 141, 142, 231, 309, 314,
334, 335, 346, 371, 375
Luxembourg 133
McIntyre, O. 62
market-based orientation 364–5
markets, water 35, 255, 266–7, 280
Netherlands 295
Matsumoto, K. 113
Mazibuko case (2009) 313, 318, 343–4,
348
mediation 192
Mekong River Basin 45–9, 107
Agreement on Cooperation for the
Sustainable Development of the
(1995) 149
Middle East 44
Millennium Development Goal 8
(Develop a Global Partnership for
Development) 22
Milne, P. 189–90
Mongolia 45, 48
Moselthanyane case (2011) 337–8,
347–8, 349–50, 365, 375–6
critical review of 371
legal arguments 371–2
outcome 372–5
domestic context
factual context 365–7
preceding litigation 367–70
Moynihan, R. 190, 191, 192
Mubarak, Hosni 71, 73, 105
Murray–Darling Basin 211–12, 226
climate change see climate change
adaptation in south-eastern
Australia
ESD (ecologically sustainable
development) concept 212–13
guiding principles 214–15
lack of regional co-operation in
implementing Plan 222–3, 226
research method 218–20
results and discussion 220–25
conflicts over MDB Plan 225–6
sustainable development in water
allocation 154–5, 214–17
Mursi, Ahmed 72
Myanmar 45
national security 27–8, 287
natural justice 195
Nature Conservation Council case
(2005) 156
necessity principle 289
negative and positive obligations
316–17
Nepal 45, 50–51, 54, 56
Mahakali River: India–Nepal Treaty
51, 54–5, 147–8
Netherlands 133
first come, first served 280, 295
institutional legal framework for
regional and local water
management see separate entry
public good 279, 296
right to water 278
New Zealand 167–8, 196–7
fresh start for freshwater 192–3
gazetting NPS on Freshwater
Management 195–6
Land and Water Forum 193–5, 196
freshwater allocation 176–7
by rule or exercise of discretion
184
cumulative assessment of
competing applications 186–7
first come, first served 177–9, 191, 194

Fleetwing revisited 187–90

influence of international law 191–2

learning from past, securing future 185–6

non-derogation from grant and legitimate expectation 179–80

sustainable management, gazumping and integrity 180–83

national guidance 175–6

restrictions relating to water 172

current water management regime 173–4

sustainable management 168–72

time limits 173, 174

Nicaragua 60, 336

Niger

Agreement with Nigeria 148

Nigeria

Agreement with Niger 148

Nile River 56–9, 63–4

Cooperative Framework Agreement (CFA) 57–9, 72, 73, 85–6, 97–103, 107

challenges of developing 104–6

evaporation loss 69, 81, 82, 83

Renaissance (Nile) Dam in Ethiopia see separate entry

transboundary water resources management agreement: experiences from Nile Basin see separate entry

no harm principle and equitable utilization doctrine 80–83

non-discrimination 314

non-governmental organizations (NGOs) 14–15, 303

North Korea 45

North Shore City Council v Auckland Regional Council (1997) 170–71

Nowak, M.A. 13–14

nuisance 158–60

O’Donnell, E. 271–2

OECD 116, 226

openness of decision making 284

Ostrom, E. 64, 283, 290–91, 343, 358

Pakistan 45, 50, 51, 52–3, 54, 55

Indus Waters Treaty (1960) 50, 52

Panama 336

paradox of water security 31–4

participation in decision-making process 278, 286–7, 291, 292, 303, 311

participatory approach to conservation 356–7

Peczenik, A. 231

Permanent Court of Arbitration 52–3

Permanent Court of International Justice (PCIJ)

Territorial Jurisdiction of the International Commission of the River Oder (1929) 59–60

pesticides 203, 204

Pinker, S. 13


polluter-pays principle 145, 280, 282, 298, 301

positive and negative obligations 316–17

poverty 22–3, 43, 49, 99, 354–5

pragmatism 286

precaution/precautionary principle 127, 145, 214, 257, 261, 266–7, 268, 273, 276, 281

Netherlands 296, 302

UNFCCC 282

precedents

Finnish water law: weighing of interests 231, 233, 236, 238, 242

pricing and costs of water 191, 278, 331–3, 334, 338, 347

Cochabamba “water revolt” 340

cost recovery 280, 282, 292, 298, 301

cross-subsidy 345

EU Water Framework Directive (2000/60/EC)

cost recovery for water services 280
European Commission 294
free or cheap water 295, 343, 345
IWRM: full-cost pricing
complemented by targeted
subsidies 291
Netherlands 295, 297–8
right to water and social justice 342–6
tax evasion 342–3
UN Economic and Social Council
339
UN Human Rights Council 339–40
prisoner’s dilemma 64
private and public management 347, 358
Italian referenda 331–3, 338–9, 341, 346
need for regulation and control
338–42
progressive realization 22
implementation lags in South African
water management reform
process 307, 308, 309, 312–13,
314–19, 322, 326–7, 328, 344
property law/rights 255, 282, 299
proportionality 282, 289, 299
protected areas see conservation in
protected areas
public good, water as 279, 296, 303
public trust doctrine 310
Pulp Mills case (Argentina and
Uruguay) 61–2
quality, water 28, 35, 79, 87, 112, 250
China 45
Netherlands 294, 303, 304
Quintot, G. 312, 314
racial discrimination 18, 309, 310
reasonableness
conflicts of interest and reasonable
needs 162
equitable and reasonable use see separate entry
implementation lags in South African
water management reform
process 307, 308, 312–14,
317–19, 322, 326, 327
Renaissance (Nile) Dam in Ethiopia 57,
66–7, 83–4
background 67, 72–5
conflicts and divergent perceptions
70–72
cooperative relations 69–70
Nile water utilization 68–9
environmental benefits 83
international law 75–6
conventions, principles and rules
78–83
doctrines 76–8
renewable energy
hydroelectric power see separate entry
New Zealand 170
res nullius 360–61
resilience 276–7, 279
Rhine River 133
right of access to water 141, 152, 278,
309, 310, 331–3, 346–8
Bushman’s challenge for water rights
see separate entry
costs and pricing 342–6
Finnish water law: weighing of
interests 230–32, 238
private and public management
338–42
progressive realization 313, 314
social justice concept 338, 344–6,
347–8
water as fundamental right 333–8
rights, obligations and liabilities 141
Rio Conference (1992) 35, 354
Rio+20 Conference (2012) 15–16,
30–31, 35
riparian forests and water resources
198–9, 210
anthropic impacts 204
deforestation 203, 204, 205–6
environmental services 201–4
Forest Code 204–5, 206–9
New Forest Code 204–5, 206–10
permanent preservation of vegetation
205
Ruhl, J.B. 256, 257, 260, 264, 269, 270
rule of law 16, 277, 284
Russia 45, 47, 48
Index

Rwanda 56–7, 58, 73, 85, 88, 92, 94, 96, 100, 102–3
Salzburg Rules 34
San people \( \text{see} \) Bushmen’s challenge for water rights
Sax, J. 185
Scotland 44–5
security 35
climate change and 25–6
national 27–8, 287
sovereignty over water and paradox of water 31–4
separation of powers 284, 286
Sesana case (2006) 367–8, 370, 376
Sheppard, D.F. 171–2, 190
Slovakia: Danube River case (1998) 142, 143–4
Smith, Nick 192–3
Sohnle, J. 132, 134
soil policy 134
solidarity 282, 294, 296, 298, 301–2
community-of-interests concept 60–61, 76–7
South Africa 366
evaluation framework 322
progressive realization and section 24 316–17
global economic crisis (2008) 320
implementation lags in South African water management reform
process see separate entry
Mazibuko case (2009) 313, 318, 343–4, 348
National Water Act 1998 152–4
progressive realization 307, 308, 309, 312–13, 314–19, 322, 326–7, 328, 344
public good 296
Revised Protocol on Shared Watercourses (RPWS) 43–4
Water Management Areas (WMAs) 310–11
South Sudan 57, 66, 67, 73, 75, 88, 104–5
Southern African Development Community (SADC) 43, 44, 109, 135
sovereignty 17, 18–19, 87, 282
absolute territorial 31, 76, 81, 119
cooperation 14, 39, 58, 64–5
emergence of environmental concerns and 20–26, 63–4
limited/qualified 31–2, 76–7, 77–8, 162
paradox of water security 31–4
transboundary groundwater 111, 112
complex resource 112–17
national strategic requirements 117–20
Spain
Lac Lanoux arbitration 62, 77, 82
standard of living, adequate 335
stewardship, ethic of 170
strategic adaptive management (SAM) 307, 319, 320–21
subsidiarity 282, 287–90, 299, 303
subsidies 291
cross- 345
Sudan 56, 57–9, 88
North 104, 105, 106
Renaissance (Nile) Dam in Ethiopia see separate entry
South 57, 66, 67, 73, 75, 88, 104–5
transboundary water resources management agreement: experiences from Nile Basin see separate entry
sustainability principle 281, 306, 308–9
and non-shift principle 282, 302
UNFCCC 282
Sutcliffe, J.V. 83
Switzerland 44, 133
systems thinking/approaches 291, 319, 320, 356
Tajikistan 45
Tan, Poh-Ling 258, 266
Tanzania (previously Tanganyika) 56, 58, 73, 85, 88, 91, 92, 94, 96, 100, 102–3
taxation 280, 285, 342, 346, 347
evasion 342–3, 347
Netherlands 294, 296, 297, 298
technical assessments 325
Tegenu, Alemayehu 105

Tinariwen 1
traditional ecological knowledge 356–7
tragedy of the commons 279, 343, 358
transboundary groundwater
management: international law
and EU water policy 108–11, 135–6
‘export’ of EU pattern of management 131
ad hoc construction of inter-state organs 133–5
relevant territory 131–3
from ‘informed’ cooperation to joint management 126–30
scientific knowledge 121–6
sovereignty and complexity of sharing 111, 112
complex resource 112–17
definition of aquifer 113
national strategic requirements 117–20
transboundary water resources
cooperation duty and transboundary water see separate entry
international law 34–5, 44, 83–4, 144–5
absolute territorial integrity 76, 81
absolute territorial sovereignty 31, 76, 81, 119
community-of-interests concept 60–61, 76–7
directed application 42–4, 48–9, 50–55, 57–9, 67, 68, 73, 74, 89–103, 147–51
equitable and reasonable use see separate entry
equitable utilization doctrine and no harm principle 80–83
framework conventions 118
general application 34–42, 45, 73–4, 78, 81–2, 109, 145–7, 292
limited territorial sovereignty and integrity 77–8
Renaissance (Nile) Dam in Ethiopia 75–84
transboundary groundwater management: international law and EU water policy see separate entry
Netherlands 293, 294
Nile River see separate entry
transboundary water resources management agreement: experiences from Nile Basin 85–6, 107
development of Nile Basin agreements 89–90
1891–1959 phase 90–93
1995–2011 phase 57–9, 72, 73, 97–103
hydro-politics of Nile Basin 88–9
importance of developing an agreement 86–7
significant challenges of developing CFA 104–6
see also Renaissance (Nile) Dam in Ethiopia
transparency 275, 278, 284, 294, 314
trust 64
Turkey 37, 63–4, 78
Uganda 56, 57, 58, 73, 74, 85, 88, 91, 92–3, 94, 96, 102–3, 105–6, 336
UNESCO 112
United Kingdom 26, 42, 74, 85, 89, 90–93, 107
Scotland 44–5
Water Industry Act 1991 157–60
United Nations 14, 27, 33, 71
Charter 14, 16, 17, 22, 63, 282
Committee on Economic, Social and Cultural Rights (CESCR) 315–16
Index

General Comment 3 22, 315
Darfur 70
Declaration of Principles of
International Law (1970) 17–18
Declaration on the Rights of
Development Programme (UNDP) 85, 94
development, right to 23
Economic and Social Council
Environment Programme (UNEP) 352
General Assembly 18–19, 20, 25–6,
37, 110, 334, 335, 338
Human Rights Council 334, 335,
339–40
International Year of Water
Cooperation (2013) 3, 15
Rio Conference (1992) 35, 354
Rio+20 Conference (2012) 15–16,
30–31, 35
Security Council 25–6, 33–4
Stockholm Declaration (1972) 21,
118, 199
UNFCCC 24, 282
United States 27–8, 292
Universal Declaration on Human Rights
(1948) 142, 351
Uruguay 335

Pulp Mills case 61–2

Vietnam 45
water, right to see right of access to
water
Watercare Services Ltd v Minhinnick
(1998) 171
weighing of interests see Finnish water
law: weighing of interests
wetlands 40, 260
Murray–Darling Basin 218–19
Williamson, J. 170
women 348
CEDAW 231, 334
World Bank 14, 27, 28–9, 106, 107, 340
World Economic Forum 27
World Health Organization (WHO) 344, 345
World Meteorological Organization 94
World Parks Congress (WPC) (Durban)
2003 353
World Wildlife Fund (WWF) 352–3
Wouters, P. 192
Zaire (now DRC) 96
see also Democratic Republic of
Congo
Zambezi River basin 107
Zambia 43, 336
Zenawi, Meles 69