
Author Index

- Abboud, I., 235
 Abdalla, 48
 Abrams, L., xvii
 Abu-Nimer, M., 89
 Acreman, M. C., 5
 Adams, R. M., 30–31
 Agrawal, A., 51, 86
 Alam, U., xvii, xviii, 91–92
 Alearts, G., 146
 Alison, K., xviii
 Allan, J. A., 5, 6, 19, 23–24, 41, 50, 83
 Allee, D., 48–49, 198
 Allen, G. V., 204
 Allouche, J., 21, 42–43, 116–117
 Ambroise-Rendu, A., 84
 Amery, H., 6, 9, 10, 19
 Amore, L., 188–189
 Amy, D., 34, 35
 Anand, P. B., 1
 Andersen, I., xvii
 Anderson, E. W., 35
 Anderson, K. M., x, xvii, 249
 Anderson, T. L., 42–43, 50, 116–117
 Annan, K., 9
 Appelgren, B., 65–66
 Arlosoroff, S., 9, 41, 62
 Armitage, R., 201, 205
 Arnold, G., 65–66
 Arnold, J. L., 142
 Asad, M., 262
 Ashton, P., xvii–xviii, 21, 78, 79
 Ashworth, A. E., 4
 Ashworth, T., 4
 Aslov, S. M., 172–173
 Assad, H., 245
 Attia, H., 86
 Atwood, T., xvii
 Aureli, A., 65–66
 Avruch, K., 89
 Axelrod, R., 4, 36
 Azar, E. E., xxiii, 13
 Azevedo, L. G., 262, 263

 Bahr, J., 65–66
 Bailey, R. G., 83
 Baillat, A., 75, 250–251, 257, 260, 264
 Baker, J., 35
 Baker, M., 204
 Bakker, M., xvii
 Bandyopadhyay, J., 62
 Barber, B., 31
 Barnett, T., xvii

 Barraque, B., 135, 146, 148
 Bascheck, B., 209–210
 Baviskar, A., 1
 Beaumont, P., 11–12, 19
 Beecher, J. A., 87
 Bennett, J. W., 30–31
 Bennett, L., 36, 50
 Ben-Shachar, D., 35
 Bercovitch, J., 44
 Berkoff, J., xviii
 Bhatnagar, B., 84
 Bianchi, R., 58, 59
 Biçak, H. A., 256
 Bingham, G., 1, 28, 34–35, 44, 84, 91–92
 Biswas, A. K., xviii, 1, 51–52, 53, 54, 55, 56–57, 93, 191
 Black, E., 192, 193, 194, 195
 Blackmore, D., 165, 166, 167
 Blaikie, P., 22
 Blanche, E., 257
 Blank, H., xvii
 Blankespoor, B., xviii
 Blatter, J., 27, 34
 Bleed, A. S., 50
 Blomquist, W., 48
 Bo Mya, S., 239
 Bogardi, J. J., iii, xvii
 Boisson de Chazournes, L., 55
 Bolte, J. P., 22
 Bonell, M., iii
 Booth, W., 31
 Bouman, N. W. M., 146
 Bracher, G., xvii
 Braga, B. P. F., Jr., iii
 Brecher, M., 24
 Brewster M. R., 259
 Brittain, R., 82
 Brochmann, M., 26
 Bruch, C., 1–2, 52, 83–84
 Bruijnzeel, L. A., iii
 Buck, S. J., 51–52
 Bulkley, J. W., 108
 Bulloch, J., 9, 10
 Bunger, M., 201, 204
 Burchi, S., 50–51, 65–66, 67
 Burke, J., 65–66
 Buros, O. K., 259
 Butts, K. H., 10–11
 Byroade, H. A., 204
 Byron, G. G., xxi

 Cady, F., 77–78
 Cai, X., 6

- Calow, R., 5
Campana, M., xvii–xviii
Cannon, T., 22
Cano, G., 44, 55
Caponera, D., 36, 55, 173–174, 191
Carius, A., xvii–xviii, xxii, 9, 15–16
Carius, G. D., 16
Carmo Vaz, A., 151
Carter, B., 22
Carter, J., 201, 205
Cassar, A., 250–251
Catão, L. A. V., 252, 253, 254, 255–256
Cernea, M. M., 83–84, 85
Chakraborty, R., 77–78
Chalecki, E. L., 249–250
Charrier, B., 10–11
Chatterji, M., 9, 62
Chen, Z., 155
Chenoweth, J., 10–11, 48
Chere, E., 135, 146
Christensen, L., 22
Clark, E. H., 28
Clark, G., 30–31
Cloete, T. E., 21
Cobbing, J., 5
Cohen, R., 89
Conca, K., 6–7, 10, 16, 44, 48, 51–52, 61
Conley, A. H., 151
Contreras-Moreno, N., 93
Cooley, J. K., 9, 10, 11–12
Corell, R. W., 22
Corrigan, E. P., Jr., 264, 265
Coser, L., 37, 38
Cosgrove, W., 5
Crawford, S., 58–59
Creighton, J., xvii, 39, 84–85, 86
Cruikshank, J., 33–34, 37
Custodio, E., 67
- Da Rosa, J. E., 209
Dabelko, G. D., xvii–xviii, 6–7, 9, 15–16
Dagan, G., iii
Daniels, S. E., 48–49
Danielson, J., 1, 5, 24, 63–64
Darwin, C., 50
Darwish, A., 9, 10
Das Gupta, A., xvii–xviii
Davidge, R., 264–265
Davies, I., 22
Davies, J., 24
Davis, C. M., xvii
Davis, U., 11–12
de Jung, J., 147
Deason, J. P., 87
Dellapenna, J., 42, 55, 58, 60, 61
Delli Priscoli, J., i, v, vii, x, xv, xvii, xviii, xxii, 5, 9, 28, 30, 33, 36–37, 38–39, 43, 44, 47–48, 52, 84–86, 87, 88, 91, 92, 93, 98, 112, 135, 136, 139, 140, 141, 142, 143, 144, 145, 146, 147, 151, 155, 159
Demirel, S., 245
Dillman, J., 11–12
Dinar, A., xvii, xviii, 36, 41, 42–43, 50, 51–52, 61, 250, 251
Dinar, S., 27, 61, 75
Dione, O., 154
Diplas, P., 8
Dlamini, D. J. M., 5
Dobson, J. E., 24
Donahue, J. M., 34
Dooge, J. C., 52
Druckman, D., 5
Dryzek, J., 35
Ducnuigeen, J., 144
- Duda, A. M., 47
Dukhovny, V., 22, 150, 155
Dulles, J. F., 204
Dunning, M., 39, 86
Dworsky, L., 198
- Earle, A., xvii–xviii, 22, 77
Easter, W., 42
Eaton, D., 61
Eaton, J., 61
Eban, A., 204
Eckley, N., 22
Eckstein, G., 57–58, 66, 110
Eckstein, O., 142
Eckstein, Y., 57–58, 66, 110
Eckstein, Z., 41
Eidem, N., xvii, xviii
Eisely, L., 116
Eisenhower, D., 199, 204
El Naser, H., 67
El-Bashir, O., 235
Elhance, A. P., 9, 79, 208, 209, 218
Esanola, J. M., 149
Evensen, J., 60
- Faigman, D. L., 88–89
Faisal, I. M., 185
Falkenmark, M., 10–12, 35
Faure, G. O., 34, 89, 90
Feddes, A., iii
Fediw, T., 5
Feehan, J., 257, 260, 264
Feil, M., xxii
Feitelson, E., xviii, 10–11, 48, 51–52, 61, 105
Finger, M., 42–43, 116–117
Fischhendler, I., xviii, 61, 62–63
Fishelson, G., 35
Fisher, F. M., 41
Fisher, R., 33, 34, 37
Fiske, G., xviii, xxv, 12, 19, 20–21, 24
Focht, W., 89
Fournier, F., iii
Frederiksen, H. D., 51–52, 155–156
Freeman, D. M., 50
Frey, F. W., xxiii
Frey-Frankenfield, J., xvii
Frohlich, N., 42
Furlong, K., 26
- Gaines, L., x, xvii–xviii, 249
García-Acevedo, M. R., 27
Gardiner, A., 204
Garrity, D. P., 27
Gayer, J., 148
Ghassemi, F., iii
Ghose, S., 5, 83–84
Giacomello, A. M., 5
Giannias, D. A., 36
Gibert, J. M., iii
Gibson, C. C., 86
Giordano, M., x, xvii–xviii, xxv, 1, 6, 9, 12, 13, 14, 16, 19–21, 24–25, 27, 52, 55, 61, 63–64, 65, 78, 116, 274
Gladwell, J. S., iii
Gleason, G. W., 51–52
Gleditsch, N. P., 26
Gleck, P., xxii, 5, 10–11, 12, 70, 118, 171, 249–250, 260
Glick, T. F., 3, 31
Golden, T., 85
Goldfarb, W., 50
Gonzalez, A., 36
Gooch, G. D., 51–52

- Gopalakrishnan, C., 51–52
 Goslin, I. V., 41
 Gregory, S. V., 22
 Grey, D., xvii, xviii, 51, 52, 76, 103–104, 111, 112
 Gruen, G., 245
 Guha, G., 9, 62
 Gunderson, L. H., 22
 Gupta, A. D., 21
 Gurr, T., 5, 18
 Gustavson, K., 22
 Gyuk, I., 31
- Habib, P., 201, 205
 Haddad, M., 51–52
 Haddadin, M., xviii, 20, 22, 41
 Hafidh, H., 245
 Hagen, E. R., 144
 Hamati, S. G., 41
 Hamner, J., xviii, 6, 26, 62
 Harmon, J., 58
 Haught, J. F., 121
 Haynes, K. E., 41
 Hays, J. B., 203
 Hayton, R., 57–58
 Hayward, J., xviii
 He, D., xvii–xviii
 Hegglin, M., 209–210
 Hegre, H., 26
 Heikkila, T., 48
 Henry, N., 85
 Hera, G., 149
 Herman, T., 155
 Hey, E., 146
 Heyns, P., 151
 Hickey, E., 6–7
 Hill, P. J., 259
 Hirshman, A. O., 85
 Hof, F., xviii
 Hoffman, J., 144
 Homer-Dixon, T., 9–10, 19, 75
 Hoover, H., 136–137
 Housen-Couriel, D., 55, 58, 61
 Howe, C. W., 41, 50
 Huang, G. H., 155
 Hubbard, P. J., 140
 Huber-Lee, A., 41
 Hufschmidt, M. M., iii
 Huisman, P., 147
 Hulse, D. W., 22
 Hunt, C., 5
 Hunter, S., 35
 Hussain, A., 5
 Hussein, S., 245–246
 Hutton, C., 5
- Iles-Shih, M., 54
 Ilter, K., 245
 Ingram, H., 27, 31, 34, 142
 Isaac, J., 15
 Issar, A. S., iii
 Iyer, R., 155
- Jacobson, G., 259
 Jägerskog, A., 20
 Jansky, L., 1–2, 52, 83–84
 Jarrar, A., 41
 Jarvis, T., xvii, 51–52, 66
 Jayyousi, A., 41
 Jenkins, G. P., 256
 Jofuku, M. S., 51–52
 Johnson, L. B., 156
- Johnson, R., 136, 159
 Johnston, B. R., 34
 Johnston, E., 199–200, 201, 202–203, 204
 Jovanovic, D., 58–59
 Jung, C. G., 30
 Just, R., 36
- Kaczmark, B., 146
 Kaijser, A., 147
 Kally, E., 35
 Kalter, R., 142
 Kaser, G., iii
 Kasperson, J. X., 22
 Kasperson, R. E., 22
 Kaufman, E., 33, 99
 Keller, H., 97
 Kemper, K. E., 262
 Kennedy, J. F., 142
 Kenney, D. S., 27–28, 41, 62, 113, 135, 136, 145
 Kenworthy, T., 121
 Keohane, R. O., xxiii, 51
 Khassawneh, A., 60
 Khouri, J., iii
 Kibaroglu, A., 58–59
 Kindler, J., 150
 King, J., 5
 Kirmani, S. S., 46, 47, 86, 92, 221
 Kjellen, B., xvii
 Kliot, N., 61
 Kolars, J., xviii, 5–6, 58–59, 244–245
 Kramer, A., 16
 Kriesberg, L., 35
 Krishna, R., 60
 Krutilla, J. V., 41, 142
 Kulshreshtha, S. N., 171
 Kundzewicz, Z. W., iii
 Kwaku Kyem, P. A., 84
- Lacina, B., 26
 Lammers, O., 209–210
 Lancaster, T., 50
 Landovsky, J., xvii, 75
 Lankester, C., xviii
 Lanna, A. E., 262, 263
 Lanz, K., 261–262
 Laohasiriwong, S., xviii
 Larson, K., xxv, 12, 19, 20–21, 24
 Lasswell, H., xxiii, 2
 Lawrence, P., 5
 Lawson, C., xviii
 Laylin, J., 58, 59
 Leavesley, G., iii
 Lederach, J. P., 89, 90
 Lee, D. J., 52
 Lee, K. N., 51
 Lees, S. H., 31
 Le-Huu, T., 22, 78, 92
 Leitman, S., 77–78
 Lekakis, J. N., 36
 LeMarquand, D., 27, 35, 36–37, 41, 58
 LeMoigne, G., 146
 Leopold, A., 111
 Lethcoe, K., 24
 Leuchtenburg, W. E., 31, 141
 Lewicki, R. J., 33, 34, 36
 Libiszewski, S., 12
 Lieberherr, E., xvii
 Lilienthal, D., 156, 191–192, 195
 Lincoln, W. F., 37, 112
 Linnerooth-Bayer, J., 6
 Litterer, J. A., 33, 34, 36

- Littlefield, S., xviii
 Lizon, M., xvii
 Llamas, M. R., 67
 Lloyd, M., xviii
 London, J. B., 42
 Lonergan, S., 22
 Loof, R., 21
 Lopes Pereira, A., 151
 López Ramirez, A., xvii–xviii
 Lopez Zayas, L. A., 188–189
 Lopez, A., 15
 Lord, W. B., 113, 135, 136, 145
 Loucks, D. P., iii
 Lowi, M., 35, 75, 90
 Lubell, M., 89
 Luers, A., 22
 Lundquist, J., xvii–xviii, 35

 MacChesney, B., 59, 71
 Macomber, M. F., xvii–xviii, 26, 48
 MacQuarrie, P., xvii
 Main, C. T., 70
 Maks, A., 11–12
 Malomo, S., 5
 Mandel, R., 18
 Manzungu, E., xvii–xviii
 Margat, J., 42, 65–66
 Margolis, J., xviii
 Martello, M. L., 22
 Martin, R., 140, 144
 Marty, F., 9
 Matson, P. A., 22
 Matson, R., 244–245
 Matsumoto, K., x, xvii, xxv, 66, 67, 69, 266
 Matthews, O. P., 58
 McCaffrey, S., xvii, 27, 40, 41, 48, 50, 55, 58, 60–61
 McCarthy, J. J., 22
 McDonald, A., 46, 47
 McDonald, M., 203
 McKay, J. M., xvii–xviii, 92–93
 McKinney, D. C., 173–174
 Mechlem, K., 67
 Mehta, J., 37, 47
 Meigh, J. R., 5
 Mejia, A., 188–189
 Mestre, E., 83, 135, 159, 163, 164
 Meyer, T. A., 259
 Miley, H. W., Jr., 42
 Milich, L., 86
 Miller, C., 1, 6
 Millington, P., 135, 142, 155, 162–163, 165, 166–167
 Milner, S., 5
 Minton, J., 33
 Mirza, M., 185
 Mitchell, W., 58–59, 244–245
 Mitrany, D., 34–35
 Mlote, S., 5
 Mnookin, R. H., 33
 Moench, M., 110–111
 Mohsin, A. F., 293
 Molle, F., 58
 Montville, J., 30
 Moore, C., xvii, 33, 37, 38, 43, 44–45, 47–48, 112
 Moore, D., 209–210
 More, A., xviii
 Morgan, T., 259
 Morris, C., 257
 Morris, E., iii
 Morris, H. R., xviii
 Mostert, E., 83–84, 85, 146
 Muckleston, K., 27–28

 Mumme, S., 246–247, 248
 Murakami, M., xviii
 Murphy, I., 35, 44
 Myers, N., 11–12

 Nachtnebel, H. P., 151, 152
 Naff, T., 61, 244–245
 Nagle, W. J., 5, 83–84
 Nagy, L., 6
 Nakayama, M., xvii–xviii, 1–2, 21, 22, 52, 79–80, 83–84, 86–87
 Nandalal, K. D. W., iii, 49, 50, 77–78
 Nasser, G. A., 201, 203
 Natchkov, I., 152
 Natharius, J. A., 1, 5, 63–64
 Nehru, J., 191–192
 Nemes, N., 250–251
 Netanyahu, S., 36, 50
 Neuman, S., iii
 Newton, J. T., x, xvii, 169
 Ng, I., 258–259
 Ng, T., 259, 260
 Nguyen-Duc, L., 22, 78, 92
 Nichols, J., 31
 Nicol, A., 20
 Niem, N.T., 155
 Nitze, W., 88

 O'Brien, K., 22
 Odom, O., xvii
 Officer, L. H., 252, 253, 254, 255–256
 O'Leary, M., xvii–xviii
 Oleson, J. P., 3
 Oliver, J. I., 87–88
 Olson, D., 155
 Omernik, J. M., 83
 Onn, L. P., 258–259
 Onta, P. R., 21
 Oppenheimer, J., 42
 O'Regan, D., 5
 Orenstein, S. G., 28, 35
 Osmaston, H., iii
 Ostrom, E., 51, 86
 Ostrom, V., 142
 Ouyahia, M. A., 262
 Owen, T., 26
 Oyebande, I., iii
 Ozal, T., 244–245
 Ozawa, C., 88–89

 Page, B., 84
 Painter, A., 28
 Paisley, R., 50, 55
 Pallas, P., 65–66
 Palmer, R., 77–78
 Paoletto, G., 21
 Paul, S., 83–84
 Paul, T. V., 21
 Peabody, N. S., III, 46
 Pearce, F., 185–186
 Pender, J. K., 1, 5, 63–64
 Peppet, S. R., 33
 Pereira, A. L., 151
 Peres, S., 82
 Peters, J., 35
 Phelps, B., xviii
 Pitman, K., xviii
 Polsky, C., 22
 Postel, S., xvii, xxii, 10, 17, 20
 Pozo de Castro, M., 149
 Preakle, K., 209–210
 Pritchett, C. H., 141

- Pritchard, L., 22
Pulsipher, A., 22
Puri, S., 65–66, 67
- Racellis, M., 85–86
Radcliffe, C., 191
Radosevich, G., 155
Ragland, S., 36
Raiffa, H., 47
Ramu, K., 155
Rangeley, W., 46
Rasheed, A. L., 245
Ravnborg, H. M., 16
Reagan, R., 143
Reisner, M., 1
Reiss, P., xvii
Remans, W., 9, 10–11, 12
Rende, M., 256
Renkewitz, G., xviii
Reuss, M., xxii–xxiii, 147
Revollo, M., 212
Reyes, R., 249–250
Richardson, J., 11–12
Rieu-Clarke, A., xvii–xviii
Rinaudo, J. D., 5
Ringler, C., 107
Rodda, J. C., iii, 52
Rodionov, V., 150
Rogers, P., 36, 37, 39–40, 42, 48–49, 50, 119
Rong, X., 155
Roosevelt, F. D., 141
Roosevelt, T., 83
Rosegrant, M. W., 6
Rosenne, S., 11, 55, 58
Ross, J., vii
Roth, E., 251, 261
Rothfelder, J., 27
Rothman, J., 70, 90, 99
Rubin, J. Z., 34, 89, 90
Rubio, S., 36
Rudquist, A., 84
Ruziev, U., 150, 155
- Sabatier, P. A., 89
Sadoff, C. W., xvii, xviii, 47, 51, 52, 76, 103–104, 111, 112
Salamé, L., xvii
Saleth, R. M., 51–52
Salewicz, K. A., 1–2, 52, 83–84
Salman, L., 85
Salman, S., xvii, 55
Samad, M., 5
Samson, P., 10–11
Sanchez-Fresneda, C., 149
Saunders, D., 33
Savenije, H. H. G., 61, 146, 250
Scanlon, J., 250–251
Schaaf, C. H., 219
Schad, T., 135
Schad, T. M., 87
Schama, F. S., 31
Scheuer, S., 261–262
Schiller, A., 22
Schlager, E., 48
Schmida, L., 11–12
Schulze, R. E., 5
Schurmeier, D. R., 50
Schwan, P., 135
Segal, D., 258–259
Selby, J., 15
Selznick, P., 140
Serageldin, I., 11
- Seyam, I. M., 61
Shahin, M., 58–59
Shamir, U., xviii, 17, 20, 22, 41, 61, 62–63
Shamir, Y., xviii, 33, 35
Sharma, K. D., iii
Shatanawi, M., xviii
Shaw, W. D., Jr., 50
Shela, O. N., 151
Sherk, G. W., 27, 87
Shevchenko, M., 150
Shiklomanov, I. A., iii, 65–66
Shinawatra, T., 236–237
Shmueli, D., 17, 61, 62–63
Shovlin, M., xvii
Shubik, M., 42
Shuval, H., 70
Simonovic, S. P., 49, 50, 77–78
Simpson, L. D., 262
Smith, C., 22, 89
Smith, N., 31
Smith, T. J., 27
Smout, I., 5
Snyder, P., 42–43, 50, 116–117
Soden, D. L., 77–78
Sokolov, S., 22, 150, 155
Solanes, M., xviii
Solomou, S. N., 252, 253, 254, 255–256
Song, J., 27
Sorooshian, S., iii
Spector, B. I., 28
Spreij, M., 50–51
Sprout, H., 9–10
Sprout, M., 9–10
Stahl, K., xvii–xviii, xxv, 12, 19, 20–21, 24, 25–26, 48
Stålnacke, P., 51–52
Starr, J. R., 9, 10
Stassen, H., 204
Stauffer, T., 11–12
Stein, J. G., 35
Steiner, R. C., 144
Stern, P. C., 5
Steyl, I., 5
Stork, J., 11–12
Strauss, L., 33
Stucki, P., 12
Subramanian, A., 42–43, 250, 251
Sullivan, C. A., 5
Susskind, L., 33–34, 37, 88–89
Swain, A., 22, 62, 77–78, 91–92
Swallow, B. M., 27
Szöllösi-Nagy, A., xv, xvii
- Taenzler, D., xxii
Tafflesse, S., 188–189
Takeuchi, K., iii
Tanzeema, S., 185
Tanzi, A., 55–56, 60
Tate, E. L., 5
TeBrake, W. H., 147
Teclaff, L., 55–56, 82, 83
Teilhard de Chardin, P., vii
Thissen, W. A. H., 146
Thomas, K., 36
Thomas, L., 4
Tortajada, C., 51–52, 54, 93
Toset, H. P. W., 26
Toynbee, A., 9
Trachtenberg, Z., 89
Trolldalen, J. M., 5–6, 10, 45, 46, 52
Trottier, J., 11–12, 27
Tsur, Y., 42

- Tujchneider, O. C., xvii–xviii
 Tulumello, A. S., 33
 Turner, B. L., II, 22
 Turton, A. R., xvii–xviii, 21, 22, 77, 78, 87, 151
- Uitto, J. I., 21, 47
 Uphoff, N., 83–84
 Ury, W. L., 33, 34, 35, 37
 Utton, A., 57–58
 Utton, R., 60
- Valente, M., 187
 van Beek, E., 146
 van Dam, J. C., iii
 van der Zaag, P., xvii–xviii, 61
 van Niekerk, P. H., 151
 van Noordwijk, M., 27
 Varady, R. G., 54, 86
 Varis, O., xvii–xviii
 Vaz, I., 151
 Vinogradov, S., xvii–xviii, 173–174
 Vlachos, E., 6, 35, 44, 45–46, 61
 Vogel, C., 22
 von Igel, W., 65–66
- Walden, G., 27
 Walker, G. B., 48–49
 Wall, S., xviii
 Walling, D. E., iii
 Ward, B. S., I, 5, 63–64
 Ward, M. D., 24
 Warshall, P., 30
 Waterbolk, H. T., 30–31
 Waterbury, J., xviii, 20, 22–23, 35, 69–70, 75
 Watterson, S. A., xvii
 Webb, A., 35, 44
 Wen Jiabao, 237, 239
 Wendall, H., 135
- Wescoat, J. L., Jr., 50, 55–56, 61
 Wesseling, H., 41
 Westing, A. H., 10–12
 Wheeler, H. S., iii
 Wheeler, R., 219, 222
 White, G., 50, 142, 220
 Whittington, D., xvii, 27, 41, 47, 111
 Widstrand, C., 35
 Wieriks, K., 147
 Wilkenfeld, J., 24
 Willcocks, W., 83
 Williamson, S. H., 252, 253, 254, 255–256
 Wishart, D., 34–35, 111
 Wisner, B., 22
 Wittfogel, K. A., 4, 9–10, 30–31
 Wohlgenant, T., I, 34–35, 84, 91–92
 Wolf, A. T., i, v, vii, x, xv, xvii–xviii, xxii, xxv, 1, 5, 6, 9–10, 12, 13, 14, 15–16, 19–21, 22, 23, 24–26, 27, 28, 34–35, 36, 41, 42, 48, 50, 52, 55, 61–62, 63–64, 69, 70, 71–72, 75, 78, 84, 86, 89, 91–92, 97, 99, 108, 116, 169
 Wolff, G., 249–250
 Worster, D., 31
 Wouters, P., xvii–xviii, 50, 55–56, 59–60
- Xia, J., 155
- Yardley, J., 239
 Yian, N.G., 258–259
 Yisraeli, M., xviii
 Yoffe, S. B., xvii–xviii, xxv, 9, 12, 13, 14, 19–21, 24, 116
 Yolles, P., 36
 Young, G. J., 52
 Young, O., 49, 51
- Zartman, I. W., 35, 47, 89, 90
 Zarubova-Pfeffermannova, O., xvii, 75
 Zawahri, N. A., 51
 Zilleßen, H., 84

Subject Index

- acequia* systems, 3, 58, 135
 adaptive management, 51, 142
 ADR. *See* alternative dispute resolution
 Afghanistan, 31, 271
 Agenda 21 (UNCED), 53, 54
 agriculture, 284. *See also specific topics, countries*
 dams and, 15, 19, 20, 22
 environment and. *See* environmental issues
 irrigation and. *See* irrigation
 pesticides, 15, 173
 poverty and, 5
 subsidies for, 260
 suspended solids and, 15
 virtual water and, 19, 23, 41, 50
 world water use for, 17
 air quality, 197
 Albania, 298
 All-Arab Diversion Project, 201
 allocation, treaties and. *See specific treaties, topics*
 alternative dispute resolution (ADR), xxiv, 28, 33, 52
 barriers to, 88
 dispute systems design and, 108
 environmental disputes and, 35
 literature on, 34, 35
 models for, 34, 35
 policy analysis and, 88
 principles of, 34
 starting points in, 109
 zero-sum systems and, 33
 analytic models, 87, 89, 103
 Angola, 21, 294
 animators, definition of, 85
 appreciable harm principle, 1, 11
 aquifers. *See also specific systems, topics*
 definition of, 131
 draft articles on, 131
 fossil, 110, 118
 groundwater and, 65
 Guaraní Aquifer. *See* Guaraní Aquifer
 hydrothermal energy and, 187
 international, 66
 ISARM program, 66
 Madrid Workshop on, 67
 Matsumoto study, 67
 pollution and, 187
 recharge zone, 131
 saltwater intrusion in, 256
 sovereignty over, 131
 U.S./Mexico and, 246
 Araba/Arava River, 280
 Arabian Gulf, 265
 Araks River, 288
 Aral Sea, 2, 5, 172, 269, 280
 crisis and, 280
 ecosystems of, 15
 environmental issues, 173
 International Fund for, 174
 irrigation and, 172
 Kazakhstan and, 16, 173
 Kyrgyzstan and, 16, 173
 Nukus Declaration and, 173, 174
 physical parameters, 172
 Soviet Union and, 173
 Syr Dar'ya and, 16
 Tajikistan and, 173
 TFDD study and, 20
 tributaries and, 19
 Turkmenistan and, 173
 Uzbekistan and, 16, 173
 water quality, 280, 294
 Aras River, 312
 Argentina, 296
 Del Plata Basin and, 44
 Guaraní Aquifer and, 187
 Mexican model and, 159
 RBOs in, 160
 Yacyreta Treaty and, 209
 ARIA model, 99
 Arkansas River, 299, 304
 Armenia, 206
 Armitage, R., 201, 205
 arms trade, 256
 Asia Development Bank, 116
 assistance agencies, 118
 Aswan Dam, 20, 316
 asymmetrical relations, 4, 21
 Atoms for Peace Conference, 117
 Atrak River, 288, 312
 Australia, 86, 165, 263
 Austria, 72, 176
 Bavaria and, 71, 73, 309
 Czechoslovakia and, 285, 309
 Germany and, 281
 Hungary and, 290, 309
 authoritarianism, 5
 Azerbaijan, 206

 Balkan states, 5
 Bamako Convention, 241
 Bangladesh
 allocations and, 310
 Farakka Barrage and, 185, 186
 Ganges and. *See* Ganges River
 India and, 10, 16, 62, 79, 110, 183, 184, 185, 186, 310

- Bangladesh (*cont.*)
Pakistan and, 186
World Bank and, 36
- Bank of America, 120
- BAR. *See* basins-at-risk scale
- basin systems. *See also specific systems*
definition of, xxiii
land surface of, 1, 5
- basins-at-risk (BAR) scale, 13
- BATNA. *See* best alternative to negotiated agreement
- Bavaria, 71, 73, 309
- Bear River, 302
- Bechtel Corporation, 117, 120
- Belgium, 148, 262, 268
- Belgrade Convention, 181
- Bellagio Treaty, 57
- benefits approach, 73
- Berlin Rules, 45
- best alternative to negotiated agreement (BATNA), 37, 47, 107
- Black Sea, 175, 180
- Bolivia. *See also specific resources, topics*
Desaguadero River and, 214
Joint Sub-commission and, 212
La Plata basin and, 44, 208
privatization in, 17
public participation and, 160
TDPS system and, 213
Titicaca and, 211, 212
- Botswana, 278, 282, 294
environmentalists and, 85
Okavango Delta and, 15
wildlife and, 21
- Brazil, 84, 209, 296. *See also specific resources, topics*
CEIVAP and, 159
Curu River basin and, 161
Del Plata basin and, 44
federal agencies and, 162
Guaraní aquifer and, 187
Mexican model and, 159, 160
National Water Resource Policy, 262
NGOs and, 160
public participation and, 160
RBOs and, 160
Sao Francisco and, 161
Water Law and, 160
water prices, 262
World Bank and, 262
- Brecher, M., 24
- British Columbia, 139
- Bucharest Declaration, 181
- Bulgaria, 176, 269, 298
- CACO. *See* Central Asian Cooperation Organization
- Cai-Rosegrant model, 6
- Cambodia, 63, 267, 279, 283
allocations and, 315
ECAFE report, 218
Mekong River, 156, 216. *See also* Mekong River
Paris Agreement and, 221
- Camdesus panel, 53
- Cameroon, 282, 285, 286
- Camp David Accords, 47
- Canada, 15, 27, 317
allocations and, 317
Boundary Waters Treaty, 198
Columbia River and, 27, 96, 139. *See also* Columbia River
federal systems, 86
hydropower and, 73
IBWC and, 145
Middle East and, 223
Prairie Water Board, 145
RBOs, 96
Sun Belt Water and, 260
United Kingdom and, 197
United States and, 22, 42, 63, 104, 140, 145, 196, 268, 275, 300
Water Resources Protection Act, 260
- Carol River, 59
- Carter, J., 201
- cattle industry, 212
- Cauvery River, 1, 16
- Center for International Earth Science Information Network, 24
- Central Asian Cooperation Organization (CACO), 174, 175
- central planning, vs. market approach, 41
- Chad, Lake, 5, 282, 285, 286
- challenge-response model, 9
- Chile, 160
- China. *See also specific systems, topics*
allocations and, 311
Dongjiang agreement, 259
flooding and, 157
Hong Kong and, 13, 259
hydropower and, 17, 218, 237
liberalization of, 218
Mekong Committee and, 216
Nigeria and, 149
Portugal and, 149
Russia and, 71, 311
Salween River and, 236
Tarim basin, 158
Three Gorges Dam, 116
Three Rivers area, 236
water-sharing and, 21
Yellow River and, 157, 158
- Chinatown*, film, 31
- chronology, use of, 58, 70
- citizen advisory committees, 143
- civil war, 15
- Civil Works Administration (CWA), 8
- civilization, history of, 9, 31
- clean energy production, 187
- Clean Water Act (1972), 1, 143
- climate, 18, 19, 25, 58.. *See also* rainfall. *See specific types, regions*
- collaborative planning, 108
- Colorado River, 27, 62, 68, 266, 268, 276, 308
allocations and, 308
Arizona and, 1, 17
Boulder Canyon Act, 137
California Storage Act, 138
Central Arizona Project, 138
Colorado River Compact, 136
Delaware River and, 136
Glen Canyon Dam, 138
Grand Canyon and, 121
Law of the River, 136, 138
Mexicali Valley, 255
Mexico and, 138
RBO and, 136
Sao Francisco and, 162
Seven Party Agreement, 138
water quality, 276
- Columbia, 159, 160
- Columbia River, 27, 37, 41, 42
allocations and, 312
Canada, 96, 139
hydropower and, 104, 140
IJC and, 27, 139
Libby Dam and, 140
U.S. Army Corps of Engineers and, 139
United States and, 27, 63, 95, 111, 140
commodification, of water, 117, 249–250
Conflict and Peace Data Bank (COPDAB), 24
conflict management, xxiv, 1, 33. *See also specific conflicts, treaties, countries*

- ADR. *See* alternative dispute resolution
- arbitration and, 43
- asymmetric conflicts and, 21
- Berlin Rules and, 45
- case studies, 169
- causes of conflicts, 37
- change, rate of, 19
- chronology of conflicts, 15
- circle of conflicts, 37
- climate and, 25
- community mediation and, 1
- conflict analysis, 27
- context of, 19, 27
- cooperation and. *See* cooperation
- costs, of water wars, 23
- cultural differences and, 34
- destructive conflicts, 38
- dispute resolution, 169
- environmental conflicts and, 1
- escalatory spiral of, 38
- examples of conflicts, 16
- factors in, 19, 22
- five styles of, 34
- flashpoints and, 108
- four stages in, 97, 106
- history of, 3
- institutional capacity and, 19, 22, 43, 48
- integrative bargaining, 33, 47
- intervention strategies, 38
- labor management and, 1
- likelihood of, 19
- litigation and, 44
- local context and, 27
- mediations and, 44
- negotiations, phases of, 33
- polarization and, 44
- positional bargaining, 47
- process of, xxiv, 43
- resiliency and, 22
- scientific approach to, 5
- shared interests and, 22, 39
- social learning process, 37
- structural conflicts, 38
- sustainability and, 4, 22, 51
- systems design and, 108
- third-party decision-making, 43
- time lag in, 14
- two principal factors, 19
- values of conflict, 38
- vulnerability and, 20, 22
- water wars, 10, 23. *See specific conflicts*
- Congo River, 5, 277, 278
- consensus-seeking, 84
- conservation, xxiv, 34. *See* environmental issues
- Constance, Lake, 311
- Convention on the Law of the Non-Navigational Uses of International Watercourses (1997), 55, 123
- cooperation. *See also specific topics, systems*
- conflict and, 39
- GDPs and, 24
- incentives to, 39
- institutional level, 4
- integrative bargaining, 33
- irrigation and, 30
- joint benefits of, 41
- multipurpose, 39
- scarcity and, 27
- shared interests and, 39
- treaties and, 22
- upstream/downstream activities, 39
- water sharing and, 29
- zero-sum competition, 5
- coordination, principle of, 177
- COPDAB. *See* Conflict and Peace Data Bank
- Correlates of War Project 2006, 24
- corruption, 257
- Costa Rica, 160
- cost-sharing formulas, 136
- cotton, 231
- crisis, use of term, xxiv
- critical-path studies, 85
- Croatia, 176
- cross-cultural communication, 89
- cultural geography, 73
- Cunene River, 22, 74, 255, 313
- CWA. *See* Civil Works Administration
- Cyprus, 256, 259
- Czech Republic, 176
- Czechoslovakia, 72, 272, 273, 288, 309, 310
- Dakar Convention, 241
- dams, 15, 20, 22, 111. *See also* hydroelectricity. *See also specific locations*
- Danube River, 266, 290
- agreements on, 6
- Belgrade Convention, 175
- black box principle and, 177
- Bucharest Declaration, 176, 180, 181
- cooperation and, 151
- Danube Commission, 175
- Danube Day, 180
- Danube Forum, 178
- Danube River Convention, 65, 68, 106, 179
- Environmental Program for, 29, 84, 175, 176, 177, 178, 179, 181
- flashpoints and, 107
- functional agreements and, 6
- Gabcikovo-Nagymaros Project, 56
- Hungary and, 30
- ICJ and, 11
- ICPDR and, 180, 181
- physical parameters, 175
- political blocs and, 175
- Pollution Reduction Programme, 180
- Protection Convention for, 178, 179
- public participation and, 180
- riparian states, 5, 175
- River Basin Management Plan, 180
- Strategic Action Plan, 177, 178, 179
- waste water and, 281
- water quality, 274, 281, 285, 289, 291, 298
- wetlands and, 175
- Dead Sea, xxi, 226
- decentralization, enforcement and, 106
- decide-inform-justify approach, 84
- decision making, information and, 113
- deforestation, 209
- Del Plata Basin, 44
- Delaware River, 136, 144, 304, 305
- democratic institutions, 85
- Denmark, 148, 262
- Desaguadero River, 213, 214
- desalination, 18, 34, 75, 109, 227
- costs of, 21
- geopolitics of, 117
- Israel and, 23
- MEDRC project, 229
- Mexico and, 110
- nuclear power and, 111, 117
- price of, 117
- saline springs and, 280
- Singapore and, 258
- United States and, 260
- war and, 23
- desertification, 127, 280, 282
- determinism, 6, 9, 37

- digital mapping, xxv
diseases, xxii, 17, 118, 127, 241
Dongjiang agreement, 259
drip irrigation, 109
droughts, 127
 annual losses, xxi
 conflicts and, 19
 desertification, 282
 effects of, 240
 famine and, 6
 first in use system, 150
 flashpoints and, 28
 hydrologic cycle and, 77
 populations at risk, xxi
 recurrent, xxi
 simulations for, 144
 STELLA model, 144
dual-concern model, 34
Dublin Statement on Water and Sustainable Development, 53, 249
- EBRD. *See* European Bank for Reconstruction and Development
EC. *See* European Commission
ECAFE, 217
Ecuador, 160, 312
EDR. *See* environmental dispute resolution
EEB. *See* European Environmental Bureau
EEC. *See* European Economic Community
efficiency, vs equity, 41
Egypt, 75
 allocations and, 315
 Aswan Dam and, 233, 316
 Ethiopia and, 59
 irrigation and, 231
 Jordan River and, 199
 Nile River and, 14, 42. *See* Nile River
 Nile Waters Treaty, 234
 Sudan and, 22, 69, 233
 United Kingdom and, 272, 315
EIB. *See* European Investment Bank
Eisenhower, D., 199
Elbe River, 281
electrical energy, xxi, 38. *See* hydroelectric power
empires, break-up of, 24
enforcement mechanisms
 decentralization and, 106
 ICJ and, 115
 institutions and, 115
 interventions and, 44
 law and, 106
environmental dispute resolution (EDR), 28
environmental issues, 15, 74. *See also specific issues, topics*
 Aral Sea and, 173
 California dialogue on, 85
 conservation and, 34
 damages, mediation on, 45
 Danube River and, 175
 ecological awareness and, 4, 27, 44, 85
 ecosystems and, 50, 127
 ecotourism and, 15
 EDR and, 28
 endangered species and, xxii, 27
 environmental security, 9, 22
 environmentalism and, 4, 27, 44, 85
 FCR and, 251
 international politics and, 9
 Lake Titicaca and, 212
 monocultures and, 173
 NGOs and, 39
 politics and, 34
 pollution and. *See* pollution
 social claims and, 3
 sustainability and, 4, 51
 systems theory and, 87
 United States and, 7, 8, 27, 142
 water management and, 4
Environmental Protection Agency (EPA), 8, 142
EPA. *See* Environmental Protection Agency
equity
 criteria for, 61
 efficiency and, 41
 utilization principle, 60, 64
Eritrea, 74, 254, 311
erosion, 15, 127, 282
ESAs. *See* external support agencies
Estonia, 51
ethical issues, 18, 84, 121
Ethiopia, 46, 153
 allocations and, 315
 Egypt and, 59
 Nile and, 20, 42, 234
 Turkey and, 58
 upstream riparians, 18
Euphrates River, 11, 58, 73. *See also* Tigris-Euphrates system
Iraq and, 245
 riparian rights and, 18, 58
 Syria and, 244, 245
 technical committees for, 45
 Turkey and, 14
 unilateral development, 36
European Bank for Reconstruction and Development (EBRD), 176
European Commission (EC), 176, 261
European Economic Community (EEC), 5, 88, 268, 281
European Environmental Bureau (EEB), 251
European Investment Bank (EIB), 176
European Union (EU). *See also specific countries, topics*
 EU water directives, xxii
 Framework Directive, 180, 261
 Middle East and, 223
 water prices and, 262
eutrophication, 15, 275
evolutionary theory, 4
expert panels, use of, 45
exports, of water, 19, 23, 41, 50, 260
external support agencies (ESAs), 7, 119
- FAO. *See* United Nations Food and Agriculture Organization
Farakka Barrage, 183
FCR. *See* Full Cost Recovery
Federal Energy Regulatory Commission (FERC), 8
Federal Power Commission (FPC), 8
federal systems, 86, 92, 106, 135, 147
Federal Water Pollution Control Act, 304
federalist systems, 92, 106, 147
FERC. *See* Federal Energy Regulatory Commission
Finland, 71, 148, 311, 317
First Arab Summit (1964), 201
Fisher-Ury model, 34
fishing, 15, 39, 212
flooding, xv, 28, 39, 77, 241
 annual losses from, xxi
 China and, 157
 flood control, 6
 freshwater ecosystems and, 15
 Mozambique and, 77
 pollution and, 241
 population at risk, xxi
Ford Foundation, 220
forestry, 284
FPC. *See* Federal Power Commission
France
 allocations and, 311, 317
 Dordogne River and, 84

- Germany and, 270
Great Britain and, 269, 270, 271
Italy and, 311
Lac Lanoux case, 58, 69, 71
Middle East and, 223
RBOs and, 83, 92, 146
SAGE plans, 146, 148
Spain and, 59, 317
Switzerland and, 267, 272, 273
water agencies in, 146
water prices and, 262
- free market model, 87
Full Cost Recovery (FCR), 42, 251
functionalist theory, 34, 35
- G-8 meetings, 53
Gabcikovo-Nagymaros Project, 11, 56
Galilee, Sea of, 20, 62, 201, 203
game theory
allocations and, 42
analytic models and, 48
Chicken game, 36
Middle East and, 42
Prisoner's Dilemma, 4, 36
stag hunt model, 36
tit-for-tat strategy, 4
zero sum. *See* zero-sum systems
- Gandak River Treaty, 79
Ganges River, 252
Bangladesh and, 10, 42, 62, 181
British administration of, 19
demand and, 17
diversion of, 182, 184
Farakka Barrage, 62, 181
game theory and, 42
Ganges Waters Agreement, 73, 184, 186, 187
India and, 14, 42, 182, 185
Johnston negotiations and, 77, 110
Nepal and, 42, 182
Pakistan and, 182
Pareto method and, 37
regional institutions, 91
riparian countries, 5, 18
- GATT agreements, 260
GEDS. *See* Global Event Data System
GEF. *See* Global Environment Facility
Geneva Aquifer, 68, 267
geographic information system (GIS), 19
geopolitics of, 18
German Democratic Republic, 68
Germany, 176
allocations and, 311
Austria and, 281
Belgium and, 268
Czech Republic and, 281
EEC and, 268
federal systems in, 147
France and, 271
Guaraní aquifer, 188
Lithuania and, 293
Luxembourg and, 270, 288
Netherlands and, 297
Poland and, 300
Ruhr system and, 146, 148
water prices and, 262
- Getting to Yes* (Fisher and Ury), 34
Ghana, 151
Gibbons vs. Ogden, 83
GIS. *See* geographic information system
Global Alliance on Water Security, 54
Global Environment Facility (GEF), 47, 54, 73, 187
Global Event Data System (GEDS) Project, 24
Global Water Summit (1991), 34, 35, 200, 223
globalization, 117, 249–250. *See also specific topics, organizations*
Great Britain, 74, 146, 300
Abdali and, 74, 254, 266
allocations and, 315
France and, 269, 270, 271
India and, 252
Italy and, 254
National Rivers Authority, 149
privatization and, 95
RBOs in, 149
statist-liberal paradigm, 148
Sudan and, 254, 270
United States and, 308
Yemen and, 293
- Great Lakes, 198, 268, 275
Great Lakes Agreement, 65
pollution and, 198
St. Lawrence System, 197
United States and, 303
water quality, 197, 198, 275, 303
- Greece
hydroelectricity and, 148
water exports and,
Yugoslavia and, 270
- Green Cross International, 54
gross domestic product (GDP)
cooperation and, 24
fluctuations of, 75
rainfall and, 29
treaties and, 27
- groundwater, 57, 67, 74
aquifers, 65. *See* aquifers
Guaraní Aquifer, 188. *See* Guaraní Aquifer
hydrologic cycle and, 68
ILC and, 57
international treaties, 65
ISARM program, 66
Minute 242, 248
overexploitation of, 187
pollution and, 187, 197
recharge rates, 110
safe yield, 110
subsoil and, 68
surface water and, 68, 110
treaties with provisions, 266, 274
- Guaraní Aquifer, 187
groundwater and, 187
La Plata basin and, 188
NGOs and, 188
pollution and, 188
Project for Environmental Protection, 187
World Bank and, 54
- Guatemala, 160
Guinea, 242, 285
Gulf Coast, 44
Gulf Wars, 202, 223, 245
Guntlett Foundation, 176
- Haff River, 293
Hariud River, 288
Harmon Doctrine, 27, 58, 69
Harvard Institute for International Development, 256
Helsinki Rules (1966), 315
drainage basins and, 55
equitable use and, 222
factors in, 73
ILA and, 2, 52, 55, 56
Mekong Committee and, 55, 221
United Nations and, 55

- historic rights, principle of, 58
holistic approaches, 89
Hong Kong, 13, 259
hot-tub approach, 43
human rights, water and, 251
Hungary, 176
 allocations and, 310
 Austria and, 290, 309
 Czechoslovakia and, 289, 310
 Danube and, 30
 Slovakia and, 56
 USSR and, 291
 Yugoslavia and, 270, 298
hydroelectric power, 75, 201
 Africa and, 6
 Canada and, 73
 China and, 17, 218, 237
 Columbia River and, 104
 corruption and, 257
 dams and, 15, 22. *See also* dams
 downstream flows and, 39
 Greece and, 148
 hydropolitics and, 218
 Kazakhstan and, 22
 La Plata basin and, 208
 Mekong and, 218
 Mexico and, 84
 Niagara and, 22, 317
 Portugal and, 313
 production of, 6
 South West Africa and, 22, 255
 TVA and. *See* Tennessee Valley Authority
 U.S. and, 73
 Yarmuk and, 205
hydrography, 58, 70
hydrologic change, 48, 50, 77
HYDROMET, 234
hydropolitics, 83
 cooperation and, 30
 hydraulic imperative theory, 10, 11
 hydrodiplomacy, 9
 hydroelectric power and, 218
 Nile and, 234
 political issues, 27, 115
 resilience and, xxiii, 22
 transboundary disputes and, 9
 use of term, 22
hydrothermal energy, 187, 188
Hydrovia project, 209, 210

IAEA. *See* International Atomic Energy Association
IBWC. *See* International Boundary Waters Commission
ICB. *See* International Crisis Behavior
ICJ. *See* International Court of Justice
ICPRB. *See* Interstate Commission on the Potomac River Basin
ICWE. *See* International Conference on Water and the Environment
IEC. *See* international environmental conflict resolution
IHP. *See* International Hydrological Programme
IJC. *See* International Joint Commission
ILA. *See* International Law Association
ILC. *See* International Law Commission
impact assessments, 4, 7
imperialism, 7
INBO. *See* International Network of Basin Organizations
incentive systems, 5, 75
Incomati River, 15, 16, 277, 278
India, 15, 16, 47
 allocations and, 310, 313
 Bangladesh and, 10, 16, 62, 79, 110, 183, 184, 185, 186, 310
 Cauvery River and, 1
 Delhi Agreement, 191
 Farakka Barrage and, 183, 185, 186
 Gandak project, 313
 Ganges and. *See* Ganges River
 Great Britain and, 252
 Indian Independence Act, 191
 Indo-Bangladesh Memorandum, 185
 Indus, 186
 Indus River and. *See* Indus River
 internal water conflicts, 1
 irrigation and, 15
 Kashmit and, 191, 194
 Narmada River project, 116
 Nepal and, 22, 78, 313
 Pakistan and, 13, 42, 155, 186, 190, 194, 254, 287, 313
 partition and, 191
 Punjab province, 191
 Sind province, 191
 Standstill Agreement, 191
 state water control, 18
 TVA and, 191
indifference-curve analogy, 36
Indonesia, 159
Indus River, 37, 75, 105, 190, 252, 284, 317
 Black initiative, 192
 British administration of, 19
 claims of riparians, 191
 Dipalpur Canal and, 191
 Eastern Rivers, 254
 flashpoints and, 108
 IBRD and, 254
 India and, 186, 254
 Indus Commission, 13, 92, 155
 Indus Water Treaty, 14, 69, 73, 193, 194, 287
 irrigation and, 191
 link canals, 156
 mediation and, 45
 Pakistan and, 186, 254
 partition and, 191
 regional institutions, 91
 technical committees, 45
 TVA and, 191
 wars and, 13
 water quality and, 287
 Western Rivers, 254
 World Bank and, 192, 314
industry, 6, 15, 19, 21, 291. *See specific systems*
information technology (IT), 116
information, use of, 50
 data-sharing, 77
 decision making and, 113
 institutions and, 48, 113
 public participation and, 85
Institut de Droit International, 58
Institute of International Law, 52
institutions. *See specific systems, treaties, organizations*
 allocations and,
 authority and, 106
 capacity and, 48
 collaboration and, 112
 conflict management and, 43
 control and, 18, 19
 cooperation and, 4, 22
 decision-support tools, 112
 definition of, xxiii, 51
 development of, 48, 50
 dispute systems design, 108
 ecosystems and, 51
 enforcement mechanisms, 62, 115
 environmental institutionalism, 51
 Europe and, 146
 GDP and, 27
 information and, 48, 113
 interjurisdictional, 2

- international agencies, 52. *See specific organizations*
- investment and, 85
- IWRM and, 112
- mechanisms of, 20
- models of, 51
- modern concerns of, 63
- monitoring provisions, 62
- multipurpose agreements, 45
- multiscalar studies, 27
- needs-based criteria, 70
- negotiations, phases of, 33
- NGOs and, 87
- number of, 36
- organic agreements, 29
- prior uses and, 71
- RBOs and, 82
- resiliency of, 22
- right-based criteria, 70
- sovereignty and, 51, 87
- statistical summary, 62
- subsidiarity in, 86
- technical knowledge and, 33
- technical staff and, 113
- traditional, 6
- transaction costs, 51
- types of models and, 87
- typology of, 27
- UN list of, 61
- value priorities and, 2
- water quality and, 274
- Integrated Water and Resources Management (IWRM), 8, 92, 96, 141
- integration, principle of, 177
- integrative bargaining, 33, 44, 47
- inter agency commissions, 142
- interbasin transfers, 118
- interdisciplinary analysis, 50
- interest-based bargaining, 48
- intergenerational equity, 3
- International Atomic Energy Association (IAEA), 188
- International Bank for Reconstruction and Development (IBRD), 254
- International Boundary Waters Commission (IBWC), 45, 145, 246
- International Conference on Water and the Environment (ICWE), 53, 249
- International Court of Justice (ICJ), 17, 58
- Danube case, 56
- enforcement mechanisms, 115
- guidelines of, 55
- international water law and, 11
- International Crisis Behavior (ICB) dataset, 24
- international environmental conflict resolution (IEC), 5
- International Hydrological Programme, iii
- International Joint Commission (IJC), 27, 45, 196, 197, 198
- Columbia River and, 139
- structure of, 145
- international law, 1, 55
- International Law Association (ILA), 45, 55. *See also Helsinki rules*
- International Law Commission (ILC), 55, 57
- International Network of Basin Organizations (INBO), 54, 119
- International Shared Aquifer Resources Management (ISARM) program, 66
- International Water Academy, 54
- International Water Assessment Center, 54
- International Water Law Research Institute (IWRLI), 24
- International Waterways Commission, 197
- Interstate Commission on the Potomac River Basin (ICPRB), 95
- interstate commissions, 142
- Interstate Sanitation Commission, 65, 301
- interventions, 44
- investments, 5. *See also specific organizations, projects*
- development banks, 116
- financial incentives, 75
- funding and, 113
- interventions, 44
- privatization and, 117
- Iran, 18, 273, 297
- allocations and, 312
- Iraq and, 266
- Soviet Union and, 22
- USSR and, 288, 312
- Iraq, 18, 297
- allocations and, 310
- Iran and, 266
- Johnston Plan and, 203
- Kuwait and, 22, 310
- Syria and, 36, 243
- Tigris basin and, 243
- Turkey and, 245
- Ireland, 272
- irrigation, 31, 39. *See also specific locations*
- Africa and, 6
- agriculture and, xxii, 17
- allocations and, 308
- Aral Sea and, 172
- bureaucracy and, 31
- civilization and, 31
- cooperation and, 30
- dams and, 15, 19, 20, 22
- drip irrigaton, 109
- Egypt and, 231
- Hammurabi code, 82
- historical studies, 82
- India and, 15
- Indus River and, 191
- land, loss of, xxii
- medieval period and, 3, 32
- Mekong Delta and, 17
- Mexico and, 308
- Middle East and, 3
- Namibia and, 15
- navigation and, 82
- Nile and, 231
- seawater and, 117, 256
- small scale, 30
- Sudan and, 231
- tanning industry and, 15
- user participation and, 84
- Vietnam and, 17
- ISARM. *See International Shared Aquifer Resources Management*
- island states, 259
- Israel, 15. *See also specific countries, topics*
- All Israel Plan, 199
- allocations and, 311
- Arab-Israeli negotiations, 200
- Cotton Plan, 200
- Cyprus and, 256
- desalination and, 23
- Egypt and, 11
- Johnston plan, 110, 266. *See Johnston agreement*
- Jordan and, 62, 68, 74, 202, 228, 266, 280, 290
- Jordan River, 199. *See Jordan River*
- Lebanon and, 11
- Madrid talks, 202
- Mukheiba Dam and, 201
- Palestine and, 68, 70, 72, 74, 202, 226, 266, 278, 311
- peace treaties, 15, 74, 202
- Picnic Table talks, 203
- pollution and, 17
- residue flow to, 110
- Sea of Galilee, 20, 62, 199, 201, 203
- Syria and, 20, 36, 198
- Turkey and, 244, 256
- water control in, 18
- water exports,
- water wars, 11, 12
- weapons trade, 256
- IT. *See information technology*

- Itaipu dam, 209
- Italy, 269, 271
- France and, 311
 - Gash River and, 254
 - inter-regional planning, 148
 - ITALCONSULT, 47
 - Sudan and, 254
 - Switzerland and, 269
 - United Kingdom and, 254, 311
 - Vatican and, 47
- IWRLL. *See* International Water Law Research Institute
- IWRM. *See* Integrated Water and Resources Management
- Japan, 30
- Johannesburg Declaration, 53
- Johnson administration, 156
- Johnston agreement, 70, 203
- allocations and, 314
 - Arab Plan and, 200
 - Iraq and, 203
 - Israel and, 110, 266
 - Jordan and, 75, 266
 - Jordan River and, 34, 75, 198
 - Middle East and, 223
 - negotiations on, 68, 77, 199
 - residue flow and, 110
 - Saudi Arabia and, 203
 - timelines for, 203
 - Unified Plan and, 200
 - water quality and, 110
- Johore River, 258
- Jordan, 77, 199
- Bunger plan, 201
 - Harza study, 198
 - Israel and, 15, 62, 68, 106, 228, 266, 280, 290
 - Johnston agreement, 75, 266
 - Jordan River. *See* Jordan River
 - Picnic Table talks, 203
 - Sea of Galilee and, 109
 - Seven Year Plan, 201
 - Syria and, 22, 199, 269, 290, 291, 314
 - TFDD study, 20
 - UNRWA and, 201
 - water control in, 18
 - water exports,
- Jordan River, xxi, 41, 45, 90
- all-Arab plan, 20
 - allocations and, 314
 - British administration, 19
 - diversion of, 199
 - ecosystems of, 15
 - Egypt and, 199
 - flashpoints and, 108
 - Israel and, 199
 - Johnston plan. *See* Johnston agreement
 - Jordan and, 199
 - Lebanon and, 199
 - Maqarin Dam, 201
 - Mukheiba Dam, 201
 - northern sources of, 199
 - Picnic Table Talks, 106, 203
 - pollution and, 17
 - riparians of, 5, 58, 224
 - Syria and, 199
 - unilateral development, 36
 - Unity Dam, 109
 - war and, 11
 - water conflict in, 17
 - water quality, 280, 290
 - Waternet Project, 228
 - Yarmuk and, 198
- Jung, C. G., 30
- Kalahari, 21
- Kazakhstan, 16, 22, 172, 173, 280, 294
- Kennedy administration, 142
- Kenya, 77, 153
- Klamath River, 27, 306
- Komadugu-Yobe basin, 154
- Kosi Treaty, 79
- Kura-Araks basin, 5, 19, 21, 205
- Kurds, 11, 58
- Kurische River, 293
- Kuwait, 22, 310
- Kyoto Protocol, 187
- Kyrgyzstan, 16, 172, 173
- La Paz Agreement, 248
- La Plata Basin, 207
- CIC and, 92
 - commissions, 28
 - Guaraní aquifer and, 188
 - hydroelectric power and, 208
 - Hydrovia project, 209, 210
 - Itaipu dam, 209
 - riparian countries, 5
 - Treaty of 1969, 209
- Labé Convention, 241
- Labrador, 260
- Lac Lanoux case, 58, 59, 69, 71
- Lagash, 12, 61
- lakewide management plans, 197
- land ethic, 111
- Lao Tze, 1, 30
- Laos, 47, 63, 267, 279, 283
- allocations and, 315
 - ECAFE report, 218
 - hydroelectric projects in, 22
 - Mekong River, 156
 - Theun-Hinboun dam, 221
- Lebanon, 23, 59, 199, 314
- Legal Assessment Model, 55
- Lempa River basin, 15
- Leopoldian land ethic, 111
- Lesotho, 277, 296, 316
- Highlands Treaty, 22, 75
 - South Africa and, 22, 46, 215, 257
 - Water Project, 195, 257
 - water quality and, 296
- Lewicki-Litterer model, 34, 36
- Libya,
- limnology, 50
- Limpopo, 277, 278
- Lithuania, 293
- Luxembourg, 270, 288
- Lyonnais des Eaux, 120
- Madrid Declaration, 52
- Malawi, 277
- Malaysia, 258
- Mali, 239, 242
- Malta,
- Manavgat River, 256
- Mandal survey, 18
- mapping, digital, xxv
- Maqarin Dam, 201
- Mar de Plata Conference (UN), 55
- market mechanisms, 50, 87, 136
- central planning and, 41
 - externality effects, 42
 - models of, 87
 - social planner approach, 42

- Matsumoto study, 67
Mauritania, 239, 242
Mayan civilization, 31
MDGs. *See* Millennium Development Goals
mediation, 44, 45. *See also specific conflicts*
medieval systems, 3, 32
Mediterranean Action Plan, 47
Medusa bags, 259
Mekong River, 16, 17, 63, 107, 156, 217, 267
 allocations and, 315
 Basin States, 156
 Cambodia and, 156, 216
 cascade dams on, 111
 China and, 216
 Danube plan and, 177
 ECAFE report, 218
 equality of right and, 105
 expenditures, 92
 Helsinki Rules and, 55
 hydroelectric power and, 218
 Indus commission and, 155
 irrigation and, 17
 Mekong Agreement, 22, 63, 74, 75
 Mekong club, 219
 Mekong Committee, 28, 55, 177, 216
 MRC and, 86, 92, 155, 156
 Myanmar and, 218
 public participation and, 86
 riparians of, 5. *See specific countries*
 sustainable development of, 279
 Thailand and, 22, 216
 Vietnam and, 216
 water quality, 283
 Wheeler Mission and, 222
Memel River, 293
MERCOSUR trade mechanism, 187
meteorology, 50
Meuse River, 297
Mexicali Valley, 255
Mexico, 17, 18, 93, 162
 AHRS and, 162
 aquifers, shared, 248
 Chapala Basin, 161
 Colorado River, 138. *See also* Colorado River
 desalination and, 110
 environmentalists and, 85
 groundwater and, 246
 Harmon Doctrine, 27
 hydroelectric power and, 84
 irrigation and, 308
 Lerma Chapala system, 163
 Mexicali Valley, 255
 Mexican model and, 159
 Mexican Water Treaty, 138
 Minute 242, 248
 Rio Grande and, 27. *See* Rio Grande River
 shared aquifers, 248
 socioeconomic development in, 162
 U.S. and, 22, 27, 62, 65, 70, 71, 110, 138, 246, 266, 268, 273, 276, 277, 308
Middle East. *See also specific countries, topics*
 Canada and, 223
 diplomacy and, 35
 EU and, 223
 France and, 223
 game theory and, 42. *See also* game theory
 hydraulic imperative theories, 10
 hydro-conflict, 223
 irrigation and, 3
 Johnston plan. *See* Johnston agreement
 Madrid peace talks, 202
 mediation and, 45
 medieval period, 3
 Moskow talks, 191, 202
 multilateral talks, 35
 Multilateral Working Group, 18, 223
 national water control, 18
 peace talks, i, 35
 price of water, 265
 regional projects, 35
 role of *fellah*, 19
 United States and, 223. *See specific countries*
 water exports,
 Water for Life conference, 256
 water wars, 10
Middle East Multilateral Working Group on Water Resources, 18, 223
Milagro Beanfield War, 31
Millennium Development Goals (MDGs), 53, 81
Millington criteria, 142, 155
mining, 284
Missouri River, 46
modeling, methods of, 50
 analytic models, 48, 87, 89, 103
 drought and, 144
 game theory and. *See* game theory
 simulation and, 45, 77, 111
Moldova, 176
monocultures, environment and, 173
MOP. *See* Multi Objective Projects
Mozambique, 16, 77, 282, 294
MRC. *See* Mekong River Commission
Multi Objective Projects (MOP), 48, 87
multi-agency teams, 8
multinational companies, 116, 117, 120
multipurpose agreements, 45
multiscalar studies, 27
multi-sectoral development, 6
Murray Darling basin, 92, 165
Myanmar, 21, 216, 218, 236
mythology, water and, 19, 82

NAFTA. *See* North American Free Trade Agreement
Nagorno-Karabakh issue, 206
Namibia, 15, 21, 41, 277, 278, 294
National Environmental Policy Act (NEPA), 1
Native American groups, 135, 138
natural flow, principle of, 59
natural gas, 75
navigation treaties, 6, 82. *See specific systems*
needs-based approach, 69, 70
Nehru, J., 191
Neiden River, 317
Neman basin, 5
neofunctionalism, 6
NEPA. *See* National Environmental Policy Act
Nepal, 22, 36, 42, 78, 79, 182, 184, 313
nested systems, 142
the Netherlands, 146
 decentralization and, 148
 Germany and, 297
 integrated planning in, 148
 water boards in, 4, 84, 147
 water prices, 262
New Zealand, 264
Newfoundland, 260
NGOs. *See* non-governmental organizations
Niagara River, 73
 allocations and, 308, 317
 hydropower and, 22, 317
Niger River, 68, 268, 287
 water quality, 282, 285
Niger, Republic of, 5, 286

- Nigeria, 153, 273, 282, 286
 China and, 149
 drought in, 153
 Komadugu-Yobe basin, 154
 Millington criteria, 155
 Portugal and, 149
 RBDAs in, 153
- Nile River, 41, 58, 69, 83, 105
 allocations and, 315
 Aswan Dam, 20
 British administration, 19
 cooperative development of, 13, 20, 41
 ecosystems of, 15
 Egypt and, 14, 42
 Ethiopia and, 42, 234
 flashpoints and, 108
 hydropolitics and, 234
 irrigation and, 231
 Johnston plan and, 201
 Jonglei Canal, 111
 natural variability of, 110
 Nile Basin Initiative, 20, 29, 54, 80, 234
 Nile Waters Treaty, 231
 origins of, 20
 Sudan and, 42
 technical committees, 45
 TFDD study and, 20
 upstream riparians, 18
 wetlands and, 110
- no harm, principle of, 60
- non-governmental organizations (NGOs), 8, 118
 Africa and, 87
 Brazil and, 160
 civic society and, 120
 coalitions among, 98
 codification and, 55
 Costa Rica and, 160
 Danube Forum, 178
 data-sharing networks, 84
 environment and, 39
 funding and, 120
 Guarani Aquifer and, 188
 institutions and, 87
 public participation and, 160
 roles for, 113
 world water elite, 54
 World Water Forums, 54
- Nordic Investment Bank, 176
- North American Free Trade Agreement, 260
- Northwest Alliance for Computational Science and Engineering,
 xxv
- Norway, 71, 256, 311, 317
- nuclear energy, 34, 117
- Nukus Declaration, 174
- OAS. *See* Organization of American States
- Oder River, 288
- OECD. *See* Organization for Economic Co-operation and Development
- offshore activities, 275
- Ohio River, 65, 299
- oil, 21, 44, 75
- Okavango River, 15, 16, 21, 277, 278, 294
- opportunity costs, 37
- Orange River, 257, 277, 278, 296
- Oregon State University, xvii, 12, 19. *See also* TFDD project
- Organization for Economic Co-operation and Development (OECD),
 xxi
- Organization of American States (OAS), 188
- organizations, definition of, xxiii
- Oslo report, 5, 46
- OSU. *See* Oregon State University
- Our River, 288
- P&G. *See* Principle and Guidance system
- Pacific Islands Applied Geoscience Commission (SOPAC), 259
- Pakistan, 15, 47
 allocations and, 314
 Bangladesh and, 186
 Delhi Agreement, 191
 Farakka Barrage and, 183, 186
 Ganges and, 182, 186. *See also* Ganges River
 India and, 13, 42, 155, 156, 186, 190, 194, 254, 287, 313, 314
 Indian Independence Act, 191
 Indus and, 186, 193, 254
 inter-provincial allocation, 37
 Kashmir and, 191, 194
 partition and, 191
 Standstill Agreement, 191
 TVA and, 191
- Palar Basin, 15
- Palestine, 15, 16, 69
 allocations and, 311
 Declaration of Principles and, 226
 EXACT group, 228
 international law, 11
 Israel and, 68, 70, 72, 74, 202, 226, 266, 278, 311
 pollution and, 17
 riparian rights, 58
 UNRWA and, 199
 Water Authority, 198
- Papua New Guinea, 284
- Paraguay, 44, 160, 187, 208, 296
- parallel unilateralism, principle of, 207
- Paraná River, 296
- Pareto optimality, 37, 87, 89
- Paris Peace Agreement, 156, 221
- Paris, Treaty of, 175
- Peace Research Institute, Oslo (PRIO), 26
- Peru
 allocations and, 312
 Desaguadero River and, 214
 Ecuador and, 312
 Joint Sub-commission, 212
 Mexican model and, 159
 TDPS System, 213
 Titicaca and, 211
- pesticides, 173
- Philippines, 83
- Picnic Table talks, 203
- pie-slicing model, 37
- Poland, 68, 270, 271, 273, 286, 288, 300
- political economy, 50
- political factors, 17, 77, 114
 authoritarianism, 5
 black box principle, 177
 climate and, 25
 environmental mediation, 34
 functionalist theory, 34
 high/low politics, 34
 hydropolitics, xxiii, 27, 30, 115
 policy analysis and, 88
 political boundaries, 194
 power politics, 34
 scarcity and, 19
 TFDD survey, 115
 water management and, 4
 water quality and, 17
 water sharing and, 29
- pollution, 2, 15, 17, 127, 148, 281. *See also* environmental issues. *See also*
specific topics, locations
 airborne toxics, 197
 aquifers and, 187
 Black Sea and, 180
 Danube River and, 180
 eco-system approach, 197

- flooding and, 241
Great Lakes and, 198
groundwater and, 187, 197
Guaraní Aquifer and, 188
industrial, 15, 21, 173, 291
Israel and, 17
Jordan and, 17
Lake Titicaca and, 212
lakewide management plans, 197
Palestinians and, 17
polluter pays principle, 150, 251, 261
population control, xxiv
Portugal, 74, 146
 allocations and, 312, 313
 China and, 149
 Cunene River Basin, 255
 hydropower and, 313
 Nigeria, 149
 RBOs in, 146, 148, 149
 South Africa and, 312
 Spain and, 273, 313
positional bargaining, 47
Postel, S., xxii, 10, 17
Potomac River, 110, 144, 145
poverty, 5, 7, 10
pricing, of water, 249
Principle and Guidance (P&G) system, 143
PRIO. *See* Peace Research Institute, Oslo
prior appropriation, 58, 72, 135
Prisoner's Dilemma game, 4, 36
privatization, 87, 95, 249–250, 262
problem-solving, 89
professional management, 7, 84
Project Forward, 118
Prut River, 284
public participation, 1, 82, 143, 177
 Bolivia and, 160
 Brazil and, 160
 Chile and, 160
 Danube River and, 180
 information and, 85
 management authority and, 86
 NGOs and, 160
 principle of, 177
 South Africa and, 85
 voice and, 85
 water conflict management and, 52
Pyrenees, 59
rainfall, xxi, xxii, 29
RBDAs. *See* River Basin Development Authorities
RBOs. *See* river basin organizations
RBRDAs. *See* River Basin and Rural Development Authorities
Reagan administration, 143
Reclamation Act (1902), 27
recycled water, 258
Red River, 302
religions, 91
remote sensing technology, 32
Rhine River, 5, 6, 15, 16, 36, 297
Rhône River, 6
rights-based criteria, 58
Rio Conference, 52, 61, 249
Rio Grande River, 27, 58, 268, 276, 302
risk assessment, 50
River Basin and Rural Development Authorities (RBRDAs), 153
River Basin Development Authorities (RBDA), 153
river basin organizations (RBOs), 19, 20, 32, 92
 as boundary organizations, 145
 Canada and, 96
 French system, 93–94
 INBO registry, 119
 institutions and, 82
 Latin America and, 160
 Title II, 142
 United States and, 95
Roman law, 150
Romania, 176, 284, 290, 292
Roosevelt, F. D., 141
Roosevelt, T., 83
Rothman model, 99
Russia. *See also specific topics, systems*
 allocations and, 311
 China and, 71, 311
 Estonia and, 51
 Lake Peipsi and, 51
 ROV program, 150
 Russian Federation, 280
 USSR and. *See* USSR
 water resources management, 150
SADC. *See* Southern African Development Community
Salmon Summit, 45
salt water, 21, 65, 173, 224, 259
Salween River, 21, 236, 238
Samsun-Charrier study, 11
sanitation, xxii, 17, 65, 81
Sao Francisco River, 161, 162
Saudi Arabia, 203
scarcity, conflict and, xv, 12, 19, 27
SCS. *See* Soil Conservation Service
Scudai River, 258
second track diplomacy, 4
sedimentation, 15, 16, 127, 197, 282
Senegal River, 26, 36, 239, 241
Senqu River, 257
sewage systems, 21, 84, 212
shared interests, conflict and, 22
SIDA. *See* Swedish Development Agency
Sierra Leone, 151
siltation, 15, 16, 127
simulation models, 45, 77, 111
Singapore, 258
single-text negotiation (STN), 47
Slovakia, 56, 176
social learning process, 37
social planning, 41, 42
social psychology, 4
socioeconomic data, 11, 19, 74, 95–212
soft law, 57
software technologies, 45
Soil Conservation Service (SCS), 31
soil erosion, 282
solution possibility curve, 36, 37
Somalia, 46
Song-Whittington typology, 27
SOPAC. *See* Pacific Islands Applied Geoscience Commission
South Africa, 74, 75, 273, 277, 278, 294, 295, 296, 316
 allocations and, 312
 corruption and, 257
 Cunene River Basin, 255
 hydropower and, 22, 255
 Incomati River, 15
 Lesotho and, 46, 215, 257
 Lesotho Highlands Project, 22, 195
 Namibia and, 41
 Orange River and, 257
 participatory processes, 85
 Portugal and, 312
 Senqu River, 214, 257
 Swaziland and, 46
 white gold and, 257
Southern African Development Community (SADC), 21, 41, 106, 277
sovereignty, doctrine of, 51, 58, 59, 60, 87

- Soviet Union, 5, 24, 284. *See specific locations, topics*
 Afghanistan and, 271
 allocations and, 312
 Aral basin, 5, 19, 24, 172, 173
 breakup of, 21, 173, 202, 223
 Hungary and, 291
 institutional change in, 19
 Iran and, 22, 288, 312
 Poland and, 286
 Romania and, 292
 Russia and. *See* Russia
 Syria and, 202
 Soviet-Syrian Aid Agreement, 201
 Spain, 148
 allocations and, 313, 317
 basin concept in, 149
 France and, 59, 317
 Portugal and, 273, 313
 RBOs in, 146
 water prices and, 262
 Spector, B. I., 28
 Sri Lanka, 83
 St. Lawrence River, 275
 stag hunt game, 36
 statist-liberal paradigm, 148
 STELLA model, 144
 Stinca-Costesti hydraulic system, 284
 STN. *See* single-text negotiation
 subsidiarity, defined, 3
 Sudan, 75
 allocations and, 311, 315
 Aswan Dam, 316
 Egypt and, 22, 69, 233
 Eritrea and, 254, 311
 Great Britain and, 254, 270
 irrigation and, 231
 Italy and, 254
 Nile and, 42, 234. *See also* Nile River
 surface water, 67, 110
 suspended solids, 15
 Susquehanna River, 144, 304
 sustainability, 4, 22, 51
 Swaziland, 46, 295
 Sweden, 148, 262
 Swedish Development Agency (SIDA), 84
 Switzerland
 allocations and, 311
 France and, 267, 272, 273
 Geneva aquifer and, 267
 Italy and, 269
 Lake Constance and, 311
 symbolism, of water, 29, 30, 82, 91, 121
 Syr Darya River, 63, 280, 294
 Syria, 12
 Adana Agreement, 243
 All-Arab Diversion Project and, 201
 allocations and, 314
 Huleh swamps, 199
 Iraq and, 36, 243
 Israel and, 20, 36, 198
 Jordan and, 22, 199, 269, 290, 291, 314
 Jordan River and, 199. *See also* Jordan River
 Maqarin Dam, 201
 Soviet-Syrian Aid Agreement, 201
 Tigris-Euphrates basin, 243
 Turkey and, 243, 245
 Yarmuk and, 199. *See* Yarmuk River
 systems theory, 50, 87
 Tajikistan, 15, 172, 173, 280
 Tana, Lake, 315
 tanning industry, 15
 Tanzania, 282
 Taoism, 30
 Tarim basin, 5
 TDPS System, 213
 Tebrau River, 258
 Technical Cooperation Agency, 201
 technology, 4. *See also specific topics*
 analytic models, 49, 87, 89, 103
 common language for, 109
 computer models, 144. *See also* modeling
 decision-support tools, 112
 different levels of, 109
 IT and, 116
 modeling. *See* modeling
 policy analysis and, 88
 political factors and, 143
 remote sensing, 116
 simulation models, 45, 77, 111, 116
 technical advisory committees, 143
 technical information, 8, 49
 technophobia, 121
 triumphalism and, 121
 weather forecasts, 116
 Tedzen River, 288
 Tennessee River, 141. *See* Tennessee Valley Authority
 Tennessee Valley Authority (TVA), 31, 70, 141, 156, 195, 200
 funding for, 141
 hydropower and, 141
 India and, 191
 IWRM and, 141
 Pakistan and, 191
 regional government and, 141
 socioeconomic effects, 141
 Tennessee River and, 141
 U.S. and, 95, 111
 Thailand, 16, 75, 267, 279, 283
 allocations and, 315
 environmentalists and, 85
 hydroelectric projects in, 22
 Mekong, 22, 156, 216
 Myanmar and, 236, 237
 Pak Moon dam, 221
 Salween River and, 21, 236
 third-party facilitators, 44
 Tiberias, Lake, 290
 Tibet, 21
 Tigris-Euphrates system, 11, 58, 61, 73, 83
 British administration, 19
 Iraq and, 243
 Lagash and, 12
 riparian countries, 5, 18, 58
 Syria and, 243
 technical committees, 45
 TFDD study and, 20
 Turkey and, 14, 243
 Umma and, 12
 unilateral development, 36
 water wars and, 12
 Tijuana River, 4, 268
 Tisza River, 290
 tit-for-tat strategy, 4
 Titicaca, Lake, 211
 ALT and, 213
 Bolivia and, 211
 environmental issues, 212
 first communities, 211
 Joint Sub-commission, 212
 Peru and, 211
 pollution levels, 212
 tourism, 188

- Toynbee, A., 9
- Trans-Arabian Pipeline, 75
- Transboundary Freshwater Dispute Database (TFDD), i, xxv, 12, 19, 24. *See also specific topics, systems*
- allocations in, 64
 - Basins at Risk concept, 20
 - events included, 12. *See also* transboundary systems
 - findings of, 12, 24
 - Freshwaters Treaties Database, 252
 - Giordano study, 65
 - political issues and, 115
 - transboundary aquifers in, 67
 - water quality and, 65
- transboundary systems. *See also specific systems, topics*
- cooperation in, 3
 - cross-jurisdiction in, xxii
 - definitions of, xxiii
 - four stages of negotiation, 97
 - freshwater database, xxv
 - fuzzy boundaries, 26
 - groundwater and, 51
 - hydropolitics and, 9
 - international waters, xxiii
 - land boundary and, 26
 - land surface covered by, 1
 - local context and, 27
 - Middle East and, 5
 - negotiating disputes, xxiv
 - number of, xv, 1
 - OSU group, xvii, xxv
 - principles of, 2
 - reciprocal advantages, 40
 - TFDD study. *See* Transboundary Freshwater Dispute Database
 - water wars, 9
- tribal rules, 86
- Truman Dam, 45, 46, 47
- Turkey, 21, 267
- Cyprus and, 256
 - Ethiopia and, 58
 - GAP and, 244, 245
 - Iraq and, 245
 - Israel and, 244, 256
 - Lebanon and, 59
 - Manavgat River and, 256
 - Medusa bags, 259
 - Norway and, 256
 - Southeast Anatolia Project, Syria and, 243, 245
 - Tigris-Euphrates and, 14, 243. *See* Tigris-Euphrates system
 - water exports and, 256
- Turkmenistan, 172, 173, 280
- TVA. *See* Tennessee Valley Authority
- twinning program, 54
- Uganda, 153
- Ukraine, 176
- Umma, 12, 61
- UN Convention on Non-Navigational Uses of International Watercourses, xxiii, 2, 11, 55, 56, 123
- UNCED. *See* UN Conference on Environment and Development
- UNDP. *See* United Nations Development Programme
- UNECE. *See* United Nations Economic Commission for Europe
- UNEP. *See* United Nations Environment Programme
- UNESCO. *See* United Nations Educational, Scientific and Cultural Organization
- United Kingdom
- allocations and, 311, 315
 - Canada and, 197
 - Egypt and, 272, 315
 - Italy and, 254, 311
 - United States and, 197
 - water prices and, 262
- United Nations Conference on Environment & Development (UNCED), 52, 61, 249
- United Nations Development Programme (UNDP), 54, 176
- United Nations Economic Commission for Europe (UNECE), 54
- United Nations Educational, Scientific and Cultural Organization (UNESCO), iii, xv, 66, 188
- United Nations Environment Programme (UNEP), 47, 176, 188, 259
- United Nations Food and Agriculture Organization (FAO), 61, 151
- United States, 15. *See also specific resources, topics, organizations*
- allocations and, 317
 - arid regions of, 6
 - Army Corps of Engineers, 38, 45, 83, 116, 139, 140, 145
 - Boundary Waters Treaty, 198
 - Bureau of Reclamation, 21
 - California three-way dialogue, 85
 - Canada and, 22, 42, 63, 104, 140, 145, 196, 268, 275, 300
 - Colorado River and. *See* Colorado River
 - Columbia River. *See* Columbia River
 - conflict management and, 1
 - cost sharing and, 87
 - court decisions, 135
 - decentralized system, 106
 - desalinization and, 260
 - drought of 1990s, 46
 - electrical energy needs, 38
 - Endangered Species Act, 27
 - environmental standards, 7, 8, 27, 142
 - EPA and, 8, 142
 - farmers' associations, 31
 - federal registry role, 135
 - federalist system, 3, 86
 - Flow, Inc. and, 264
 - Geological Survey, 142
 - Great Britain and, 308
 - Great Lakes and. *See* Great Lakes
 - Gulf Coast, 44
 - hydropower and, 73
 - ICPRB and, 95
 - internal water conflicts, 1
 - interstate compacts, 135
 - irrigation and, 31
 - IWRM and, 96
 - legislation on resources, 1
 - market orientation of, 87, 136
 - Mexicali Valley, 255
 - Mexico and, 22, 27, 62, 65, 70, 71, 110, 138, 246, 266, 268, 273, 276, 277, 308
 - Middle East and, 223
 - Minute 242, 248
 - Missouri River and. *See* Missouri River
 - Native Americans, 27
 - New England Pollution Control Act, 306
 - P&S approach, 96
 - Pacific Northwest, 45
 - presidential commissions, 87, 135
 - RBOs and, 95, 135
 - Reclamation Act, 27
 - socioeconomic factors, 95
 - subsidies and, 260
 - sub-state water control, 18
 - Supreme Court decisions, 6, 136
 - Tennessee River. *See* TVA
 - Title II system, 142, 143
 - TVA and, 95, 111. *See* Tennessee Valley Authority
 - valley authorities in, 141
 - water banking, 45, 264
 - watershed councils, 142
 - wetland use, 44
- Universities Partnership on Transboundary Waters, i, xvii, 54

- upstream/downstream conflict, 11
urbanization, 5, 30
Uruguay, 44, 160, 187, 208
USSR. *See* Soviet Union
utilitarian model, 87
Uzbekistan, 172, 280, 294
 Aral Sea and, 16, 173
 hydroelectric projects in, 22
- Vatican, 47
Venezuela, 159
Vietnam, 13, 63, 156, 267, 279, 283
 allocations and, 315
 ECAFE report, 218
 Geneva Accords, 217
 irrigation and, 17
 Mekong and, 156, 216. *See* Mekong River
 NGOs and, 156
 NWRC and, 156
 Paris Peace Agreement, 221
 RBOs and, 156
 stakeholder participations, 156
virtual water, 19, 23, 41, 50
Vistula River, 5, 286
visualization method, 50
voice, participation and, 85
Volga River, 5
vulnerability, and conflict, 22
- wars, xxiii, 10
 conflict, cooperation and, 13
 dataset on, 26
 desalination and, 23
 geographic scale, 32
 intensity of conflict, 32
 large-n studies, 26
 preventive diplomacy, 28
 water wars, 5, 9, 102
wastewater, 15, 118, 258, 259
water
 civilization and, 9, 31
 costs of, xxi, 3
 ecological values, 4
 ethos of, 18
 per capita data, 70
 physical parameters, 19
 rainfall, xxi
 symbolism of, 29, 30, 91, 121
 unique characteristics, 250
 values of, 249
 watercourse, defined, xxiii, 55, 124
 watersheds, defined, xxiii
Water Environment Federation, 7
Water for Peace program, 34, 35, 119, 156
Water Framework Directive (WFD), 180
water quality, 6, 15, 65, 274. *See also* pollution
Water Quality 2000, 142
Water Resources Planning Act (1965), 142
Water Resources Protection Act (1999), 260
WaterBank, 264
Waternet Project, 228
WCU. *See* World Conservation Union
WEF. *See* World Economic Forum
- wetlands, 44, 47, 110, 154, 155, 175
WFD. *See* Water Framework Directive
Wheeler Mission, 219, 222
wheeling, of resources, 109
White Mission, 222
wildlife, 21
Works Progress Administration (WPA), 8
World Bank, 5, 46, 75, 156
 ADR and, 52
 Africa Regional Office, 84
 Bangladesh and, 36
 Black initiative, 192, 195
 Brazil and, 262
 Curu River basin, 161
 expert boards, 45
 financial assistance from, 194
 Guaraní Aquifer, 54
 Indus River and, 156, 192, 194, 314
 intersectoral dialogue, 118
 intervention by, 47
 Maqarin Dam and, 201
 new sector strategies of, 7
 Nile Basin Initiative, 20, 54
 privatization and, 262
 Senegal and, 36
 technical expertise and, 46
 Third World and, 7
 water related portfolio, 6
World Commission on Water, 53
World Conservation Union (WCU), 176
World Court, 195
World Economic Forum (WEF), 8
World Resources Institute, 24
World Summit on Sustainable Development (WSSD), 53
World Trade Organization (WTO), 5, 116, 117
World Water Council, i, 53, 118
World Water Forums, 53, 54, 117
World Water Vision, 53
World Wide Fund for Nature (WWF), 176
WPA. *See* Works Progress Administration
WSSD. *See* World Summit on Sustainable Development
WTO. *See* World Trade Organization
WWF. *See* World Wide Fund for Nature
- Yacireta Treaty, 209
Yarmuk River, 75, 199, 201, 223, 269
 allocations and, 314
 Bunger Plan, 199
 hydropower and, 205
 Johnston negotiations and, 201
 Jordan and, 198
 negotiations over, 201, 204
 Sea of Galilee and, 201
 Syria and, 199
 water quality, 280, 291
Yellow River, 157, 158
Yemen, 68, 293
Yugoslavia, 269, 270, 298
- Zambezi River, 5, 47, 79, 277, 282
Zambia, 153, 277, 278, 282
zero-sum systems, 5, 33, 36, 37, 43, 74, 89
Zimbabwe, 21, 277, 278
84