Index

Index

African Development Bank, 119 American Samoa, 27, 29, 127, 128, 141-144, 277, 281 Angola, 68, 75 Asian Development Bank, 119 Australia. 180 Bangladesh, 47, 48, 74, 78 Belgium, 120 Belize, 64 Benin, 64 Bioenergy Development Corp., 27, 128 Bolivia, 68 Brazil, 45, 47, 48, 51, 109, 224 closed forests, 64, 66 deforestation, 85 forest ownership, 70 open forests, 68 plantations, 74, 189 wood exports, 49, 137 Brunei, 78 Burma, 64, 74 Burundi. 121 Canada, 50, 120, 137 Land Inventory, 245 Caribbean and western Pacific, 127-151 common characteristics, 129-132 dependence of coastal ecosystems, 132 dependence of water resources, 131 endemic species, abundance of, 129 invasion by exotic plant and animal species, vulnerability to, 130 land degradation, 132 species-rich forests, 129 Puerto Rico and U.S. Virgin Islands, 133 forests resources, 133 history of forest use, 135 organizations dealing with tropical forests, 140 U.S. Pacific territories: American Samoa, 141, 143 Commonwealth of the Northern Mariana Islands, 141, 146 forest resources: status and trends, 141 Guam, 141, 147, 148 history of forest use, 148 organizations dealing with tropical forests, 149, 151 Trust Territory of the Pacific Islands, 141, 144 Caribbean National Forest, 28, 140, 276 C. Brewer & Co,, 128 Chicago Field Museum of Natural History, 259 Civilian Conservation Corps, 136 Club du Sahel, 120 Colombia. 48 Commonwealth of the Northern Mariana Islands, 27, 141, 146 Congo, Republic of, 48, 74, 75

Congress: issues and options for, 23-27, 31-32, 301-320 expand and coordinate development assistance, 24, 305, 308 expand U.S. expertise, 26, 316 improve research and market development, 25, 311 protect biological diversity, 26, 315 U.S. tropical forests, 303 Consultative Group on International Agricultural Research (CGIAR), 26 list of, 111 Cooperation for Development in Africa (CDA), 105, 120, 272 Costa Rica, 45, 75 Centro Agronomic Tropical de Investigation y Ensenanza, 263 Cuba, 85 deforestation and forest resource degradation, 85-100 historical context, 85 soil relationship to, 87 underlying causes, 98 visible agents of forest change, 89 commercial agriculturalists and cattle ranchers, 95 fires, 93 fuelwood gatherers, 91 logging, 97 nomadic herders, 90 shifting cultivation, 89 warfare, 94 disturbed forests, 195-213 degraded lands, reforestation of, 200-213 constraints and opportunities, 211 technologies, 201-211 secondary forests, management of, 196-200 constraints and opportunities, 200 technologies, 196 education, research, and technology transfer, 257-272 environmental education, 263 principles of, 264 professional education and technical training, 258-263 research, 265-269 dissemination of findings, 268 fundamental and applied research, 265 priorities, 266 technology transfer, 269-272 forestry technologies, 275-295 agriculture, 284 disturbed forests. 280 education, research, and technology transfer, 289-293

reduce overcutting, 278 wood fuels, 279 resource development planning, 288 undisturbed forests, 276 France, 120 French Guiana, 75 Fulbright Grants, 121 Gabon, 75 General Accounting Office, 269 Ghana, 44, 64 Great Britain, 180 Green Revolution, 43 Guam, 27, 141, 147, 148, 172, 277, 281, 289, 291 Guatemala, 48 Gulf of Guinea, 45 Guyana, 75 Haiti, 54, 75, 85 Hawaii, 127, 128, 129, 131, 263 Bishop Museum, 128 College of Tropical Agriculture and Human Resources, 27 Department of Land and Natural Resources, 27, 128 East/West Center, 27, 128, 267 Forest Service Institute of Pacific Island Forestry, 128 Pacific Tropical Botanical Garden, 128 Honduras, 48, 75, 120 Hong Kong, 49 India, 40, 47, 70, 74, 186, 249 Indonesia, 64, 66, 68, 74 Interamerican Development Bank, 119 International Council for Research in Agroforestry (ICRAF), 112, 228, 263 International Development Cooperation Agency, 119 International Executive Service Corps (IESC), 122 International Union for Conservation of Nature and Natural Resources (IUCN), 160 International Union of Forestry Research Organizations (IUFRO), 105, 112, 268 Inter-Tropical Convergence Zone, 40 Ivory Coast, 49, 64, 75 Japan, 49, 51 Kenya, 40, 64, 112, 235 British-American Tobacco Co., 225 fuelwood. 16 Kleberg Wildlife Research Institute, Kingsville, Tex,,

legislation: Cooperative Forestry Assistance Act of 1978, 292 Economy Act, 118 Endangered Species Act of 1973, 42 Federal Resources Planning Act of 1974, 294 Foreign Assistance Act, 25, 26, 118, 121, 271, 305

263

Forest and Rangeland Renewable Resources Research Act of 1978, 292 Government Employees Training Act, 118 McIntyre-Stennis Act of 1962, 294 Liberia, 75 Malawi, 121 Malaysia, 49, 50, 64 Mexico, 45, 66, 68 Micronesia, 27, 29, 127, 128, 141, 144, 149, 287 Missouri Botanical Garden, 259 Nepal, 246, 249 New Guinea, 66, 70, 171, 172, 291 New York Botanical Garden, 259 Ngerukewid Islands Wildlife Preserve, 277 Nigeria, 75, 224 Nitrogen-Fixing Tree Association, 27 nongovernmental organizations (NGC)S), 110, 121 Office of Management and Budget (OMB), 121 Organization for Economic Cooperation and Development (OECD), 120 Overseas Private Investment Corporation (OPIC), 122 Pakistan, 44, 74 Panama, 45 Panama Canal, 47, 54 Peru, 66 Philippines, 48, 51, 78, 109, 181, value of wood exports, 49 Puerto Rico, 127, 129, 224, 263, 277, 278, 280, 281, 286, 287, 289 center of excellence, proposed, 21 Commonwealth forests, 276 Department of Natural Resources, 28, 140, 283, 288 forest resources, 133, 135 geoclimatic regions, 137 Guanica State Forest, 277 imports, 27, 139, 280 organizations dealing with tropical forests, 140 University of Puerto Rico, 29, 140 Rose Atoll National Wildlife Refuge, 277 resource development planning, 243-251 constraints and opportunities, 250-251 technologies, 243-250 biophysical assessment, 243 financial and economic analyses, 246 land classification, 244 monitoring and evaluation, 248 multiobjective planning methods, 249 social assessment, 247 Sahel, 120 Senegal, 121

Singapore, 49 Smithsonian Institution, 106, 259 Somalia, 121

South Korea, 49 Sri Lanka, 64, 181, 185, 246 Sudan, 64, 68, 225 Surinam, 75, 224 technologies to reduce overcutting, 177-191 industrial wood, 178 harvesting, transporting, and handling, 178-179 use of more tree species and sizes, 179-182 wood fuels, 182-191 fuelwood and charcoal conservation, 183 resource substitution, 185 technologies to support tropical agriculture, 219-238 agroforestry, 219, 220-229 constraints and opportunities, 228 organizations that work on agroforestry systems, 228 systems, 220 classification and assessment, 224 technology issues, 226 watershed management, 219, 229-238 constraints and opportunities, 237 description, 230 specific technologies, 232-236 terracing, 233 technical principles, 231 technology assessment, 14-23 disturbed forests, 17 management of secondary forests, 17 reforestation of degraded lands, 17 education, research, and technology transfer, 20-23 resource development planning, 20 reduce overcutting, 15-16 fuelwood, 16 industrial wood, 15 tropical agriculture, 18 agroforestry, 18 watershed management, 19 undisturbed forests, 14 maintaining sample ecosystems, 14 making undisturbed forests more valuable, 14 Thailand, 64, 68 fuelwood, 16 Togo, 64 Trade and Development Program (TDP), 122 Tribhuvan University, Nepal, 109 tropical forest: importance of, 10, 37-55 basic human needs, 45-49 commercial forest products, 49-52 nonwood products, 52 products for medicine, 51 wood, 49 environment, 53-54 future generations, 54 mangroves, 49, 132 political implications, 54 social and economic context, 37-40 tropical agriculture, 43

U.S. interests in, 42 water and climate, 40-43 status of, 10-13 closed forest, 64 data base, 63 definitions of forest categories, 65 destruction of forest resources, 75-79 deforestation and degradation, 75 resource degradation, 78 forest fallow, 68 forest management, 69-74 legislation and policy, 69 plantations, 74 in tropical America, 73 wood production, 70-73 open forests and shrublands, 67 projection of changes, 79 tropical forest resources, organizations dealing with, 105-123 consortia, 107 constraints, 114-117 foreign bilateral organizations, 109 international nongovernment organizations, 108 multilateral development banks, 107, 120 U.S. representation, 119 nongovernment organizations (NGOS) based in the United States, 107, 121 opportunities, 117-123 private sector, role of, 113 private U.S. foundations, 108 types of organizations in tropical countries, 109 U.N. agencies, 108 U.S. forestry firms operating in tropical countries, list of, 114 U.S. Government organizations, 106 Uganda, 64 UNESCO Man and the Biosphere (MAB) program, 14. 23. 25. 123. 159. 165. 166. 276 undisturbed forests, 159-174 maintaining sample ecosystems, 160 protected areas, status of, 160 steps in planning a park or protected area, 164 techniques to design, establish, and maintain protected areas, 160 why protect tropical forests?, 160

wildlife management categories, 163
making undisturbed forests more valuable, 167-174
food sources, 168, 170
game ranching, 170
innovative products, 171, 172
nonwood products, 167, 169
small animals, 169
United Nations (U.N.):
Commission on Trade and Development, 120
Conference on New and Renewable Sources of Energy, 186
Development Programme, 245

Environment Program, 23, 63, 108

- Food and Agriculture Organization (FAO), 24, 26, 64, 105, 108, 111, 120, 183, 201, 212, 260, 267, 305 FAO/UNEP study, 63, 65, 68, 70, 75, 78, 79, 82, 160 shifting cultivation, estimate, 46 U.N. University, 26, 108, 112, 263 U.S. representation to U.N. agencies, 119 Upper Volta, 121 U.S. Agency for International Development (AID), 9, 23, 24, 26, 105, 106, 118, 120, 121, 122, 140, 245, 248, 262, 269, 291, 305 Benchmark Soils Program, 246 Central Selva Resource Management Project, 246 Environmental Profiles, 25 Forest Resource Management Project, 118 U.S. Army Corps of Engineers, 289 U.S. Department of Agriculture (USDA), 106, 268 Agricultural Stabilization and Conservation Service (ASCS), 283 Mayaguez Institute of Tropical Agriculture, 286 Natural Resource Inventory, 136 Soil Conservation Service, 24, 106, 245 U.S. Department of Energy, 128 U.S. Department of the Interior, 106, 127, 141 U.S. Department of State, 25, 106, 120, 123, 141 U.S. Department of Treasury, 119
- U.S. Fish and Wildlife Service, 24, 123, 140, 277, 288, 291
- U.S. Forest Service, 23, 105, 106, 123, 128, 140, 262, 268, 284, 288, 289 congressional interests, 31, 32
- Forestry Support Program, 118
- Forest Products Laboratory, 50, 181

- Institute of Pacific Islands Forestry, 27, 150, 286, 292 Institute of Tropical Forestry (ITF), 28, 136, 140, 281, 289, 292 State and Private Forestry grants, 28, 29 The Caribbean Forester, 22 U.S. Interagency Task Force on Tropical Forests, 271 U.S. Landsat program, 64, 302 U.S. National Academy of Sciences, 24, 106, 123, 266 U.S. National Cancer Institute, 51 U.S. National Park Service, 24, 277 U.S. National Science Foundation (NSF), 106, 123 U.S. Peace Corps, 106, 118, 140, 141, 185, 264 U.S. Trust Territory of the Pacific Islands, 27, 141, 144, 277, 288 U.S. Virgin Islands, 27, 127, 277, 280, 281, 287, 292 College of the Virgin Islands, 140 Department of Agriculture, 28, 140, 284 forest resources, 134, 135 freshwater resources, 131 life zones, 134 Luquillo Experimental Forest, 140 National Park, 127, 134, 276 organizations dealing with tropical forests, 140 Thomas Experimental Forest, 140 Venezuela, 48
- World Bank, 24, 44, 105, 119, 267, 305 Operational Manual for Project Analysis, 248

Zaire, 64, 66, 68 Zambia, 64

0