

Index

- Acosta, Ricardo, 209
Afghanistan, 29, 30, 33, 278
Africa, 12, 27, 29, 48, 49, 125, 126, 129, 131, 133, 135, 145, 157, 160, 165, 169, 171, 181, 185, 186, 187, 189, 190, 209, 210, 213, 217, 220, 221, 222, 223, 225, 227, 228, 231, 232, 233. *See also* Middle East and North Africa (MENA)
East Africa, 110, 126, 164, 175, 231
sub-Saharan Africa, 104, 158–180, 226, 227, 231
West Africa, 109, 126, 130, 135–157, 187, 212, 227, 273
Africa Rice Center, 137, 166
African Agricultural Technology Foundation, 231
African animal trypanosomiasis (AAT). *See* trypanosomiasis
agribusiness, 6, 14, 75, 76, 78, 85, 87, 125, 199, 288, 291, 301, 308 *See also* private sector; seed industry
agricultural economics, 11, 39, 81, 82, 120, 123, 167
agricultural research for development (AR4D), 159, 179
agro-ecology, 11, 19, 27, 28, 31, 33, 40, 41, 42, 49, 152, 165, 186, 188, 221, 267, 282, 299
al-Assad, Bashar, 17, 41
al-Assad, Hafez, 23, 35, 36, 37, 41
Albania, 278
Algeria, 20, 30, 31, 32, 33
Alliance for Progress, 75, 77, 183, 198
Altieri, Miguel, 299, 300
Andean region, 69
Arab-Israeli war, 23
Arafat, Yasser, 37
Argentina, 40, 189, 190, 210
Arid Land Agricultural Development program (ALAD), 25, 33
arid regions. *See* drylands
Asia, 6, 18, 46, 48, 49, 50, 72, 80, 104, 124, 126, 131, 149, 181, 185, 190, 205, 210, 213, 221, 224, 232
Central Asia, 24, 42
South Asia, 97, 273
Southeast Asia, 93, 186
Western Asia, 21, 41. *See also* Middle East and North Africa (MENA)
Asian Development Bank, 119, 129
Australia, 129, 186, 278
Ba'ath Party, 23, 35
bananas, 80, 145, 202
Bangladesh War, 52, 60
Bänziger, Marianne, 227
barley, 24, 26, 39, 40, 104, 249, 276
Beachell, Henry, 138
beans, 11, 65, 83, 127, 181–206, 244, 272
bean breeding, 11, 181, 185, 186, 188, 189, 190, 195, 197, 200, 201, 205
broad beans, 39
velvet beans, 108, 109, 112
Belgium, 129
Bell, David, 84, 85
Bellagio meetings, 115, 116, 118, 119, 120, 121, 122, 123, 124, 126, 128, 162
Bennett, Erna, 267, 268, 270, 272, 276
Bigirwenkya, Z.H.K., 31
Bill & Melinda Gates Foundation, 227, 230, 285
biotechnology, 173, 229, 230, 232, 253, 260, 277, 292, 297, 298
transgenic animals, 159, 170, 174
transgenic plants, 231, 291, 297, 298, 306
Bioversity International, 12, 13, 255, 256, 257, 281, 282, 302, 304 *See also* International Board for Plant Genetic Resources (IBPGR); International Plant Genetic Resources Institute (IPGRI)
Boerma, Addeke Hendrik, 24, 122, 127

- Bolivia, 83, 190
- Borlaug, Norman, 79, 89, 101, 120, 121, 122, 123, 138, 217, 218, 220, 270
- Bouaké research station, 142, 148, 151, 154
- Brazil, 71, 83, 186, 189, 192, 273
- British Empire, 20, 24, 35, 140, 142, 143, 149
- Brown, Lester R., 191
- Bunting, A. H., 129
- cacao, 70, 80 *See also* cocoa
- Canada, 9, 25, 99, 119, 129
- capitalism, 7, 9, 36, 64, 77, 121, 125, 206, 287, 289, 300, 308, 309
foreign investment, 37, 41, 78
- Caribbean region, 80, 84, 85, 189, 195
- Carter, Jimmy, 220
- cassava, 5, 65, 83, 84, 145, 183, 185, 186, 192
- cattle, 5, 70, 83, 159, 161, 162, 163, 166, 168, 170, 171, 172, 198, 199, 200, 202
beef, 83, 173, 193, 198, 199, 200
dairy, 173, 205
- Cauca Valley Corporation (CVC), 73, 74, 76, 82, 85
- Central America, 11, 84, 98, 108, 110, 181–206, 221, 222, 273
conflict in, 193, 197, 199, 202, 203, 204, 205, 206
- Central American Cooperative Program for the Cultivation and Improvement of Food Cultivars (PCCMCA), 194
- Central American Corn Improvement Program, 91
- Centre de Recherche Agronomique du Bambey (Senegal), 128
- CGIAR, 1, 63, 92, 119, 158, 179, 180, 181, 237, 253
and CIMMYT, 89, 94, 106, 108, 112, 212
and IBPGR, 243, 246, 272
and ICARDA, 34, 38, 39, 42
and ICRISAT, 51, 59, 88, 117, 139, 158, 181, 210, 234, 286
and ILCA, 165
and ILRAD, 163, 164
and ILRI, 168, 169
and WARDA, 149, 156
centers, 68, 159
founding of, 24, 50, 81, 120, 162, 210
funding, 155, 169, 170, 249
genetic resources management, 250, 259, 261, 275, 276, 277, 278, 280, 284
independent legal personality of, 294
intellectual property in, 286–309
mission, 1, 17, 44, 104, 130, 160, 234, 237, 254, 257
organization of, 163, 174, 183, 248
Research Programs (CRPs), 159, 174, 175, 176, 177
Technical Advisory Committee (TAC), 2, 24, 25, 26, 27, 28, 29, 38, 39, 42, 51, 55, 127, 128, 129, 139, 167, 170, 212, 239, 269
- Chandler, Robert F., 148, 191
- Charan Singh, Chaudhury, 60, 62
- Chavarriaga, Eduardo, 78
- Chenna Reddy, Marri, 60
- chickpeas, 39, 49, 56, 57, 124, 127, 128, 133, 244
- Chile, 90, 121, 189
- China, 7, 8, 52, 77, 135, 136, 137, 146, 157, 210
- CIAT. *See* International Center for Tropical Agriculture (CIAT)
- CIMMYT. *See* International Maize and Wheat Improvement Center (CIMMYT)
- CIP. *See* International Potato Center (CIP)
- citrus fruit, 71
- climate change, 5, 26, 64, 68, 86, 112, 233, 254
- cocoa, 140, 141, 146, 278
- coffee, 70, 71, 140, 141, 199, 201, 202, 204, 278
- Cold War, 1, 6, 9, 18, 19, 24, 37, 42, 46, 51, 52, 62, 64, 67, 72, 73, 74, 77, 78, 81, 87, 98, 116, 146, 149, 181, 202, 206, 220
anti-communism, 22, 25, 46, 75, 181, 205
containment, 18, 37, 42
- Colombia, 7, 10, 48, 63–87, 90, 182, 183, 184, 186, 189, 190, 192
conflict in, 64, 70
La Violencia, 73, 74
- Colombian Agricultural Institute (ICA), 75, 76, 77, 78, 79, 81, 84, 85, 86, 87, 183, 184
- Colombian Agricultural Program (CAP), 72, 76, 79, 82, 182, 183, 186
- Colombian Institute for Agrarian Reform (INCORA), 75, 76, 77, 78, 80, 82, 85, 86, 87
- Colombian Sugarcane Growers Association (ASOCANA), 64, 76, 86, 87
- colonialism, 6, 11, 22, 80, 139, 141, 142, 143, 145, 148, 149, 154, 155, 156, 159, 161, 162, 254
- Comeau, John, 51, 128

- commodity-focused research, 40, 168, 174
 Commonwealth Scientific and Industrial Research Organization (CSIRO), 186, 262
 communism, 76, 98, 116, 206. *See also* Cold War: anti-communism; Cold War: containment
 Consultative Group on International Agricultural Research (CGIAR). *See* CGIAR
 Convention on Biological Diversity (CBD), 247, 250, 255, 256, 280, 281, 294
 Cooperative Regional Project on Beans for Central America, Mexico, and the Caribbean (PROFRIJOL), 189, 196, 197
 corn. *See* maize
 Costa Rica, 84, 106, 190, 192, 193, 194, 197, 199, 201, 202
 cotton, 24, 80, 109, 140, 142, 143, 199, 200, 204, 244
 Crawford, John, 127
 crop descriptors, 234–258
 crop diversity. *See* genetic resources
 crop improvement. *See* plant breeding
 Cuba, 7, 77, 278
 Cuban Revolution, 74, 78, 205
 Cummings, Ralph W., 44, 47, 51, 53, 54, 55, 56, 62, 128

 de la Madrid, Miguel, 107
 debt crisis, 199, 204
 decolonization, 21, 145, 146, 147, 155
 postcolonialism, 3, 6, 27, 35, 38, 62, 117, 146, 156
 Demuth, Richard, 25, 127
 dependency theory, 121
 Desai, Morarji, 60
 deterritorialization, 66, 85
 Doggett, Hugh, 51, 128
 Dominican Republic, 106
 Dougall, H. W., 145
 drylands, 10, 19, 20, 25, 26, 28, 40, 41, 42, 49, 56, 58, 124
 dryland crops, 26, 45, 48, 49, 55
 Dulles, John Foster, 22
 DuPont Pioneer, 86

 East Coast fever (ECF), 162, 164, 168
 Economic Commission for Africa, 119
 Ecuador, 83, 190, 192, 278
 Eder, Harold, 65, 74
 Eder, James “Santiago,” 70
 Egypt, 20, 21
 Eisenhower, Dwight D., 22, 42
 El Salvador, 106, 107, 193, 197, 202, 203, 204, 205
 Ethiopia, 165, 273, 278
 Europe, 9, 11, 18, 20, 21, 22, 24, 25, 32, 34, 104, 130, 132, 139, 140, 159, 177, 194, 253, 292, 306
 European Association for Research on Plant Breeding (EUCARPIA), 264
 European Commission/International Fund for Agricultural Development (EC-IFAD), 175
 European Economic Community, 129
 European Plant Genetic Resources Search Catalogue (EURISCO), 253
 excellence, 12, 158, 159, 170, 179
 institutional excellence, 138, 160, 179
 research excellence, 157, 159, 171, 173, 179
 scientific excellence, 11, 128, 160, 161, 163, 179

 Falcon, Walter, 293
 Farabundo Marti National Liberation Front, 202
 farming systems research, 14, 38, 39, 41, 85, 108, 139, 153, 155, 156, 167, 169
 fertilizers, 65, 84, 108, 109, 115, 133, 136, 141, 145, 149, 150, 201, 217, 223, 228, 289
 Fiji, 246
 Flores, Marina, 191
 Ford Foundation, 1, 25, 32, 46, 48, 49, 51, 77, 79, 81, 84, 85, 90, 95, 98, 109, 119, 128, 145, 183, 212
 Ford, Gerald R., 37
 France, 86, 119, 146, 148, 155, 156
 Frankel, Otto, 265, 267, 270, 277
 French Empire, 20, 35, 140, 142, 143, 149

 Gandhi, Indira, 9, 55, 57, 58, 59, 60, 62
 Gates Foundation. *See* Bill & Melinda Gates Foundation
 Gaud, William S., 115
 Gauger, L., 128
 gender, 5, 8, 14, 147, 150, 221, 222
 gene banks, 12, 17, 188, 194, 236, 238, 239, 244, 246, 248, 251, 257, 259, 267, 268, 269, 270, 273, 274, 275, 277, 278, 279, 281, 283. *See also* Svalbard Global Seed Vault, germ-plasm collection
 genetic erosion, 259, 265, 266, 268, 269, 270, 284
 genetic resources, 7, 12, 13, 63, 186, 194, 229, 238, 240, 242, 246, 247, 248,

- 250, 251, 256, 259–285, 301 *See also* gene banks; germplasm collections
 Commission on Plant Genetic Resources (FAO), 280, 281
 Genetic Resources Action International (GRAIN), 287, 299
 Germany, Federal Republic of, 129
 germplasm collections, 42, 57, 72, 80, 94, 101, 102, 108, 128, 131, 133, 185, 186, 188, 194, 214, 239, 241, 246, 250, 260, 262, 273 *See also* gene banks
 Gerpacio, Roberta, 224
 Ghana, 145, 147, 149, 156
 Gil Preciado, Juan, 95
 Global Crop Diversity Trust (Crop Trust), 63, 274, 281
 Global Forum for Agricultural Research (GFAR), 250
 Global Harvest Initiative, 86
 global public goods, 13, 211, 224, 230, 286, 287, 289, 291, 292, 296, 300, 302
 goats, 27, 166
 Grant, Ulysses Jerry, 82, 84
 Gray, Clarence, 48, 49
 Green Revolution, 2, 24, 49, 72, 81, 115, 117, 120, 124, 134, 137, 145, 190, 200, 205, 206, 210, 220, 226, 239, 242, 261, 269, 270, 285
 African Green Revolution, 137, 226
 Central America, 181, 202
 critiques, 6
 extension of, 25, 38, 55, 58, 118, 122, 124, 127
 India, 45, 58
 social unrest caused by, 115, 121, 123
 Gregory, W. C., 129
 groundnuts, 56, 57, 118, 126, 127, 128, 129, 130, 140
 groundnut breeding, 11, 117, 126, 131, 132
 Guatemala, 106, 109, 191, 192, 193, 194, 199, 202, 203, 204, 215, 222
 Haiti, 106
 Hanson, Haldore, 105
 Hardin, Lowell S., 79, 80, 87, 119, 120, 121, 187
 Harrar, J. George, 92, 95, 101, 148
 hemp, 71
 Henry, Paul Marc, 148
 high-yielding varieties, 47, 49, 72, 106, 119, 133, 184, 190, 200, 205, 206, 265
 hogs, 83, 84, 171, 175, 176, 177, 179
 pork, 175, 176, 177
 Holguín, Roberto, 79
 Honduras, 106, 192, 193, 194, 202
 Horsch, Robert, 297
 House, Lee, 56
 hunger, 19, 25, 46, 58, 59, 98, 102, 105, 108, 112, 116, 122, 124, 190, 212, 218, 221, 302 *See also* malnutrition
 famine, 58, 97, 98, 122, 210
 IBPGR. *See* International Board for Plant Genetic Resources (IBPGR)
 ICARDA. *See* International Center for Agricultural Research in the Dry Areas (ICARDA)
 ICRISAT. *See* International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
 IITA. *See* International Institute of Tropical Agriculture (IITA)
 ILCA. *See* International Livestock Centre for Africa (ILCA)
 ILRAD. *See* International Laboratory for Research on Animal Diseases (ILRAD)
 ILRI. *See* International Livestock Research Institute (ILRI)
 imperialism, 18, 19, 20, 21, 23, 34, 35, 36, 38, 41, 43, 161, 262 *See also* colonialism
 India, 2, 9, 29, 44–62, 82, 98, 115, 116, 124, 125, 128, 131, 144, 215, 224, 270, 304
 Indian Agricultural Program, 90
 Indian Agricultural Research Institute (IARI), 44, 47, 53
 Indian Council of Agricultural Research, 44, 49, 56, 57
 Indigenous knowledge, 109, 167, 253, 254
 Indonesia, 50
 Institut de Recherches Agronomiques Tropicales et des Cultures Vivrières (IRAT), 146, 147
 intellectual property, 1, 12, 13, 225, 229, 230, 231, 232, 253, 277, 279, 286–309
 Inter-American Development Bank, 77, 119, 186
 Inter-American Institute for Cooperation on Agriculture (IICA), 194
 Inter-Asian Corn Program, 213, 215, 221
 International Agri-Food Network, 297
International Arachis Newsletter, 133
 International Association of Plant Breeders for the Protection of Plant Varieties (ASSINSEL), 264, 278, 287, 298

- International Bank for Reconstruction and Development (IBRD), 24, 31, 126, 127
- International Biological Program, 264
- International Board for Plant Genetic Resources (IBPGR), 239, 241, 243, 244, 247, 249, 257, 270, 271, 275, 277, 279, 280
- International Center for Agricultural Research in the Dry Areas (ICARDA), 10, 17–43, 64, 276, 304
- International Center for Tropical Agriculture (CIAT), 10, 48, 63–87, 120, 181–206, 302
- International Coalition for Development Action, 277
- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), 9, 10, 11, 28, 29, 44–62, 117, 129, 131, 132, 276, 302, 304, 306
- International Development Research Centre (IDRC), 25, 128
- International Food Policy Research Institute (IFPRI), 8, 89
- International Institute of Tropical Agriculture (IITA), 10, 48, 81, 84, 85, 89, 126, 127, 148, 151, 152, 156, 183, 186, 212, 304
- International Laboratory for Research on Animal Diseases (ILRAD), 158, 162, 163, 164, 167, 168, 169, 170, 172, 173, 176, 179
- International Livestock Centre for Africa (ILCA), 158, 165, 166, 167, 169, 170, 176, 179
- International Livestock Research Institute (ILRI), 6, 158–180, 302, 304
- International Maize and Wheat Improvement Center (CIMMYT), 6, 9, 12, 25, 40, 88–112, 117, 127, 159, 180, 183, 191, 209–233, 264, 276, 300, 302, 308
- International Maize Improvement Consortia, 225
- International Plant Genetic Resources Institute (IPGRI), 248, 249, 251, 252, 254, 257, 274, 281
- International Potato Center (CIP), 8, 246, 276
- international public goods. *See* global public goods
- International Rice Research Institute (IRRI), 6, 81, 90, 93, 117, 137, 148, 149, 156, 159, 183, 184, 209, 264, 276, 291, 308
- International Seed Trade Federation, 287, 298
- International Treaty on Plant Genetic Resources for Food and Agriculture, 250, 252, 256, 281
- International Undertaking on Plant Genetic Resources for Food and Agriculture, 247, 279
- International Union for the Protection of New Varieties of Plants (UPOV), 277, 279, 280, 295
- International Water Management Institute (IWMI), 6, 8
- IPGRI. *See* International Plant Genetic Resources Institute (IPGRI)
- IR8 rice variety, 137, 138, 184, 200, 201
- Iran, 30, 31, 32, 33, 34, 278
- Iranian Revolution of 1979, 34, 35
- Iraq, 20, 21, 24, 30, 32, 41
- IRRI. *See* International Rice Research Institute (IRRI)
- irrigation, 20, 26, 27, 40, 41, 55, 73, 74, 100, 108, 141, 142, 143, 145, 149, 185, 201
- Israel, 21, 22, 35, 37
- Italy, 119, 187
- Ivory Coast, 141, 142, 143, 155
- Jadid, Salah, 23
- Jamaica, 106
- Japan, 9, 119, 132, 220
- Johnson, Lyndon B., 119
- Jones, Monty, 135
- Jordan, 21, 34
- Joshi, A.B., 47
- Kellogg Foundation, 77, 183, 186
- Kemp, Steve, 171
- Kennedy, John F., 75, 183
- Kenya, 172, 216, 223, 227
- Khrushchev, Nikita, 22
- Khush, Gurdev, 138
- Kissinger, Henry, 37
- Kuwait, 32, 41
- land reform, 65, 75, 77, 87, 183, 202
- land tenancy, 199, 200
- later-generation development problems. *See* second-generation development problems
- Latin America, 6, 10, 27, 40, 64, 80, 82, 84, 104, 181, 183, 185, 186, 188, 189, 190, 201, 204, 210, 213, 232, 264

- Le Buanec, Bernard, 297
 Lebanese civil war, 17, 34
 Lebanon, 10, 17, 21, 22, 25, 31, 32, 33, 34, 35, 37
 legumes, 38, 82, 123, 124, 126, 127, 133, 166, 181, 183, 188, 201
 lentils, 39, 244
 Liberia, 147, 155
 Libya, 278
 Lillienthal, David, 73
 limited exclusivity agreements, 307, 308
 livestock research, 39, 75, 158–180, 183, 185. *See also* cattle; hogs
 Lleras Camargo, Alberto, 75
 López Mateos, Adolfo, 92, 93

 maize, 7, 12, 47, 63, 69, 71, 80, 82, 83, 91, 94, 96, 98, 100, 101, 104, 105, 106, 107, 109, 110, 112, 181, 182, 183, 193, 194, 200, 201, 202, 205, 209, 217, 241, 262, 264, 272, 273, 276, 308
 high-lysine maize, 218, 219, 220, 233
 hybrid maize, 209, 211, 215, 220, 223, 224, 225, 231, 232, 268
 maize breeding, 12, 67, 72, 79, 82, 92, 95, 209–233
 open-pollinated varieties, 211, 215, 218, 219, 223, 224, 226, 232
 stress tolerant maize, 227, 228, 233
 Majidi, Abdul Majid, 31
 Malawi, 222
 Malaysia, 50
 Mali, 140, 148, 149, 150
 malnutrition, 68, 125, 181, 187, 191, 192, 193, 198, 199, 200, 206, 217, 226.
 See also protein gap
 Mangelsdorf, Paul, 213
 marginal zones, 62, 76, 80, 82, 85, 107, 200, 202, 224, 225
 MasAgro, 110
 Mata, Leonardo, 191
 Mauboussin, J. C., 129
 McKelvey, John, 159, 162
 McLaren, Donald, 198
 McNamara, Robert, 9, 50, 81
 mega-environments, 221
 Mexican Agricultural Program (MAP), 47, 72, 81, 88, 89, 90, 91, 92, 93, 94, 95, 97, 99, 103, 112, 182, 274
 Mexico, 2, 7, 9, 40, 47, 71, 81, 84, 88–112, 117, 182, 183, 186, 187, 189, 192, 195, 209, 210, 213, 214, 215, 222, 223, 225, 227, 264, 274, 278

 Mid-American State Universities Association, 77
 Middle East, 189 *See* Middle East and North Africa (MENA)
 Middle East and North Africa (MENA), 3, 17–43, 104
 millet, 47, 49, 56, 57, 124, 126, 128, 140, 244, 272
 modernization theory, 22, 121
 Monsanto, 229, 231, 297
 Mooney, Pat, 277
 Morocco, 29
 Myers, Will, 119, 122, 148
 Mzima project, 171, 172, 173

 Naik, K.C., 53, 54
 Nasser, Gamal Abdel, 22, 23
 National Institute for Agricultural Research (INIA), 91, 95
 Near East and North Africa. *See* Middle East and North Africa (MENA)
 Nehru, Jawaharlal, 46
 Nestlé, 125
 Netherlands, 129
 New International Economic Order, 122
 New Rices for Africa (NERICA), 135, 136, 137
 Nicaragua, 106, 193, 197, 199, 201, 202, 203, 278
 Nigeria, 10, 48, 81, 84, 85, 126, 129, 130, 147, 148, 149, 156, 157, 183, 185, 186, 226
 Nippon Foundation, 220
 Nixon, Richard M., 51, 52, 59
 North America, 187, 194, 198, 200, 292
 Norway, 63, 129
 Nour, M., 38
 Novartis Foundation, 231
 Nutrition Institute of Central America and Panama (INCAP), 191

 Office du Niger, 140, 141, 144, 150
 Office for Overseas Scientific and Technological Research (ORSTOM), 129, 230
 oil (crops), 123, 130, 131, 132, 140, 141, 205, 244
 oil (petroleum), 19, 22, 31, 32, 41, 198, 204
 OPEC crisis of 1973, 32
 One CGIAR, 14, 257, 307, 308
 Organisation for Economic Co-operation and Development (OECD), 119
 Organization of American States (OAS), 75
 Organization of the Petroleum Exporting Countries (OPEC), 32

- Orientalism, 19, 20
 Ottoman Empire, 20, 21, 22, 27, 35, 36, 38
 overpopulation, 46, 98, 122. *See also* population growth
 Overseas Development Administration (United Kingdom), 128

 Pakistan, 50, 52, 60, 98, 115, 116, 123
 Pal, B. P., 44, 47, 49
 Palestine, 20, 21, 34
 Palestine Liberation Organization (PLO), 34, 37
 Paliwal, Ripsudan, 224
 Palmira Agricultural Experiment Station, 71, 72, 75, 80
 Panama, 106, 192, 193
 Papua New Guinea, 246
 participatory research, 108, 109, 110, 112, 154, 222, 282
 participatory varietal selection (PVS), 154, 155
 pasture and forage crops, 38, 65, 83, 109, 185, 186, 192, 244 *See also* legumes
 patents, 229, 232, 287, 288, 291, 292, 293, 294, 295, 297, 298, 299, 301, 303, 304, 306, 308
 Peace Corps, 75, 77
 Peanut Collaborative Research Support Program, 133
 peanuts. *See* groundnuts
 Pearson Commission on International Development, 9, 81
 Peru, 83, 190, 192
 Philippines, 2, 6, 50, 81, 84, 90, 93, 109, 115, 117, 183, 184, 209
 pigeon peas, 49, 56, 57, 124, 127, 128, 133, 306
 pigs. *See* hogs
 Pinchinat, Antonio M., 191
 Pino, John, 111
 Pioneer Hi-Bred, 79, 222, 224
 Plan Puebla. *See* Puebla Project
 plant breeding, 38, 39, 40, 75, 94, 98, 164, 181, 183, 184, 186, 187, 191, 195, 289, 290. *See also* beans: bean breeding; groundnuts: groundnut breeding; maize: maize breeding; rice: rice breeding; wheat: wheat breeding
 plant variety protection, 287, 288, 292, 293, 295, 297, 303, 304, 308
 Plucknett, Donald, 275
 Point Four, 45, 72
 population growth, 27, 78, 80, 110, 118, 212 *See also* overpopulation
 Portères, Roland, 144

 potato, 276
 poverty, 10, 24, 34, 41, 42, 62, 78, 111, 121, 163, 198, 200, 205, 206, 221, 226, 302
 precision agriculture, 253, 255
 Pritchard, William, 167
 private sector, 12, 78, 211, 223, 224, 229, 230, 232, 286, 288, 289, 292, 296, 299, 300, 301, 307, 308
 protein crisis. *See* protein gap
 protein gap, 10, 124, 125, 131, 181, 187, 191, 194, 198, 217, 218
 public sector, 215, 216, 223, 224, 226, 232, 286, 289, 292
 public-private partnerships, 224, 230, 231, 232, 288, 291, 293, 300
 Puebla Project, 84, 100, 101, 213
 Puerto Rico, 71
 pulses, 56, 57, 123, 124, 133, 244

 quality protein maize. *See* high-lysine maize

 Rachie, Kenneth O., 47
 rainfed agriculture, 19, 32, 33, 38, 40, 41, 48, 55, 56, 61, 84, 100, 110, 127, 211, 215, 222, 226, 227, 233
 Rajaram, Sanjaya, 110
 Rangaswami, G., 53
 Rao, G. V. K., 52
 Rao, P. V. Narasimha, 57
 Raper, Jayne, 171
 Revolutionary Armed Forces of Colombia (FARC), 65, 74
 Ricardo Acosta, 209
 rice, 2, 7, 11, 46, 47, 48, 49, 59, 65, 70, 71, 80, 82, 83, 115, 119, 135–157, 181, 184, 185, 186, 191, 192, 193, 194, 200, 201, 202, 205, 210, 213, 239, 244, 262, 264, 272, 273, 276, 308
 hybrid rice, 135, 136, 137, 157, 306
 rice breeding, 135, 143, 145, 147, 149, 152, 153, 155, 184
 upland rice, 142, 148, 151
 Richard Toll, 141
 Richards, Paul, 152, 153
 Roberts, Lewis, 79, 80, 87, 124, 125, 182, 187, 191
 Roberts, Timothy, 296
 Rockefeller Foundation, 48, 49, 79, 111, 124, 145, 148, 159, 162, 185, 212, 218, 231, 264, 285
 and CGIAR, 1, 81, 115, 119, 292
 and the Green Revolution, 46, 242
 in Colombia, 69, 72, 73, 74, 77, 78, 79, 81, 82, 182, 183, 186

- in India, 44, 47, 48, 50, 53, 55, 56, 90, 215
- in Mexico, 81, 90, 91, 92, 93, 94, 95, 98, 101, 223, 274
- in the Middle East and North Africa, 26
- inter-American programs, 92, 194, 222
- training grants, 78, 99, 182
- Rockefeller III, John D., 50, 101
- Rokupr research station, 143, 147, 148, 149, 156
- Rostow, Walt Whitman, 22
- rubber, 80
- Ruppert, Joseph A., 182
- Rural Advancement Foundation International (RAFI), 277
- Ryan, J. G., 129

- Sabha, Rajya, 56
- Sandinista Revolution, 202
- Santos, Juan Manuel, 86
- Sasakawa Global 2000, 220
- Sasakawa, Ryōichi, 220
- Saudi Arabia, 32, 129
- Sauger, Louis, 51
- second-generation development problems, 10, 116, 117, 119, 120, 121, 134
- seed banks. *See* gene banks
- seed industry, 78, 222, 223, 224, 225, 226, 227, 230, 232, 283, 289, 307
- Seed Treaty. *See* International Treaty on Plant Genetic Resources for Food and Agriculture
- semi-arid regions, 19, 25, 42, 51, 58 *See* drylands
- Senegal, 129, 130, 140, 148, 149, 150, 156
- Serageldin, Ismail, 254, 294, 296, 301
- sheep, 27, 38, 166
- Shinde, Annasaheb, 57
- Sierra Leone, 135, 141, 142, 143, 144, 145, 146, 147, 148, 149, 152
- Singh, Tarlok, 44
- Sivaraman, B., 44
- Skilbeck Committee, 26, 28, 31, 35, 38, 40
- Skilbeck, Dunstan, 26
- slavery, 70, 74, 140
- soil science, 38, 39, 41, 75, 141, 145, 166
- Somoza, Anastacio, 202
- sorghum, 47, 49, 56, 57, 124, 126, 128, 140, 272, 276
- South Africa, 210, 231
- South America, 29, 109, 129, 143, 198
 - Andean region, 77, 84, 189, 222
- South Korea, 7
- southern corn leaf blight, 268

- Soviet Union, 8, 18, 22, 41, 42, 77, 205, 206, 241, 278
- soybeans, 127, 187
- Sprague, Ernest W., 213, 215, 224
- Sprague, George F., 216
- Sriwatanapongse, Sujin, 221
- Subramaniam, C., 44, 47
- Sudan, 129, 130, 173
- Suez crisis, 22, 23
- sugarcane, 64, 67, 68, 69, 70, 71, 72, 73, 74, 76, 78, 79, 85, 199, 202
 - Sugar Plan, 76, 78
 - sugarcane breeding, 71, 72
- sugarcane mosaic virus, 71, 72
- sustainability, 86, 110, 165, 179, 221, 254, 257, 281, 286, 287, 298
- Svalbard Global Seed Vault, 63, 72, 274
- Swaminathan, M. S., 44, 47, 57, 270, 294
- Sweden, 119, 129
- sweet potato, 145, 245
- Swiss Agency for Development and Cooperation (SDC), 195
- Switzerland, 106, 129
- Syria, 10, 17, 19, 21, 22, 23, 24, 30, 33, 35, 36, 41
- Syrian civil war, 17, 41, 43
- systems thinking, 165, 166, 167, 170
- System-Wide Information Network for Genetic Resources, 249, 251
- system-wide policy, 295, 300, 303, 308
- system-wide research, 12, 234, 249
- system-wide strategy, 290, 291

- Taiwan, 7, 146
- Tanganyika, 129
- Tata Group, 125
- Taussig, Michael, 74
- Technical Advisory Committee (TAC). *See* CGIAR
- technical assistance, 42, 45, 51, 73, 86, 87, 89, 90, 110, 111, 228
- Tenorio, Humberto, 78
- Thailand, 185, 215, 221, 223, 224
- Thammasat Resolution, 299
- Third World Network, 287, 299
- timber, 140, 141
- training programs, 88, 97, 100, 102, 103, 104, 107, 108, 111, 177, 182, 183, 184, 186, 189, 192
- Tribe, Derek, 164, 165
- Tripathi, Kamalapati, 57
- Tripp, Robert, 218
- triticale, 104
- Troll classification, 28, 29, 49

- tropical medicine, 159, 161
 parasitology, 161, 162
- tropics, 10, 19, 28, 29, 48, 49, 51, 67, 80,
 82, 119, 129, 133, 183, 185, 187, 209,
 210, 215, 216, 217, 221, 223, 224, 232
 semi-arid tropics, 10, 118, 128, 129
- Truman, Harry S., 45
- trypanosomiasis, 161, 162, 164, 168, 171,
 172, 174
- Tunisia, 32, 33
- Turkey, 30, 32, 33, 115
- Uganda, 171, 175, 176, 177, 179
- Unilever, 125
- United Kingdom, 119, 125, 129, 146, 155,
 172, 278
- United Nations Children's Fund
 (UNICEF), 125, 187
- United Nations Conference on the Human
 Environment, 268
- United Nations Conference on Trade and
 Development (UNCTAD), 122, 131
- United Nations Declaration on the Rights
 of Peasants and Other People Working
 in Rural Areas, 283
- United Nations Development Programme
 (UNDP), 2, 59, 119, 126, 127, 129,
 148, 195, 218, 292
- United Nations Food and Agriculture
 Organization (FAO), 63, 86, 94, 95,
 125, 148, 177, 221, 250, 253, 292
 and CGIAR, 2, 59, 81, 119, 126
 and the Green Revolution, 24
 and genetic resources management, 240,
 243, 247, 248, 250, 252, 259, 262,
 264, 265, 266, 268, 269, 270, 271,
 276, 277, 278, 279, 280
 in the Middle East and North Africa
 (MENA), 25, 38
 and the protein gap, 187, 191, 217
- United Nations International Fund for
 Agricultural Development, 250
- United Nations Protein Advisory Group,
 187, 198
- United Nations Refugee Agency, 203
- United States, 9, 18, 22, 37, 44, 45, 46, 51,
 59, 94, 98, 99, 116, 117, 119, 121,
 129, 131, 172, 181, 183, 186, 187,
 198, 202, 205, 206, 209, 275, 278
- United States Agency for International
 Development (USAID), 22, 26, 48,
 51, 52, 53, 56, 77, 115, 183, 186, 194,
 212, 248
- United States Department of Agriculture,
 71, 72, 186
- United States Department of State, 46, 77
- United States Technical Cooperation
 Mission to India, 53
- upland crops, 48, 49, 50, 55, 67, 124,
 126, 128
- uplands, humid, 139, 142, 143, 149, 151, 155
- USSR. *See* Soviet Union
- vaccines, 5, 163, 164, 168, 170, 171, 173, 179
- van Dusseldorp, D.B.W.M., 161
- van Schoonhoven, Aart, 201
- Vasal, S. K., 220
- Vavilov, Nikolai, 262
- vegetables, 150
- Venezuela, 83, 186
- veterinary medicine, 158, 161, 163, 167,
 174, 179, 182
- Via Campesina, 287, 299
- Vietnam, 7, 205
- Viguiet, Pierre, 144
- Villegas, Evangelina, 99, 220
- Viteri, Fernando E., 191
- Voysesst, Oswaldo, 201
- Wallace, Henry A., 79
- Waterlow, John C., 218
- Wellhausen, Edwin, 182, 223
- West Africa Rice Development Association
 (WARDA), 11, 135–157
- Western Asia and North Africa. *See* Middle
 East and North Africa
- Wharton, Clifton, 121
- wheat, 2, 7, 24, 29, 39, 45, 46, 47, 48, 49,
 59, 94, 96, 98, 104, 105, 108, 110,
 112, 115, 119, 123, 181, 182, 183,
 185, 191, 193, 205, 210, 213, 244,
 262, 264, 272, 273, 276, 308
 descriptors, 241, 242, 244
 durum wheat, 26, 40
 research programs, 40, 94, 98, 101,
 103, 104
 wheat breeding, 20, 88, 92, 95, 99, 101,
 102, 103, 145
- wide adaptation, 101, 138, 156, 157, 185,
 201, 210, 213, 264
- Wildlife Conservation Society, 86
- Williams, Trevor, 270
- Winkelmann, D.L., 108
- Winrock International Institute for
 Agricultural Development, 168
- World Agroforestry, 308
- World Bank, 1, 9, 50, 59, 74, 77, 81, 86,
 119, 126, 129, 242, 250, 255, 292
- World Food Conference, 105
- world food crisis, 227

- World Food Prize, 135, 157, 220
- World Health Organization (WHO), 125, 177, 187, 217
- World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture (WIEWS), 281
- World Trade Organization (WTO), 295
- Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), 294, 295, 298, 299
- World War I, 21, 23, 36, 94
- World War II, 3, 18, 22, 42, 72, 98, 112, 182, 209, 262, 290
- WorldFish, 8, 308
- Wortman, Sterling, 47
- Yuan, Longping, 135, 157
- Zeneca (AstraZeneca), 294, 296
- Zimbabwe, 222, 223, 227

