

## INDEX

Boxes, figures, maps, notes, and tables are indicated by *b*, *f*, *m*, *n*, and *t* following page numbers.

### A

- administrative protections of land use, 56–61, 58–59*t*
  - government agency review of foreign investments, 114–16, 125
- Africa. *See specific regions and countries*
- African Union
  - Framework and Guidelines on Land Policy, 139–40
  - principles for responsible agro-investment, 3
- agricultural production, 28–34.
  - See also specific crops*
  - family-owned and operated farms, 28–30, 28*t*
  - large farms. *See large farms*
  - small farms. *See small farms*
  - suitability of land for. *See suitability of land*
- agro-ecological zoning (AEZ)
  - methodology, 78, 81, 84, 125, 131
- Amazon region. *See deforestation*
- Angola
  - maize yields, 84
  - soybean yields, 85
- approval of projects by government agencies, 114–16, 125
- Arab Republic of Egypt. *See Egypt*
- Argentina
  - availability of uncultivated land, xxxiii, 79–80
  - farm management companies, 33*b*
  - frequency distribution of projects and total land area, 52
  - land valuation, 40
  - large farms, 32
  - lease payment for agricultural lands, 109
  - maize yields, 84
  - partnerships between small farmers and large investors, 38
  - past processes of land expansion, 12, 16, 17
  - publicly listed companies, 29
  - soybean yields, 85

- Argentina (*continued*)  
 sugarcane yields, 85  
 suitable land available, high yield gap (Type 4), xxxvi
- Asia. *See also specific regions and countries*  
 foreign investors, land acquisitions by, 1  
 little land for expansion, low yield gap (Type 1), xxxiii  
 past processes of land expansion, 12  
 auctions of public lands, xxvii, xxvii*b*, 111*b*  
 competitive approval processes, 110–12  
 disclosures, 117  
 in forestry sector, 111  
 audit of land policies, 133  
 Australia, availability of uncultivated land, 79–80  
 availability of suitable land for rainfed crop production, xxxii–xxxvii, xxxii*t*, xxxiv*f*, 76, 78–83, 79–80*t*, 165–67*t*  
 by region and crop, 168*t*
- B**  
 beef, 17–18  
 boycotts, 19, 123  
 Better Cotton Initiative, 134  
 Better Sugarcane Initiative, 134  
 biofuels  
 case studies, 67  
 demand for, 11, 12  
 development, 152*n*4  
 development failure, 152*n*7  
 future demand for land and, 25–26, 163*t*  
 mandates, 13, 43*n*2  
 past processes of land expansion, 18–19  
 second-generation feedstocks, 15, 43*n*3  
 Birur, D. K., 43*n*2  
 Black Earth (Swedish company), 27  
 Bolivia  
 farm management companies, 33*b*  
 maize yields, 84  
 soybean yields, 85  
 boundaries. *See* land boundaries  
 boycott on beef, 19, 123  
 Brazil  
 availability of uncultivated land, xxxiii, 79–80, 94*n*6  
 biofuels, 15, 18  
 cerrado (savanna) region, xxvi–xxvii, 17, 42, 43*n*4  
 consultation of local people, 123  
 Decree 9662/2009, 121  
 deforestation, 17–18, 18*f*, 42, 43*n*2, 120–21  
 Ecological Economic Zoning framework (2008), 123  
 environmental challenges, 17–19  
 frequency distribution of projects and total land area, 52  
 large farms, 25, 32  
 legal compliance of investors, 123, 124  
 maize yields, 84  
 Pact for Eradication of Forced Labor (2005), 124  
 past processes of land expansion, 12, 13, 16, 17–19  
 publicly listed companies, 29  
 soybean yields, 85  
 sugarcane yields, 85  
 suitable land available, high yield gap (Type 4), xxxvi  
 unprotected forested land, 81
- C**  
 Cambodia  
 boundaries unclear for government lands, 120  
 domestic investors, 63  
 frequency distribution of projects and total land area, 52  
 methodology and data collection, 145–46, 152*n*1  
 outside investment, xxviii  
 recording of property rights, 100  
 Cameroon  
 employment potential, 39  
 large farms, 25  
 cancellation of concessions, 133

- capacity building, recommendations for, xli–xlii, 130, 132, 140, 141
- carbon emissions. *See* climate change; REDD
- case studies, 64–70, 65–66*t*
  - implementation status and viability, xxxi–xxxii, 67–68
  - methodology, 64–67, 157–62*t*
  - socioeconomic impacts, 68–70
- cattle ranching. *See* beef
- cereals. *See* grain production
- CGE (computable general equilibrium) models, 16
- Chad
  - availability of uncultivated land, xxxiii
  - maize yields, 84
  - soybean yields, 85
- China
  - Congolese rainforest for oil palm, interest in, 67
  - cropland expansion, xxvi
  - distribution of projects and investors, 53
  - past processes of land expansion, 13
  - transfer of property rights, 104
  - water availability, 15
- civil society's role, xlii, 55, 130, 137–38
- climate change
  - crop yields and, 15
  - deforestation and, 21, 21*f*
  - land conversions and, 43*n*1
- Colombia
  - farm management companies, 33*b*
  - unprotected forested land, 81
- commodities, 83–86. *See also specific types*
  - past processes of land expansion and, 11, 12*t*
  - standards, 134–36
- commodity prices boom (2007–08), xxiii, xxix–xxx, 1
  - linked to interest in foreign land acquisition, 50, 51*f*, 55
- community involvement. *See* consultation with local right holders; local decision making on property rights
- compensation
  - Corporate Social Responsibility principles and, 126*n*2
  - from transfers, 107–9
- competitive processes. *See* auctions of public lands
- compulsory acquisition approach, 104
- computable general equilibrium (CGE) models, 16
- concessionary agreements, 113, 115, 126*n*4
  - cancellation of, 133
- conflict management, 132
- conflicts with local communities, 67–68, 70, 100, 103
- Congo, Democratic Republic of
  - availability of uncultivated land, xxxiii, 79–80
  - case study, 65*t*, 67, 157*t*
  - conflict over concessionary agreements, 113
  - cropland expansion, xxviii
  - Forest Code (2002), 126*n*4, 126*n*6
  - information collection and disclosure, 117
  - job creation from land investments, 64
  - maize yields, 84
  - methodology and data collection, 146
  - monitoring of implementation of investments, 118, 119
  - project review and approval, 114, 126*n*7
  - soybean yields, 85
  - sugarcane yields, 85
  - taxes from forestry sector, 113
  - unprotected forested land, 81, 126*n*4
  - urgency of approval concession applications, 115
- consultation with local right holders, 70, 71, 106–7, 123–24, 125, 141
- contract farming, 33*b*, 34, 124
- corn. *See* maize
- Corporate Social Responsibility principles, 126*n*2
- Cosan (Brazilian company), 31

- country inventories of land, xxx–xxxii, xxxit, 3, 56–64, 72–73n11. *See also* recording of existing property rights
- administrative processes, 4, 56–61, 58–59t
  - land sizes and origin of projects, 156t
  - large-scale land acquisitions, 61–64, 62t
- country typology, xxiv, xxxii–xxxvii, 7, 86–91, 86f
- little land available, high yield gap (Type 3), xxxiv–xxxv, 89, 90f
  - little land for expansion, low yield gap (Type 1), xxxiii, 87–88, 87f
  - suitable land available, high yield gap (Type 4), xxxv, 89–91, 91f
  - suitable land available, low yield gap (Type 2), xxxiii–xxxiv, 88–89, 88f
- crimes against the environment, 122
- crop insurance, 32
- crop yields, 14–15, 14b
- country typology and. *See* country typology
  - maximum potential yield, 81, 82t, 190m
  - yield gap, defined, 93n1
  - yield gap vs. relative land availability, 181–86f
- customary land rights, 99–100, 103
- D**
- deforestation
- Amazon region, xxvi, 17–19, 18f, 120–21
  - cropland expansion and, 76, 81
  - social impacts of, 19–22, 21f
- demand for land. *See* land rush
- Democratic Republic of Congo. *See* Congo, Democratic Republic of
- developing countries
- employment potential, 38–39
  - past processes of land expansion and, 13
- disclosures, open and publicly available, 96, 116–17
- displaced persons, 70
- dispute resolution, 132
- Doing Business 2009 classification of investment protection, 54, 72n5
- E**
- East Asia
- availability of uncultivated land, 79
  - past processes of land expansion, 10
- Eastern Europe and Central Asia. *See also specific countries*
- availability of uncultivated land, xxxii, 79
  - cropland expansion, xxix
  - frequency distribution of projects and total land area, 52
  - little land available, high yield gap (Type 3), xxxv
  - methodological approaches, xxiv
  - superfarms, 26–28
  - yield gap vs. relative land availability, 183f
- Ecological Economic Zoning framework (Brazil), 123
- econometric analysis of agricultural investment projects, 54–55, 55t
- economic viability. *See* technical and economic viability
- Egypt
- availability of uncultivated land, xxxiii
  - distribution of projects and investors, 53
- EITI. *See* Extractive Industries Transparency Initiative
- elites, land grabbing by, 68, 102
- El Tejar (Brazil and Argentina), 32
- employment
- expectations related to land deals, 63–64, 68, 124
  - females and other vulnerable populations, 70
  - labor laws, 123, 124
  - large-scale investment and, 38–39, 39t
  - smallholders' incomes in relation to wage employment on large-scale farms, 164t

- enforcement of agreements and contracts, 116
  - environmental and social sustainability, xxxix, 96, 119–24
    - enforcement of policies and standards, 121–22, 127*n*13
    - social standards, adherence to, 122–24
    - unsuitable areas, protection of, 120–21
  - environmental challenges, 16–19. *See also* climate change; deforestation
  - environmental impact assessments (EIAs), 57, 121–22
  - “Equator Banks,” 130, 136
  - Equator Principles, 136–37
  - ethanol. *See* biofuels
  - Ethiopia
    - biofuels development, 152*n*4
    - boundaries unclear for
      - government lands, 120
    - compensation from voluntary transfers, 108, 109
    - domestic investors, 63
    - environmental permits, 122
    - expropriations, 105
    - frequency distribution of projects
      - and total land area, 52
    - incentives for investors, 116
    - job creation from land
      - investments, 64
    - large farms, 24
    - large-scale land acquisitions, 62
    - maize yields, 84
    - methodology and data
      - collection, 146–47
    - monitoring of implementation
      - of investments, 118
    - protected lands, 120
    - reporting on land use, 60
    - transfer of property rights, xxx, xxxviii, 104
  - eucalyptus, 19
  - European Union. *See also specific countries*
    - biofuels and, 12
    - past processes of land expansion and, 13
    - publicly listed companies, 29
    - trade preferences, 26
  - evictions, 105
  - evidence-based multistakeholder approach, xxiv, 140, 141–43
  - expropriation of land prior to voluntary transfers, 104–6, 126*n*3
  - Extractive Industries Transparency Initiative (EITI), 139, 139*b*, 143, 144*n*7
- F**
- fairness and targeting of
    - proceeds from voluntary transfers, 107–9
  - family-owned and operated farms, 28–30, 28*t*
  - farm management companies, 33*b*
  - financial institutions, 136–37
  - Food and Agricultural Organization (FAO), xxiv, 15, 16
    - “Voluntary Guidelines for Tenure of Land and Associated Natural Resources,” 140
  - forest dwellers, 101
  - forestland
    - concessions, regulation of, 126*n*4, 153*n*9
    - cultivation of. *See* deforestation
    - failure to map and identify
      - boundaries of, 120
    - maintaining, xxvii
    - plantations. *See* plantation forests
    - unprotected, 81
  - Forest Stewardship Council (FSC), 134, 143*n*4
  - Forum of Sovereign Wealth Funds (2008), 136
  - future demand for agricultural commodities and land, xxiv, xl–xlii, 6–7, 13–16, 129–44, 163*t*
  - civil society, xlii, 137–38
  - evidence-based multistakeholder approach, need for, xxiv, 141–43
  - international organizations, xlii, 138–41

- future demand for agricultural commodities and land (*continued*)
  - investors, 133–37
    - commodity standards, 134–36
    - financial institutions, 136–37
  - key areas for government action, 130–33
- G**
- Ghana
  - disclosure of public information, 117
  - environmental permits, 122
  - frequency distribution of projects and total land area, 52
  - inaccurate or unavailable records, 117
  - incomplete projects, effect of, 126*n*9
  - large farms, 25
  - local decision making, 103
  - oil palm yields, 86
  - tax rebates and incentives, 113–14
  - government action
    - approval of projects by government agencies, 114–16, 125
    - environmental challenges and, 19
    - key areas for, xl–xlii, 130–33
    - partnerships between small farmers and large investors, 38
    - targeting countries with weak land governance, 55, 141
  - GRAIN blog on large-scale land acquisition, 50
  - grain production
    - employment generation, 38–39
    - large farms, xxix, 23, 32
    - pricing, 15
    - superfarms, 27
  - “green deserts,” 13
  - greenhouse gas emissions. *See* climate change; REDD
- H**
- Hertel, T. W., 43*n*2
- horticulture, xxix, 34
- I**
- incentives
  - enforcement of agreements and contracts with incentive recipients, 116
  - tax, 113–14
- India
  - availability of uncultivated land, xxxiii
  - cropland expansion, xxvi
  - distribution of projects and investors, 53
  - expropriations, 126*n*3
  - large farms, 31
  - maize yields, 84
  - indigenous people’s rights, 123. *See also* long-established property rights
- Indonesia
  - boundaries unclear for government lands, 120
  - conflict
    - over concessionary agreements, 113
    - over land claims, 70
  - consultation of affected populations, 107
  - cropland expansion, xxvii, 42
  - customary land rights, 100
  - deforestation, social impacts of, 19–21, 21*f*
  - forest estate and state ownership, 99
  - frequency distribution of projects and total land area, 52
  - inaccurate or unavailable records, 117
  - incentives for investment, 126*n*8
  - land regulation, 61
  - methodology and data collection, 147
  - migrant labor, 69
  - recording of property rights, 100
- infrastructure
  - large farms, provision by, 32
  - proximity to, 37*b*, 40
- initial public offerings (IPOs) of superfarms, 27

- International Finance Corporation  
(IFC) performance standards,  
130, 136, 143*n*5  
Compliance Adviser/Ombudsman's  
role, 143*n*6
- International Fund for Agricultural  
Development, xxiv
- International Institute  
for Applied Systems  
Analysis (IIASA), 78
- international organizations' role, xlii,  
130, 138–41
- investments  
access to, 32  
econometric analysis of, 54–55, 54*t*  
failure to attract, xxix, 23  
future challenges for investors, 133–37  
large-scale. *See* large-scale investment  
and acquisitions  
mechanisms to implement, 114–19.  
*See* policy, legal, and  
institutional framework (PLIAF)  
assignment and performance  
of institutional  
responsibilities, 114–16  
enforcement of agreements and  
contracts with incentive  
recipients, 116  
monitoring  
implementation, 118–19  
public disclosure of relevant  
information, 96, 116–17  
principles for responsible  
agro-investment, xxiv, xxv*b*, 3
- irrigation, 15
- Ivolga (Russian company), 32
- J**
- jatropha, 26
- jobs. *See* employment
- K**
- Kazakhstan  
cropland expansion, xxix  
frequency distribution of projects  
and total land area, 52  
superfarms, 27  
wheat yields, 83
- L**
- “land banks,” 106
- land boundaries  
failure to designate, 61, 120  
recording of, 101
- land expectation value (LEV), 40, 41*t*
- land prices, 35–38, 37–38*b*
- land regulation, 61, 102, 107,  
123, 125, 132
- land rights  
acquisition, defined, 72*n*1  
common property, state vs. local  
ownership, 99  
export growth and, 42  
large farms and, 23–24, 26  
local decision making, 102–3  
long-established rights, 99–100  
policy implications of land  
demand on, 55  
public recording of, 100–102  
recognition of, xxviii,  
xxxvii–xxxviii, 40, 44*n*10,  
95, 98–103, 132  
risks associated with land  
acquisition, xxiv, xxix–xxxii  
secondary rights, 101, 108
- land rush, 2*b*, 5, 49–73  
commodity distribution  
of projects and  
production status of  
capital, 51, 53*f*  
country inventories of. *See* country  
inventories of land  
food prices boom (2007–08) linked  
to interest in foreign land  
acquisition, 50, 51*f*  
frequency distribution of projects  
and total land area, 51, 52*f*  
media reports on, 50–55  
descriptive evidence, 50–53  
econometric analysis, 54–55, 55*t*  
poverty reduction and, 3  
project case studies, 64–70, 65–66*t*.  
*See also* case studies
- land use conversion, 82*b*  
class actions to halt, 122  
greenhouse gas emissions and, 43*n*1  
land valuation, 39–41

- Lao People's Democratic Republic
  - frequency distribution of projects and total land area, 52
  - management of land
    - concessions, 60*b*
  - methodology and data collection, 148
- large farms, xxviii, xxix, xxxiv–xxxv, 31–34. *See also* superfarms
  - disappointing performance of, 23–26, 24*f*, 25*f*
  - history of, xliii*n*2
  - partnerships with smallholders, 34–38, 35*b*, 36*b*
  - smallholders' incomes in relation to wage employment on, 164*t*
- large-scale investment and acquisitions, 61–64, 62*t*
  - employment generation from, 38–39, 39*t*
  - land valuation and, 39–41
  - local benefits of, 34–41
  - partnerships between small farmers and large investors, 34–38
- Latin America and the Caribbean. *See also specific countries*
  - availability of uncultivated land, xxxii, 79
  - crimes against the environment, 122
  - cropland expansion, xxvi–xxvii
  - deforestation, xxvi, 43*n*1, 120
  - environmental challenges, 16–19
  - farm management companies, 33*b*
  - frequency distribution of projects and total land area, 52
  - future demand for agricultural commodities and land, 16
  - maximum potential value of output, 190*m*
  - methodological approaches, xxiv
  - past processes of land expansion, 10, 11, 13, 16–19
  - poverty reduction, missed opportunities for, 16–19
  - rained crop production, 76
  - soybean yields, xxvi
  - suitable land available, high yield gap (Type 4), xxxv, xxxvi, xxxvii*f*
  - suitable land available, low yield gap (Type 2), xxxiii–xxxiv
  - water availability, 15
  - wood and pulp production, xxvi
  - yield gap vs. relative land availability, 184*f*
- laws and regulations. *See* land regulation
- leases. *See* rental of land
- LEV (land expectation value), 40, 41*t*
- Liberia
  - auctions in forestry sector, 111
  - boundaries unclear for government lands, 120
  - case study, 65*t*, 67, 157–58*t*
  - compensation and Corporate Social Responsibility principles, 126*n*2
  - conflict
    - over concessionary agreements, 113
    - over land claims, 68, 70
  - consultation of affected populations, 107
  - contract farming, 124
  - customary lands ownership, 99–100
  - inaccurate or unavailable records, 117
  - job creation from land investments, 68
  - land boundaries, 61
  - land inventory, 72*n*10
  - land regulation, 61
  - large-scale land acquisitions, 62
  - lease payment for agricultural lands, 108–9
  - methodology and data collection, 147–48
  - migrant labor, 69
  - property rights, xxx
  - socioeconomic impacts by investors, 68, 122–23
- little land available, high yield gap (Type 3), xxxiv–xxxv, 89, 90*f*
- little land for expansion, low yield gap (Type 1), xxxiii, 87–88, 87*f*
- local benefits of large-scale investment, 34–41



- local decision making on property rights, 102–3, 123, 142.
  - See also* consultation with local right holders
- local visions for development, consistency with, 112–14
- long-established property rights, 99–100
- long-term leases of use rights, 72*n*1, 112
  
- M**
- machinery, 30, 43–44*n*7
- Madagascar
  - availability of uncultivated land, xxxiii
  - investor interest levels, xxix
  - maize yields, 84
  - soybean yields, 85
  - sugarcane yields, 85
- maize
  - availability of uncultivated land for, 80, 172–73*t*
  - case studies, 67
  - cropland expansion and, xxvi
  - crop yields, 14*b*, 84
    - maximum potential yield, 81
  - demand for, 12
  - employment generation, 39
  - land prices, 38*b*
  - large farms, 25, 25*f*, 32
- Malawi
  - availability of uncultivated land, xxxiii
  - cropland expansion, xxviii
  - large farms, 26
  - maize yields, 84
  - suitable land available, high yield gap (Type 4), xxxv
- Malaysia
  - cropland expansion, xxvii
  - deforestation, social impacts of, 19–20
  - oil palm yields, 86
  - partnerships between small farmers and large investors, 36*b*
- Mali
  - customary land rights, 100
  - maize yields, 84
- media reports on investor intentions, 50–55
  - descriptive evidence, 50–53
  - econometric analysis, 54–55, 55*t*
- MELCA (Movement for Ecological Learning and Community Action), 152*n*4
- methodology, xxiv–xxv, 3, 145–53
  - data gaps and inconsistencies, 4
- Mexico
  - case study, 65*t*, 158*t*
  - conflict over land claims, 70
  - ejidos lands, 102, 103
  - environmental class actions, 122
  - job creation from land investments, 68
  - land registration, 102
  - large-scale land acquisitions, 62
  - local decision making, 103
  - property rights, xxxviii
  - short-term leases, 112
  - socioeconomic impacts by investors, 68
  - technology benefits of land investment, 69
- Middle East and North Africa
  - availability of uncultivated land, 79
  - cropland expansion, xxvi
  - distribution of projects and investors, 53, 63
  - little land for expansion, low yield gap (Type 1), xxxiii
  - maximum potential value of output, 192*m*
  - past processes of land expansion, 12
  - water availability, 15
  - wheat and food security concerns, 83
- MIGA (Multilateral Investment Guarantee Agency), 136
- migrant labor, 69
- model agreements, 131
- monitoring
  - of implementation of investments, xl, 118–19
  - of legal reserves, xxvii
- monopsonistic land markets, 109

- Mozambique
- auctions in forestry sector, 111
  - availability of uncultivated land, xxxiii, 79–80
  - case study, 65*t*, 67, 72*n*11, 159*t*
  - concessions overlapping with community claims, 188*m*
  - conflicts over land claims, 68, 70
    - concessionary agreements, 113
  - consultation of affected populations, 106
  - customary land rights, 100
  - domestic investors, 63
  - frequency distribution of projects and total land area, 52
  - investor interest levels, xxix
  - job creation from land investments, 68, 69, 124
  - land boundaries, 61
  - Land Law (1997), 152*n*6
  - Land Policy (1995), 101
  - land regulation, 61, 102, 138
  - land valuation, 40
  - large-scale land acquisitions, 62–63
  - lease payment for livestock and rainfed agricultural lands, 108
  - local decision making, 103
  - maize yields, 84
  - methodology and data collection, 148–49
  - monitoring of implementation of investments, 118
  - project review and approval, 114, 126*n*7
  - property rights, xxx
  - Regulations and Technical Annex (1998), 101
  - soybean yields, 85
  - suitable land available, high yield gap (Type 4), xxxv
  - Territorial Planning Law (2007), 123
- Multilateral Investment Guarantee Agency (MIGA), 136
- multilateral organizations. *See* international organizations' role
- N**
- national visions for development, consistency with, 112–14
- natural resources rights, 101, 132
- Nigeria
- domestic investors, 63
  - environmental impact assessment (EIA), 57
  - expropriations, 105
  - frequency distribution of projects and total land area, 52
  - job creation from land investments, 64
  - large farms, 25
  - maize yields, 84
  - methodology and data collection, 149
  - oil palm yields, 85–86
- nongovernmental organizations (NGOs), 21
- North America. *See also* United States
- actual to potential physical yields, 81
  - yield gap vs. relative land availability, 185*f*
- O**
- Oceania
- actual to potential physical yields, 81
  - maximum potential value of output, 193*m*
  - yield gap vs. relative land availability, 185*f*
- oil palm
- availability of uncultivated land for, 80, 177–78*t*
  - case studies, 67
  - crop yields, 85–86
  - deforestation and, 19–22, 43*n*5
  - demand for, xxviii, 11–12
  - employment generation, 38–39
  - incentives for investment, 126*n*8
  - large farms, xxvii, 31, 32
  - partnerships between small farmers and large investors, 34
- Organisation for Economic Co-operation and Development (OECD), 2
- Investment Guidelines, 140

- output value surfaces, 78, 189*m*  
owner-operated farms, xxix
- P**
- Pact for Eradication of Forced Labor  
(Brazil), 124
- palm oil. *See* oil palm
- Paraguay  
community involvement and  
socioeconomic benefits, 69  
farm management companies, 33*b*  
methodology and data  
collection, 150  
past processes of land expansion, 16  
soybean yields, 85
- partnerships between small farmers  
and large investors, 34–38,  
35*b*, 36*b*, 102
- pastoralists and pasture lands, 13, 25,  
70, 101, 108, 147, 152*n*2
- past processes of land expansion,  
10–13, 10*t*, 11*f*  
commodities and, 11, 12*t*  
regional perspectives, 16–28  
Eastern Europe and  
Central Asia, 26–28  
Latin America, 16–19  
Southeast Asia, 19–22  
Sub-Saharan Africa, 23–26
- perennial crops  
employment generation, 38  
LEV for, 40, 41*t*  
partnerships between small farmers  
and large investors, 34
- Peru  
auctions of public lands, xxvii,  
xxvii*b*, xliii*n*1, 110, 111*b*, 117  
expropriations, 105, 126*n*3  
job creation from land  
investments, 64  
large-scale land acquisitions, 62  
methodology and data  
collection, 150  
policy, legal, and institutional  
framework, 96, 97*b*  
property rights, 42  
settlers' rights, 121  
unprotected forested land, 81
- plantation forests  
cropland expansion and, xxvi, 15–16  
investment in, 19  
large farms, 32  
past processes of land  
expansion, 13, 17
- policy, legal, and institutional  
framework (PLIAF), xxiv,  
xxxvii–xxxix, 3, 6, 95–127  
environmental and social  
sustainability, xxxix, 119–24  
enforcement of, 121–22  
social standards, adherence  
to, 122–24  
unsuitable areas, protection  
of, 120–21  
existing property rights, 98–103.  
*See also* land rights  
mechanisms to implement  
investments, 114–19, 125  
assignment and  
performance of institutional  
responsibilities, 114–16  
enforcement of agreements and  
contracts with incentive  
recipients, 116  
monitoring, 118–19  
public disclosure of relevant  
information, 116–17  
Peru as example of, 96, 97*b*  
recommendations for unused  
land, 125  
rights recognition. *See* land rights  
technical and economic viability,  
xxxix, 109–14, 125  
competitive approval processes,  
110–12, 125  
consistency with local and national  
visions for development, 112–14  
technical feasibility, 109–10  
transparency, xxxviii–xxxix  
voluntary transfers, xxxviii, 104–9  
consultation of affected  
populations, 70, 71, 106–7  
expropriation of land prior to,  
104–6, 126*n*3  
fairness and targeting of proceeds  
from, 107–9

- population growth and food consumption, 14, 23
  - poverty reduction
    - employment generation from large-scale investment, 38
    - land rush and, 3
    - missed opportunities for, 16–19
  - principles for responsible agro-investment, xxiv, xxvb, 3
  - Procuraduría Agraria* (Mexico), 103
  - Procuraduría Federal para la Protección al Ambiente (PROFEPA), 122, 127n13
  - ProInversión (Peru agency), 111b
  - property. *See headings starting with “land”*
  - protected areas, xxvii, 142
  - public goods, provision by investors, 68
  - publicly listed companies, 29, 29t
  - public recording. *See recording of existing property rights*
  - pulp industry. *See wood and pulp production*
  - purpose of study, 2–3
- Q**
- quasi-judicial processes that require public notice, 115
- R**
- rained crop production, 77–83. *See also specific crops*
    - availability of suitable land for, xxxii–xxxvii, xxxiit, xxxivf, 76, 78–83, 79–80t
    - methodology, 78
  - rapeseed, 11, 13
  - recording of existing property rights, 100–102
    - inaccurate or unavailable, 117, 120
  - REDD (United Nations Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries), xxviii, 21, 21f
  - rehabilitation of degraded lands, xxvii
- Renewable Transport Fuels Obligation (RTFO), 134, 143n2
  - rental of land, 33b, 34–35, 35b, 36b, 40, 72n1, 107, 108
  - research and development (R&D), 32, 42
- rice
- cropland expansion and, xxvi, xxvii
  - crop yields, 14b
  - deforestation and, 22
  - demand for, 12–13
  - exports, xxviii
  - large farms, 25, 32–34, 33t
- Roundtable on Responsible Soy, 19, 134
  - Roundtable on Sustainable Palm Oil (RSPO), 22, 31, 134, 135
- rubber sector, xxviii, 22, 69
- Russia
- availability of uncultivated land, xxxiii, 79–80
  - cropland expansion, xxix
  - distribution of projects and investors, 53
  - frequency distribution of projects and total land area, 52
  - publicly listed companies, 29
  - superfarms, 27
  - unprotected forested land, 81
- Rwanda
- availability of uncultivated land, xxxiii
  - cropland expansion, xxviii
  - suitable land available, high yield gap (Type 4), xxxv
- S**
- Salih, M. A., 43n6
  - seasonal jobs, 69
  - secondary land rights, 101, 108
  - semi-mechanized farms, 23–24, 24f
  - sesame, 23
  - short-term investors, bias toward, 113
  - short-term leases, 112
  - small farms. *See also family-owned and operated farms*
    - deforestation and, 22
    - incomes in relation to wage employment on large-scale farms, 164t

- partnerships with large investors, 34–38, 35*b*, 36*b*
- policy distortions and, 23
- poverty reduction and, 17
- social standards, adherence to, 122–24
- social sustainability. *See* environmental and social sustainability
- socioeconomic impacts
  - auction mechanism and, 111–12
  - case studies, 68–70, 71
  - failure to adhere to social agreements and, 122–23
- sorghum
  - large farms and, 23–24
  - production costs, 163*t*
- South Asia. *See also specific countries*
  - availability of uncultivated land, 79
  - water availability, 15
- Southeast Asia. *See also specific countries*
  - cropland expansion, xxvi, xxvii–xxviii
  - frequency distribution of projects and total land area, 52
  - methodological approaches, xxiv
  - past processes of land expansion, 11, 12, 19–22
- South-South exchanges, xxxvi, 55
- soybean
  - availability of uncultivated land for, 80, 174–75*t*
  - crop yields, xxvi, 11–12, 13, 14*b*, 84–85
  - land prices, 38*b*
  - large farms, 32
  - past processes of land expansion, 17
- Sub-Saharan Africa. *See also specific countries*
  - availability of uncultivated land, xxxii, xxxiii, 79
  - commodity boom, effect on, xxix–xxx
  - cropland expansion, xxvi, xxviii–xxix
  - export crops, 26
  - foreign investors, land acquisitions by, 1
  - frequency distribution of projects and total land area, 52
  - future demand for agricultural commodities and land, 16
  - incentives for investors, 116
  - large farms
    - disappointing performance of, 23–26, 24*f*
    - opportunities for, 32
  - long-term leases of use rights, 72*n*1, 112
  - maximum potential yield, 81
  - methodological approaches, xxiv
  - past processes of land expansion, 10
  - rainfed crop production, 76
  - suitable land available, high yield gap (Type 4), xxxv, xxxvi, xxxv*f*
  - water availability, 15
  - wheat yields, 83–84
  - yield gap vs. relative land availability, 181*f*
- Sudan
  - availability of uncultivated land, xxxiii, 79–80
  - domestic investors, 63
  - expropriations, 105
  - frequency distribution of projects and total land area, 52
  - investor interest levels, xxix
  - land rights, 60
  - large farms, xxviii, 23–24, 24*f*, 26, 43*n*6
  - large-scale land acquisitions, 62–63
  - maize yields, 84
  - methodology and data collection, 151
  - notice of transfers of property and period to object, 115
  - property rights, xxx
  - sorghum production costs, 163*t*
  - soybean yields, 85
  - suitable land available, high yield gap (Type 4), xxxv
  - transfer of property rights, 104
  - Unregistered Land Act (1970), 99
- sugarcane
  - availability of uncultivated land for, 80, 176*t*
  - for biofuels. *See* biofuels

- sugarcane (*continued*)
- case studies, 67
  - cropland expansion and, xxvi
  - crop yields, 85
  - demand for, 13
  - employment generation, 38
  - large farms, 25–26, 31
  - LEV for, 40
  - partnerships between small farmers and large investors, 34
  - past processes of land expansion, 17, 18–19
  - suitability of land, 5–6, 75–94
    - commodity perspective, 83–86
      - maize, 84
      - oil palm, 85–86
      - soybean, 84–85
      - sugarcane, 85
      - wheat, 83–84
    - country typology, xxiv, xxxii–xxxvii, 7, 77, 86–91, 86*f*
    - little land available, high yield gap (Type 3), 89, 90*f*
    - little land for expansion, low yield gap (Type 1), 87–88, 87*f*
    - suitable land available, high yield gap (Type 4), 89–91, 91*f*
    - suitable land available, low yield gap (Type 2), 88–89, 88*f*
    - rained crop production, 77–83
      - availability of suitable land for, xxxii–xxxvii, xxxii*t*, xxxiv*f*, 78–83, 79–80*t*
      - methodology, 78
    - suitable land available, high yield gap (Type 4), xxxv, 89–91, 91*f*
    - suitable land available, low yield gap (Type 2), xxxiii–xxxiv, 88–89, 88*f*
  - sunflower, 11
  - superfarms, xxix, 26–28
  - sustainability. *See* environmental and social sustainability
- T**
- Tanzania
- boundaries unclear for government lands, 120
  - case study, 66*t*, 67, 159–60*t*
- compensation from voluntary transfers, 108, 109
- conflict over land claims, 70
- cropland expansion, xxviii
- customary land rights, 100
- disclosure of public information, 117
- expropriations, 106
- large farms, xxviii, 25
- large-scale land acquisitions, 62
- maize yields, 84
- participatory land use planning, 123
- project review and approval, 115–16
- property rights, xxx, 70, 138
- protected lands, 120
- socioeconomic impacts by investors, 68
- soybean yields, 85
- transfer of property rights, 104
- Village Land Act (1999), 101
- taxation, 113–14
- technical and economic viability, xxxix, 95, 109–10, 125
- competitive approval processes, 110–12
- consistency with local and national visions for development, 112–14
- technical feasibility, 109–10
- technology development, xxviii, 69
- Territorial Planning Law (Mozambique), 123
- Thailand
- cropland expansion, xxvii, 42
  - deforestation and, 22
  - large farms, 25, 31
  - property rights, xxviii, 42
  - technological development, xxviii
- trade in commodities, xxvi, xxviii, xxix, 13, 26, 42
- transfers. *See* voluntary transfers
- transparency, xxxviii–xxxix, 96, 116–17
- recommendations for, xl
- Tyner, W. E., 43*n*2
- U**
- Ukraine
- case study, 66*t*, 67, 72*n*11, 160–61*t*
  - community involvement in decision making, 107

- cropland expansion, xxix
- frequency distribution of projects
  - and total land area, 52
- job creation from land
  - investments, 68
- large farms, 32
- lease payment for agricultural lands, 109, 112
- methodology and data
  - collection, 151
- migrant labor, 69
- partnerships between small farmers
  - and large investors, 38
- publicly listed companies, 29
- socioeconomic impacts by
  - investors, 68
  - superfarms, 27
- undocumented land claims, 70
- United Nations
  - Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries. *See* REDD
  - Conference on Trade and Development, xxiv
- United States
  - distribution of projects and investors, 53
  - land prices, 38*b*
  - past processes of land
    - expansion, 12, 13
  - principles for responsible agro-investment, 3
  - publicly listed companies, 29
  - wages, 30, 30*f*
- Unregistered Land Act (Sudan), 99
- unsuitable areas, protection of, 120–21
- Uruguay
  - availability of uncultivated land, xxxiii
  - farm management companies, 33*b*
  - large farms, 34
  - past processes of land
    - expansion, 16, 19
  - soybean yields, 85
  - suitable land available, high yield gap (Type 4), xxxvi

## V

- Variable Infiltration Capacity (VIC)
  - model, 82*b*
- Vietnam
  - cropland expansion, xxvii
  - large farms, 32–34
  - property rights, xxviii, xxxviii, 42
  - technological development, xxviii
- Village Land Act (Tanzania), 101
- voluntary transfers, xxxviii, 95, 104–9
  - consultation of affected populations, 70, 71, 106–7
  - expropriation of land prior to, 104–6
  - fairness and targeting of proceeds from, 107–9

## W

- wages, 30, 30*f*
- water availability, 15
- Western Europe
  - actual to potential physical yields, 81
  - little land for expansion, low yield gap (Type 1), xxxiii
  - maximum potential value of output, 191*m*
  - yield gap vs. relative land availability, 185*f*
- wheat
  - availability of uncultivated land for, 80, 169–71*t*
  - crop yields, 14*b*
  - large farms, 25
  - yield increases, 83–84
- women, socioeconomic effects
  - on, 69–70
- wood and pulp production, xxvi, 13, 19
- World Bank
  - financial safeguards, 136
  - Inspection Panel, 143*n*6
  - principles for responsible agro-investment, xxiv, xxv*b*, 3
- World Investment Report* (2009), 43*n*5
- World Resources Institute, 21

## Y

- yields. *See* crop yields

## Z

### Zambia

- availability of uncultivated land, xxxiii
- case study, 66*t*, 67, 72*n*11, 161–62*t*
- compensation from voluntary transfers, 108
- conflicts with local communities, 68
- cropland expansion, xxviii
- environmental impact assessment (EIA), 57
- information collection and disclosure, 117

investor interest levels, xxix

land rights, 99

large farms, xxviii, 25, 26

methodology and data

collection, 152

soybean yields, 85

suitable land available, high yield gap

(Type 4), xxxv

transfer of property rights, 104

unprotected forested land, 81

### Zimbabwe

large farms, 26

maize yields, 84