

Index

A

Africa, 10, 141
Agglomeration economies, 22, 27, 77, 185
Agribusiness products, 99, 102, 103
Agricultural circuit, urbanization of, 183
Agricultural Cooperative Cotia (CAC), 31, 32, 49
Agricultural Cooperative of Western Bahia (COOPROESTE), 49
Agricultural cooperatives, 7, 8, 23, 32, 73, 115, 126–128, 133, 134
Agricultural frontier movement, 172
Agricultural inputs, 11, 13, 39, 40, 50, 55, 62, 76, 77, 94, 170
Agricultural Research Company of Minas Gerais (EPAMIG), 37
Agriculture, expansion of, 37, 45, 58
Agro-Forestry-Pastoral Research Center, 46
Agro-Industrial Complex (AIC), 171
Agro Industrial Cooperative of Tocantins (COAPA), 58
Agro-industrial District of Anápolis (DAIA), 50, 56
Agro-industrial value chains, 4, 5, 29, 36, 37, 39, 48, 49, 56
Agro-industry, 4, 8, 10–12, 20–22, 29, 36, 37, 40, 42, 45, 47–49, 56–58, 61–64, 98, 115, 128, 166, 183
Alto Paranaíba Agricultural Development Program (PADAP), 6, 7, 21, 24, 31, 32, 78
Animal meat, 14, 99, 108, 114, 115, 128
Anthropic classes, 141, 142
Argentina, 133, 134, 159
Assad, Eduardo, 157

B

Bahia State, western part of, 107, 123–125, 152
Beef production, 104
Biodiesel plant, 45
Biome, 25, 70, 138, 139, 140, 153
Borlaug, Norman, 69
Brasília, 72, 74, 78, 139, 143, 165, 179–183, 186
Brazil, 3–8, 10, 14, 19–21, 24, 25, 27, 29, 30, 35, 40, 42, 44, 48, 56, 57, 61, 69, 70, 72, 73, 75, 76, 80, 94, 97–99, 101–104, 107–109, 112, 114, 115, 118, 121, 125, 132–134, 137–141, 158, 164, 165, 168–170, 172–181
Brazilian Agricultural Research Corporation (EMBRAPA), 5, 12, 21, 37, 42, 46, 49, 58, 60–62, 74, 94, 126, 127, 139, 141, 156, 158, 165, 176
Brazilian Institute for Environment and for Renewable Natural Resources (IBAMA), 8, 15, 141, 144, 145, 148
Brazilian Institute for Geography and Statistics (IBGE), 2, 51, 61, 101–105, 126, 138, 139, 141–143, 169, 173, 174, 176, 177, 180, 183, 184
BRF Sadia, 44

C

CAMPO Biotecnologia Vegetal laboratories, 37
Cattle industry, 180
Cattle ranchers, 16, 141, 156, 157
Center pivot irrigation, 12, 27, 35, 54, 63
Central place theory, 166

- Central-West Region Development Program (POLOCENTRO), 7, 72, 73, 75, 78, 82, 83, 85, 139, 165, 178
- Central-West region, Brazil *See also* Cerrado biome, 70, 73
- Cerrado Agricultural Research Center (CPAC), 5–7, 9, 21, 73, 74, 99, 105
- Cerrado agriculture, 2–6, 8, 10–12, 19–21, 23–25, 27–33, 48, 51, 55, 56, 60–62, 64, 69, 73, 74, 77, 78, 94
- Cerrado biome, 3, 10, 11, 15, 24, 25, 61, 70, 77, 84, 137, 138, 142, 144, 153, 154
- Chapadão, 151, 152
- Chicken production, 50
- China, 4, 75, 76
- City, role of, 166, 167
- Clusters, 12, 14, 20–24, 27, 29, 37, 39, 45, 58, 62–64, 107, 115, 127, 135, 168
- Coffee, 2, 4, 36, 37, 55, 97, 102, 103, 120, 125, 126, 139, 164, 168, 174
- Company clustering, in Cerrado, 128
- Company of Agricultural Promotion (CAMPO), 7, 11, 12, 21, 23, 31, 32, 37, 39, 42, 62, 64
- Compound feed (livestock feed), 14, 104, 108, 109, 112
- Conservative modernization of Brazilian agriculture, 165
- Consolidated rural area, 153
- Cooperative of Coffee Growers of Mandaguari Ltd (COCARI), 51, 55
- Cooperatives, 7, 11, 12, 21, 23, 31, 39, 40, 42, 45, 46, 51, 62–64, 76
- Cooperlucas, 39, 40, 115
- Corn, 2–4, 35, 46, 48–50, 54, 55, 97, 101, 102, 104, 109, 117, 118, 120, 125, 134, 135, 140, 157, 166, 181
- Corn cultivation, 35
- Cotton, 2, 4, 37, 41, 42, 46, 48–50, 97, 103, 117, 125, 126, 140, 143, 150, 152, 157, 166
- Cristalina region, 27, 50, 51, 53, 55
- Croplands, 15, 141, 143, 146, 147, 149, 151
- Cross-industrial companies, 132
- Crushers, investments in, 11, 62
- D**
- Dairy plant, 45
- Decision Support System, 159
- Deforestation, 15, 144, 145, 146, 148, 150, 153, 155, 156
- Demographic growth, 172, 178
- Demonstration effects, 11, 57, 62
- Differential Global Positioning System (dGPS), 158, 159
- Direct spillover influence, 81, 90
- Dobereiner, Johanna, 156
- Double cropping, 83
- E**
- Economic development, 8, 16, 38, 70
- Economies of scale, 8, 10
- Education sector, 38
- Electricity system, 128
- Employment opportunities, 28, 29, 48, 60, 156, 172
- Environmental Rural Registry (CAR), 153, 155
- Ethanol, 4, 57, 83, 121, 166
- Export industry, 99
- Extensive urbanization, concept of, 170, 171
- F**
- Faissol, Speridão, 168
- Farming families, 22, 27, 39
- Farming loans, 50
- Federal University of Goiás (UFG), 141
- Federal University of Uberlândia (UFU), 141
- Financial cooperation, 7, 74
- Financial institutions, 128, 134
- Fiscal module, 155
- Friato, 53, 132
- Fundação Rio Verde, 46
- G**
- Gasoline prices, 4, 166
- Geiger, Pedro Pinchas, 168, 169
- Georeferenced soil sampling, 159
- Global food security, 4
- Goiás (GO), 25, 38, 56, 74, 78, 84, 99, 107, 109, 115, 116, 118, 125–128, 132, 175, 181, 185
- Grain companies, 75, 114, 115, 123, 126–128, 133, 134
- Grain production, growth in, 3, 4, 19, 27, 41, 45, 70, 148
- Greenhouse gases emission, 155
- Green revolution, 4, 69, 165, 170
- Gross Municipal Product (GMP), 80–82
- Growth poles, 12, 20–22, 29, 62
- H**
- Higher value crops, 35, 54
- Horizontal supply chain, 132
- Human development indicators, 28, 29

I

Inclusive growth, 10, 12, 28, 29, 64
 Income multiplier effect, 181
 Indirect spillover influence, 10, 70, 90
 Industrial clustering, 125
 Institutional innovations, 3, 6, 21, 29
 Integrated Crop-Livestock-Forest System (ICLFS), 156, 157
 Intended Nationally Determined Contribution (INDC), 155
 Irrigation, 12, 16, 25, 27, 34, 35, 43, 49, 52–54, 59, 63, 74, 118, 128, 158–160

J

Jacobs, Jane, 167, 180
 Japan, 3, 6, 7, 25, 27
 Japanese-Brazilian Cooperation Program for Cerrados Development (PRODECER), 7–11, 13, 14, 20–27, 29–33, 35, 37–42, 45, 48–51, 54–58, 60–62, 69, 70, 73–78, 80–94, 97, 101, 105, 107, 109, 112, 115, 117, 118, 120, 123, 125–128, 134, 139, 143, 165, 178
 Japan International Cooperation Agency (JICA), 7, 8, 21–23, 27, 31, 37, 38, 41, 47, 60, 77, 112–114, 116, 117, 119, 120, 122, 123, 127, 131, 139, 163

K

Kluthcouski, João, 157
 Knowledge creation, 74, 94

L

Labor demand, 181
 Lago Azul SA (LASA), 53, 55
 Land use, in Cerrado, 6, 15, 83, 137, 139, 141, 143, 144, 147, 156
 Latosol, 3
 Learning and innovation ecosystem, 12, 23, 24, 27, 37, 38, 46, 47, 49, 50, 55, 58, 60, 62–64
 Liming, 139
 Livestock product, 104
 Livestock raising, 16, 104, 163, 179–181, 185
 Loans, agriculture, 127
 Lucas do Rio Verde region, 39, 45, 47–49, 56
 Luís Eduardo Magalhães, 24, 48, 49, 55, 64

M

Macro-spatial model, 70
 Maggi, Andrés, 41

Maize, 4, 11, 19, 22, 41, 42, 44, 62, 139, 143, 147, 157, 158
 Maps, Cerrado, 137
 Market area theory, 166
 Mato Grosso (MT), 2, 16, 25, 29, 39–41, 45, 47, 48, 72, 74, 77, 78, 80, 84, 107, 109, 112–114, 121, 125, 132, 138, 143, 146, 148, 152, 153, 164, 173–176, 179–181, 183–185
 MATOPIBA, 25, 27, 137, 146–150
 Matsubara, Munefume, 42
 Mechanization, agriculture, 180
 Mello de Souza, Plínio Itamar, 6
 Migration, 16, 27, 29, 39, 40, 47–49, 56, 73, 168, 172–175, 178, 179, 181
 Milk production, 108
 Minas Gerais (MG), 2, 6, 16, 24, 25, 30–33, 37, 38, 42, 50, 72, 74, 77, 78, 80, 84, 99, 107, 109, 118–120, 125, 138, 143, 171, 176, 179–181, 184, 185

N

National Institute of Settlement and Agrarian Reform (INCRA), 72–74, 78, 165
 National Integration Program, 178
 National Rural Credit System, 139, 165
 National Space Research Institution (INPE), 140–142, 144–147, 149
 National Supply Company (CONAB), 49, 139
 Natural capital, 12, 19, 24, 61, 64
 Natural conditions, of Cerrado, 11, 25, 61, 62, 74
 Natural vegetation, 15, 142, 143, 153, 155
 Network of agricultural production support organizations, 125
 New Forest Code, 152, 153
 Nitrogen fixation, 15, 156
 Non-agricultural employment, 84, 85, 90
 No-till farming system, 156

O

Official Development Assistance (ODA), 7
 Ouro Verde project, 49
 Overseas Economic Cooperation Fund of Japan, 27

P

Paracatu region, 24, 27, 30, 31, 35–38, 45, 53, 58
 Pasturelands, 15, 141, 143, 145, 146
 Pedro Afonso region, 24, 27, 56, 60

- Pest-resistant varieties, 49
 Photoperiodism, 5
 Pioneering crop, 5
 Plan for the Low Carbon Emission in
 Agriculture (ABC Plan), 15, 156
 Population growth, 12, 16, 55, 64, 172, 174,
 176, 179, 180
 Pork production, 104, 105, 108, 121
 Poultry processing plant, 49
 Poultry production, 105, 108
 Precision Agriculture (PA), 16, 99, 158, 159,
 179
 Private initiatives, 8, 11, 61
 Processing plant, 36, 44, 58
 Program of Irrigation Equipment Financing
 (PROFIR), 27
 Project of Deforestation Monitoring of the
 Brazilian Biomes by Satellite
 (PMDBBS), 15, 144
 Public-private partnerships, 21
- R**
 RapidEye satellite scenes, 155
 Reforestation, 15, 16, 141, 144, 146, 148, 155,
 156
 Research institutes, 46, 126
 Road networks, 139
 Rochefort, Michel, 167
 Rudorff, Bernardo, 140
 Rural development, 171
 Rural Electrification Project of Goiás State, 27
- S**
 Santa Brígida farm, 157
 Sapezal region, 41
 Seed companies, 12, 35, 55, 63
 Site-settlement model, 22
 Site-specific crop management, 158
 Smart agriculture, 158
 Soil erosion, 15, 141, 156
 Soil quality, in Cerrado, 5
 Soil sampling, 16, 159
 Sorghum, 4, 50, 117, 118, 120, 157
 Soybean meal, 44, 45, 55, 58, 62
 Soybean(s), 2–6, 8, 10, 11, 13–15, 19, 22, 25,
 27, 29–33, 39–42, 45, 46, 48–51, 53,
 55, 57, 58, 60, 62, 69, 70, 73–78, 80, 81,
 83–85, 90, 94, 97–99, 102, 105,
 107–109, 112, 114, 115, 117, 118, 120,
 121, 123, 125, 128, 132–135, 139, 140,
 143, 166, 181
 Soybean value chain, 109, 123, 134
 Spaces, urban, 182
 Spillover effect, 82
 State Agricultural Research Institute of Goiás
 (EMGOPA), 54, 55, 118
 Structural transformation, 8
 Sugarcane, 4, 11, 57, 58, 60, 62, 143, 159
 Support network for agricultural production,
 128
- T**
 Tax revenue, 48
 Technological innovations, 4, 5, 19, 37
 Tensiometers, 160
 Tocantins (TO), 2, 15, 25, 27, 29, 56–58, 60,
 61, 72, 74, 78, 80, 84, 107, 109, 121,
 122, 125, 137, 138, 147, 153, 156, 164,
 173, 176, 179, 180
 Transformation, economic, 20, 22
 Transportation costs, 10, 133, 134
 Transport infrastructure, 40, 83
- U**
 Underground drip irrigation, 160
 United States, 6, 73, 97, 125, 159
 Urban hierarchy, 167
 Urban-industrial pattern, 170
 Urbanization, 10, 12, 16, 20, 27–29, 37, 38, 55,
 56, 64, 81, 170–172, 175, 176, 178,
 179, 181, 183, 184
 Urban necklace, 182
 Urban network, in Brazil, 163, 164, 168, 169,
 177, 178, 181
 Urban-rural relationship, 168
 Urban spaces, 168, 170, 181, 182
- V**
 Value chains and clusters, 10, 11, 20, 62
- W**
 Warehouses, 11, 20, 23, 39, 58, 62, 164
 Western Bahia Technology and Research
 Center (CPTO), 49, 50
 World Trade Organization (WTO), 4