

FAPRI 2000
WORLD AGRICULTURAL OUTLOOK

January 2000

Staff Report 2-00
ISSN 1524-8593

Food and Agricultural Policy Research Institute

Iowa State University
University of Missouri-Columbia

Ames, Iowa
U.S.A.

Iowa State University

Bruce A. Babcock
John Beghin
Samarendu Mohanty
Frank Fuller
Jay Fabiosa
Phillip Kaus
Cheng Fang
Chad Hart
Karen Kovarik

University of Missouri-Columbia

Abner W. Womack
Robert E. Young II
Gregg Suhler
Pat Westhoff
Joe Trujillo
D. Scott Brown
Gary M. Adams
Brian Willott
Daniel Madison
Seth Meyer
John Kruse

Published by the Food and Agricultural Policy Research Institute, Iowa State University and the University of Missouri-Columbia, 2000.

Material in this publication is based upon work supported by the Cooperative State Research Education and Extension Service, U.S. Department of Agriculture, under Agreement No. 96-34149-2533.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.

Permission is granted to reproduce this information with appropriate attribution to the authors and the Food and Agricultural Policy Research Institute.

Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, sex, marital status, disability, or status as a U.S. Vietnam Era Veteran. Any persons having inquiries concerning this may contact the Director of Affirmative Action, 318 Beardshear Hall, 515-294-7612.

Contents

Figures	iv
Tables	vi
Abbreviations and Acronyms	xiii
Executive Summary	1
Overview of the 2000 World Outlook	3
Baseline Assumptions and Price Projections	15
Macroeconomic Assumptions	17
Policy Assumptions	25
Crops and Oilseed Aggregates	39
Wheat	47
Rice	73
Coarse Grains	91
Oilseed and Products	139
Soybean and Soybean Products	141
Rapeseed and Rapeseed Products	169
Sunflower Seed and Products	183
Palm Oil Complex	198
Peanuts	206
Cotton	215
Sugar	233
Meat	257
Meat	259
Beef and Veal	262
Pork	266
Poultry	270
Dairy Products	311
U.S. Agricultural Exports	339

Figures

Developing Country Real GDP Growth Rates	18
Far East Asian Real GDP Growth	18
Exchange Rate Projections	19
Population Growth Rates	19
World Crop Area	42
World Grain Production, Consumption, and Stock	42
World Wheat Area Harvested, Production, and Consumption	52
World Wheat Stock-to-Use Ratio Versus Price	52
Wheat Net Exports by Major Competitors	53
Wheat Net Imports by Major Regions	53
Asian Wheat Imports	54
Wheat Trade by Transition Economies	54
U.S. Wheat Trade and Market Share	55
EU Wheat Production, Consumption, and Net Trade	55
World Rice Area Harvested	78
World Rice Stock-to-Use Ratio Versus Price	78
Rice Net Imports by Major Countries	79
Rice Net Exports by Major Countries	79
World Coarse Grain Area Harvested	98
World Corn Stock-to-Use Ratio Versus Price	98
Corn Net Imports by Major Regions	99
Corn Net Exports by Competitors	99
U.S. Corn Trade and Market Share	100
Barley Net Exports by Major Countries	100
Sorghum Net Imports	101
Sorghum Net Exports	101
World Soybean Area Harvested	143
Soybean Stock-to-Use Ratio	143
Major Soybean Exporters	144
Major Soybean Importers	144
World Soybean Production to Crush Ratios	145
China Soybean Production, Consumption, and Net Trade	145
Major Soybean Meal Exporters	147
Major Soybean Meal Importers	147
Chinese Oilseeds Meal Consumption	148
EU Oilseed Meal Consumption	148
World Soybean Oil Trade and Price	150
World Soybean Oil Per Capita Consumption in Selected Countries	150
World Rapeseed Area Harvested	172
Rapeseed Yield	172
Rapeseed Trade	173

Rapeseed Stock-to-Use Ratio Versus Price	173
Rapeseed Meal Trade	174
Rape Meal Use	174
Rapeseed Oil Trade and Price	175
Rapeseed Oil Per Capita Consumption	175
World Sunflower Area Harvested	186
Sunflower Yield	186
Sunflower Trade	187
Sunflower Stock-to-Use Ratio Versus Price	187
Sunflower Meal Exports	188
Sunflower Meal Imports	188
Sunflower Oil Trade	189
Sunflower Oil Per Capita Consumption	189
Palm Oil Trade	200
Palm Oil Per Capita Consumption	200
World Peanut Area Harvested	208
World Peanut Trade	208
Cotton Net Trade	219
World Cotton Prices	219
Cotton Net Exports	220
World Cotton Consumption	220
World Sugar Stock-to-Use Ratio Versus Price	238
World Sugar Cane Area Harvested	238
World Sugar Production and Consumption	239
Sugar Net Exports	239
Asian Sugar Net Imports	240
Non-Asian Sugar Net Imports	240
U.S. Livestock Prices	260
World Meat Production and Trade	260
Japanese Meat Production and Imports	261
Russian Meat Production and Imports	261
Major Beef Importing Countries	264
EU Beef Supply and Utilization	264
Eastern Europe Beef Production and Consumption	265
Live Cattle and Beef Export	265
Major Pork Importing Countries	268
Major Pork Exporting Countries	268
Canadian Pork and Swine Export	269
China Pork Supply and Utilization	269
Major Broiler Importing Countries	272
Major Broiler Exporting Countries	272
Brazilian Broiler Supply and Utilization	273
Mexican Broiler Supply and Utilization	273

FOB Northern European Dairy Product Prices	314
Annual Growth in Milk Production and Total World Output	314
EU Dairy Product and Intervention Prices	315
Dairy Product Output for Modeled Countries	315
Butter Net Exports for Selected Countries	317
Cheese Net Exports for Selected Countries	317
NFD Net Exports for Selected Countries	319
WMP Net Exports for Selected Countries	319
Quantity of U.S. Agricultural Exports	343
Value of U.S. Agricultural Exports	343
Value of U.S. Animal and Grain Exports	344
Feed Equivalents of U.S. Meat Exports	344

Tables

Real GDP Projections	20
GDP Deflator Projections (Expressed in Local Currency)	21
Exchange Rate Projections	22
Population Projections	23
Agricultural Policy Assumptions for Crops	26
Other Assumptions for Crops	28
Agricultural Policy Assumptions for Livestock and Dairy Products	29
Commodity Price Projections	34
Policy Prices and World Prices by Commodity	36
World Major Grains Supply and Utilization	43
World Oilseeds Supply and Utilization	44
World Oil Meals Supply and Utilization	45
World Vegetable Oil Supply and Utilization	46
Wheat Trade	51
World Wheat Supply and Utilization	56
U.S. Wheat Supply and Utilization	56
Argentine Wheat Supply and Utilization	57
Australian Wheat Supply and Utilization	57
Canadian Wheat Supply and Utilization	58
Eastern European Wheat Supply and Utilization	58
European Union Wheat Supply and Utilization	59
Ukrainian Wheat Supply and Utilization	59
Japanese Wheat Supply and Utilization	60
Russian Wheat Supply and Utilization	60
Other Former Soviet Union Supply and Utilization	61
Other Western European Wheat Supply and Utilization	61
Chinese Wheat Supply and Utilization	62
High-Income East Asian Wheat Supply and Utilization	62
Indian Wheat Supply and Utilization	63
Pakistani Wheat Supply and Utilization	63

Other Asian Wheat Supply and Utilization	64
Brazilian Wheat Supply and Utilization	64
Mexican Wheat Supply and Utilization	65
Other Latin American Wheat Supply and Utilization	65
Algerian Wheat Supply and Utilization	66
Egyptian Wheat Supply and Utilization	66
Iranian Wheat Supply and Utilization	67
Moroccan Wheat Supply and Utilization	67
Tunisian Wheat Supply and Utilization	68
Other African/Middle Eastern Wheat Supply and Utilization	68
Czech Republic Wheat Supply and Utilization	69
Hungarian Wheat Supply and Utilization	69
Polish Wheat Supply and Utilization	70
Other Eastern European Wheat Supply and Utilization	70
Rest-of-World Wheat Supply and Utilization	71
Rice Trade	77
World Rice Supply and Utilization	80
U.S. Rice Supply and Utilization	80
Argentine Rice Supply and Utilization	81
Brazilian Rice Supply and Utilization	81
Chinese Rice Supply and Utilization	82
European Union Rice Supply and Utilization	82
Indian Rice Supply and Utilization	83
Indonesian Rice Supply and Utilization	83
Japanese Rice Supply and Utilization	84
Myanmarian Rice Supply and Utilization	84
Pakistani Rice Supply and Utilization	85
Philippine Rice Supply and Utilization	85
Saudi Arabian Rice Supply and Utilization	86
South Korean Rice Supply and Utilization	86
Taiwanese Rice Supply and Utilization	87
Thai Rice Supply and Utilization	87
Uruguayan Rice Supply and Utilization	88
Vietnamese Rice Supply and Utilization	88
Rest-of-World Rice Supply and Utilization	89
Corn Trade	95
Barley Trade	96
Sorghum Trade	97
World Corn Supply and Utilization	102
World Barley Supply and Utilization	102
World Sorghum Supply and Utilization	103
U.S. Coarse Grain Supply and Utilization	104
Argentine Coarse Grain Supply and Utilization	106
Australian Coarse Grain Supply and Utilization	107
Canadian Coarse Grain Supply and Utilization	108

Chinese Coarse Grain Supply and Utilization	109
Eastern European Coarse Grain Supply and Utilization	110
European Union Coarse Grain Supply and Utilization	111
South African Coarse Grain Supply and Utilization	112
Ukrainian Coarse Grain Supply and Utilization	113
Israeli Coarse Grain Supply and Utilization	114
Japanese Coarse Grain Supply and Utilization	115
Russian Coarse Grain Supply and Utilization	116
Other Former Soviet Union Coarse Grain Supply and Utilization	117
Algerian Coarse Grain Supply and Utilization	118
Egyptian Coarse Grain Supply and Utilization	119
Nigerian Coarse Grain Supply and Utilization	119
Other African Coarse Grain Supply and Utilization	120
Saudi Arabian Coarse Grain Supply and Utilization.....	121
Other Middle Eastern Coarse Grain Supply and Utilization	122
Brazilian Coarse Grain Supply and Utilization	123
Mexican Coarse Grain Supply and Utilization	124
Other Latin American Coarse Grain Supply and Utilization	125
Indian Coarse Grain Supply and Utilization	126
Indonesian Coarse Grain Supply and Utilization	127
Malaysian Coarse Grain Supply and Utilization	128
Philippine Coarse Grain Supply and Utilization	128
Pakistani Coarse Grain Supply and Utilization	129
South Korean Coarse Grain Supply and Utilization	130
Taiwanese Coarse Grain Supply and Utilization	130
Thai Coarse Grain Supply and Utilization	131
Vietnamese Coarse Grain Supply and Utilization	131
Other Asian Coarse Grain Supply and Utilization	132
Czech Republic Coarse Grain Supply and Utilization	133
Hungarian Coarse Grain Supply and Utilization	134
Polish Coarse Grain Supply and Utilization	135
Other Eastern European Coarse Grain Supply and Utilization	136
Rest-of-World Coarse Grain Supply and Utilization.....	137
Soybean Trade	142
Soybean Meal Trade	146
Soybean Oil Trade	149
World Soybean Sector Supply and Utilization	151
U.S. Soybean Sector Supply and Utilization	152
Argentine Soybean Sector Supply and Utilization	153
Brazilian Soybean Sector Supply and Utilization	154
Canadian Soybean Sector Supply and Utilization	155
Chinese Soybean Sector Supply and Utilization	156
Paraguayan Soybean Sector Supply and Utilization	157
Eastern European Soybean Sector Supply and Utilization	158
European Union Soybean Sector Supply and Utilization	159
Russian Soybean Sector Supply and Utilization	160

Ukrainian Soybean Sector Supply and Utilization	161
Other Former Soviet Union Soybean Sector Supply and Utilization	162
Japanese Soybean Sector Supply and Utilization	163
Indian Soybean Sector Supply and Utilization	164
Mexican Soybean Sector Supply and Utilization	165
South Korean Soybean Sector Supply and Utilization	166
Taiwanese Soybean Sector Supply and Utilization	167
Rest-of-World Soybean Sector Supply and Utilization	168
Rapeseed Trade	170
Rapeseed Meal Trade	170
Rapeseed Oil Trade	171
World Rapeseed Sector Supply and Utilization	176
Canadian Canola Sector Supply and Utilization	177
Chinese Rapeseed Sector Supply and Utilization	178
European Union Rapeseed Sector Supply and Utilization	179
Indian Rapeseed Sector Supply and Utilization	180
Japanese Rapeseed Sector Supply and Utilization	181
Rest-of-World Rapeseed Sector Supply and Utilization	182
Sunflower Seed Trade	184
Sunflower Meal Trade	184
Sunflower Oil Trade	185
World Sunflower Supply and Utilization	190
Argentine Sunflower Supply and Utilization	191
Chinese Sunflower Supply and Utilization	192
European Union Sunflower Supply and Utilization	193
Russian Sunflower Supply and Utilization	194
Ukrainian Sunflower Supply and Utilization	195
Other Former Soviet Union Sunflower Supply and Utilization	196
Rest-of-World Sunflower Supply and Utilization	197
Palm Trade	199
World Palm Oil Supply and Utilization	201
Chinese Palm Oil Supply and Utilization	202
European Union Palm Oil Supply and Utilization	202
Indonesian Palm Oil Supply and Utilization	203
Malaysian Palm Oil Supply and Utilization	204
Rest-of-World Palm Oil Supply and Utilization	205
Peanut Trade	207
World Peanut Supply and Utilization	209
U.S. Peanut Supply and Utilization	210
European Union Peanut Supply and Utilization	211
Chinese Peanut Supply and Utilization	212
Indian Peanut Supply and Utilization	213
Rest-of-World Peanut Supply and Utilization	214
All Cotton Trade	218
World Cotton Supply and Utilization	221
U.S. Cotton Supply and Utilization	221

African Cotton Supply and Utilization	222
Argentine Cotton Supply and Utilization	222
Australian Cotton Supply and Utilization	223
Indian Cotton Supply and Utilization	223
Other Former Soviet Union Cotton Supply and Utilization	224
Other Latin American Cotton Supply and Utilization	224
Other Middle Eastern Cotton Supply and Utilization	225
Pakistani Cotton Supply and Utilization	225
Turkish Cotton Supply and Utilization	226
Uzbekistani Cotton Supply and Utilization	226
Brazilian Cotton Supply and Utilization	227
Canadian Cotton Supply and Utilization	227
Chinese Cotton Supply and Utilization	228
Eastern European Cotton Supply and Utilization	228
European Union Cotton Supply and Utilization	229
Japanese Cotton Supply and Utilization	229
Mexican Cotton Supply and Utilization	230
Other Asian Cotton Supply and Utilization	230
Other Western European Cotton Supply and Utilization	231
Russian Cotton Supply and Utilization	231
South Korean Cotton Supply and Utilization	232
Taiwanese Cotton Supply and Utilization	232
Sugar Trade	237
World Sugar Supply and Utilization	241
U.S. Sugar Supply and Utilization	242
Algerian Sugar Supply and Utilization	243
Argentine Sugar Supply and Utilization	243
Australian Sugar Supply and Utilization	244
Brazilian Sugar Supply and Utilization	244
Canadian Sugar Supply and Utilization	245
Chinese Sugar Supply and Utilization	245
Columbian Sugar Supply and Utilization	246
Cuban Sugar Supply and Utilization	246
Eastern European Sugar Supply and Utilization	247
Egyptian Sugar Supply and Utilization	247
European Union Sugar Supply and Utilization	248
Former Soviet Union Sugar Supply and Utilization	248
Indian Sugar Supply and Utilization	249
Indonesian Sugar Supply and Utilization	249
Iranian Sugar Supply and Utilization	250
Japanese Sugar Supply and Utilization	250
Malaysian Sugar Supply and Utilization	251
Mexican Sugar Supply and Utilization	251
Moroccan Sugar Supply and Utilization	252
Pakistani Sugar Supply and Utilization	252
Peruvian Sugar Supply and Utilization	253

Philippine Sugar Supply and Utilization	253
South African Sugar Supply and Utilization	254
South Korean Sugar Supply and Utilization	254
Thai Sugar Supply and Utilization	255
Turkish Sugar Supply and Utilization	255
Venezuelan Sugar Supply and Utilization	256
Rest-of-World Sugar Supply and Utilization	256
Beef and Veal Trade	263
Pork Trade	267
Broiler Meat Trade	271
U.S. Meat Supply and Utilization	274
Argentine Meat Supply and Utilization	275
Australian Meat Supply and Utilization	276
Brazilian Meat Supply and Utilization	277
Bulgarian Meat Supply and Utilization	278
Canadian Meat Supply and Utilization	279
China - Mainland Meat and Egg Supply and Utilization FAPRI Adjusted Data	280
China - Mainland Meat and Egg Supply and Utilization Official Data	282
China - Hong Kong Meat Supply and Utilization	283
Czech Republic Meat Supply and Utilization	284
Estonian Meat Supply and Utilization	285
European Union Meat Supply and Utilization	286
Hungarian Meat Supply and Utilization	287
Indonesian Meat Supply and Utilization	288
Japanese Meat Supply and Utilization	289
Latvian Meat Supply and Utilization	290
Lithuanian Meat Supply and Utilization	291
Mexican Meat Supply and Utilization	292
New Zealand Meat Supply and Utilization	293
Other Eastern European Meat Supply and Utilization	294
Other Former Soviet Union Meat Supply and Utilization	295
Philippine Meat Supply and Utilization	296
Polish Meat Supply and Utilization	297
Romanian Meat Supply and Utilization	298
Russian Meat Supply and Utilization	299
Slovakian Meat Supply and Utilization	300
Slovenian Meat Supply and Utilization	301
South Korean Meat Supply and Utilization	302
Taiwanese Meat Supply and Utilization	303
Thai Meat Supply and Utilization	304
Ukrainian Meat Supply and Utilization	305
Per Capita Meat Consumption of Selected Countries	306
Butter Trade	316
Cheese Trade	316
Nonfat Dry Milk Trade	318

Whole Milk Powder Trade	318
U.S. Dairy Supply and Utilization	320
Argentine Dairy Supply and Utilization	321
Australian Dairy Supply and Utilization	322
Brazilian Dairy Supply and Utilization	323
Canadian Dairy Supply and Utilization	324
Czech Republic Dairy Supply and Utilization	325
European Union Dairy Supply and Utilization	326
Hungarian Dairy Supply and Utilization	327
Indian Dairy Supply and Utilization	328
Japanese Dairy Supply and Utilization	329
Mexican Dairy Supply and Utilization	330
New Zealand Dairy Supply and Utilization	331
Polish Dairy Supply and Utilization	332
Romanian Dairy Supply and Utilization	333
Russian Dairy Supply and Utilization	334
Swiss Dairy Supply and Utilization	335
Ukrainian Dairy Supply and Utilization	336
Per Capita Dairy Consumption of Selected Countries	337
Quantity of U.S. Agricultural Exports, Fiscal Year	342
Value of U.S. Agricultural Exports, Fiscal Year	342

Abbreviations and Acronyms

This list of abbreviations and acronyms used in the *Agricultural Outlook* is provided for the convenience of our readers. Abbreviations and acronyms typically are not spelled out in the text.

BSE	bovine spongiform encephalopathy
CAP	Common Agricultural Policy
CCC	Commodity Credit Corporation
CEECs	Central and Eastern European Countries
CIF	Cost, Insurance, and Freight
CPI	Consumer Price Index
CRP	Conservation Reserve Program
CSF	classical swine fever
cwt	hundredweight
DEIP	Dairy Export Incentive Program
EEP	Export Enhancement Program
EU	European Union
FAIR Act	Federal Agriculture Improvement and Reform Act of 1996
FAPRI	Food and Agricultural Policy Research Institute
FMD	foot-and-mouth disease
FOB	freight on board
FOR	Farmer-Owned Reserve
FSU	Former Soviet Union
FY	fiscal year
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
ha	hectare
HFCS	high-fructose corn syrup
kg	kilogram
MERCOSUR	The Common Market of the Southern Cone of South America
mha	million hectares
mmt	million metric tons
mt	metric ton
NAFTA	North American Free Trade Agreement
NFD	nonfat dry milk
NIS	Newly Independent States
rBST	recombinant bovine somatotropin
ROW	Rest of World
tmt	thousand metric tons
TRQ	tariff rate quota
WMP	whole milk powder
WTO	World Trade Organization
UR	Uruguay Round
URAA	Uruguay Round Agreement on Agriculture

