Appendix 1—Food Security Model: Definition and Methodology

The Food Security Assessment model used in this report was developed by USDA's Economic Research Service for use in projecting food consumption and access and food gaps (previously called food needs) in low-income countries through 2012. In 2002, the number of countries studied increased from 67 to 70, as Kazakhstan, Turkmenistan, and Uzbekistan, from the NIS region were added. The reference to food is divided into three groups: grains, root crops, and a category called "other," which includes all other commodities consumed, thus covering 100 percent of food consumption. All of these commodities are expressed in grain equivalent.

Food security of a country is evaluated based on the gap between projected domestic food consumption (produced domestically plus imported commercially minus nonfood use) and a consumption requirement. In a departure from last year's approach, food aid, if received in the past, is expected to be available during the projection period, and therefore it is included in the projection of food availability. It should be noted that while projection results will provide a baseline for the food security situation of the countries, results depend on assumptions and specifications of the model. Since the model is based on historical data, it implicitly assumes that the historical trend in key variables will continue in the future.

Food gaps are projected using two consumption criteria:

1) *Status quo target*, where the objective is to maintain average per capita consumption of the recent past. The most recent 3-year average (1999-2001) is used for the per capita consumption target to eliminate short-term fluctuations.

2) *Nutrition-based target*, where the objective is to maintain the daily caloric intake standards of about 2,100 calories per capita per day—depending on the region—recommended by the UN's Food and Agriculture Organization (FAO). The caloric requirements (based on total share of grains, root crops, and "other") used in this assessment are those necessary to sustain life with minimum food-gathering activities.

The status quo measure embodies a "safety-net" criterion by providing food consumption stability at recently achieved levels. The nutrition-based target assists in comparisons of relative well-being. Comparing the two consumption measures either for countries or regions provides an indicator of the need depending on whether the objectives are to achieve consumption stability and/or meet a nutritional standard. Large nutrition-based needs relative to status quo needs, for example, mean additional food must be provided if improved nutrition levels are the main objective. In cases where nutrition-based requirements are below status quo consumption needs, food availability could decline without risking nutritional adequacy, on average. Both methods, however, fail to address inequalities of food distribution within a country.

Structural Framework for Projecting Food Consumption in the Aggregate and by Income Group

Projection of food availability—The simulation framework used for projecting aggregate food availability is based on partial equilibrium recursive models of 70 lower income countries. The country models are synthetic, meaning that the parameters that are used are either cross-country estimates or are estimated by other studies. Each country model includes three commodity groups: grains, root crops and "other." The production side of the grain and root crops are divided into yield and area response. Crop area is a function of 1-year lag return (real price times yield), while yield responds to input use. Commercial imports are assumed to be a function of domestic price, world commodity price, and foreign exchange availability. Food aid received by countries is assumed constant at the base level during the projection period. Foreign exchange availability is a key determinant of commercial food imports and is the sum of the value of export earnings and net flow of credit. Foreign exchange availability is assumed to be equal to foreign exchange use, meaning that foreign exchange reserve is assumed constant during the projection period. Countries are assumed to be price takers in the international market, meaning that the world prices are exogenous in the model. However, producer prices are linked to the international market. The projection of consumption for the "other" commodities is simply based on a trend that follows the projected growth in supply of the food crops (grains plus root crops). Although this is a very simplistic approach, it represents an improvement from

the previous assessments where the contribution to the diet of commodities, such as meat and dairy products, was overlooked. The plan is to enhance this aspect of the model in the future.

For the commodity group grains and root crops (*c*), food consumption (*FC*) is defined as domestic supply (*DS*) minus nonfood use (*NF*). *n* is country index and *t* is time index.

$$FC_{cnt} = DS_{cnt} - NF_{cnt} \quad (1)$$

Nonfood use is the sum of seed use (*SD*), feed use (*FD*), exports (*EX*), and other uses (*OU*).

$$NF_{cnt} = SD_{cnt} + FD_{cnt} + EX_{cnt} + OU_{cnt} \quad (2)$$

Domestic supply of a commodity group is the sum of domestic production (*PR*) plus commercial imports (*CI*), food aid (*FA*), and changes in stocks (*CSTK*).

$$DS_{cnt} = PR_{cnt} + CI_{cnt} + CSTK_{cnt} + FA_{cnt} \quad (3)$$

Production is generally determined by the area and yield response functions:

$$PR_{cnt} = AR_{cnt} * YL_{cnt} \quad (4)$$

$$YL_{cnt} = f(LB_{cnt}, FR_{cnt}, K_{cnt}, T_{cnt}) \quad (5)$$

$$RPY_{cnt} = YL_{cnt} * DP_{cnt} \quad (6)$$

$$RNPY_{cnt} = NYL_{cnt} * NDP_{cnt} \quad (7)$$

$$AR_{cnt} = f(AR_{cnt-1}, RPY_{cnt-1}, RNPY_{cnt-1}, Z_{cnt}) \quad (8)$$

where *AR* is area, *YL* is yield, *LB* is rural labor, *FR* is fertilizer use, *K* is indicator of capital use, *T* is the indicator of technology change, *DP* is real domestic price, *RPY* is yield times real price, *NDP* is real domestic substitute price, *NYL* is yield of substitute commodity, *RNPY* is yield of substitute commodity times substitute price, and *Z* is exogenous policies.

The commercial import demand function is defined as:

$$CI_{cnt} = f(WPR_{ct}, NWPR_{ct}, FEX_{nt}, PR_{cnt}, M_{nt}) \quad (9)$$

where *WPR* is real world food price, *NWPR* is real world substitute price, *FEX* is real foreign exchange availability, and *M* is import restriction policies.

The real domestic price is defined as:

$$DP_{cnt} = f(DP_{cnt-1}, DS_{cnt}, NDS_{cnt}, GD_{nt}, EXR_{nt}) \quad (10)$$

where *NDS* is supply of substitute commodity, GD is real income, and *EXR* is real exchange rate.

Projections of food consumption by income group— Inadequate economic access is the most important cause of chronic undernutrition among developing countries and is related to the level of income. Estimates of food gaps at the aggregate or national level fail to take into account the distribution of food consumption among different income groups. Lack of consumption distribution data for the countries is the key factor preventing estimation of food consumption by income group. An attempt was made to fill this information gap by using an indirect method of projecting calorie consumption by different income groups based on income distribution data.[1] It should be noted that this approach ignores the consumption substitution of different food groups by income class. The procedure uses the concept of the income/consumption relationship and allocates the total projected amount of available food among different income groups in each country (income distributions are assumed constant during the projection period).

Assuming a declining consumption and income relationship (semi log functional form):

$$C = a + b \ln Y \quad (11)$$

$$C = C_o/P \quad (12)$$

$$P = P_1 + \ldots\ldots + P_i \quad (13)$$

$$Y = Y_o/P \quad (14)$$

$$i = 1 \text{ to } 5$$

where *C* and *Y* are known average per capita food consumption (all commodities in grain equivalent) and per capita income (all quintiles), C_o is total food consumption, *P* is the total population, *i* is income quintile, *a* is the intercept, *b* is the consumption income propensity, and *b/C* is consumption income elasticity (point estimate elasticity is calculated for individual countries). To estimate per capita consumption by income group, the parameter of *b* was estimated based on cross-country (67 low-income countries) data for per capita calorie consumption and income. The parameter *a* is estimated for each country based on the known data for average per capita calorie consumption and per capita income.

[1] The method is similar to that used by Shlomo Reutlinger and Marcelo Selowsky in "Malnutrition and Poverty," World Bank, 1978.

Historical Data

Historical supply and use data for 1980-2001 for most variables are from a USDA database. Data for grain production in 2002 for most countries are based on a USDA database as of October 2002. Food aid data are from the UN's Food and Agriculture Organization (FAO), and financial data are from the International Monetary Fund and World Bank. Historical nonfood-use data, including seed, waste, processing use, and other use, are estimated from the FAO *Food Balance* series. The base year data used for projections are the average for 1999-2001, except export earnings that are 1998-2000.

Endogenous variables:

Production, area, yield, commercial import, domestic producer price, and food consumption.

Exogenous variables:

Population—data are medium UN population projections as of 2000.

World price—data are USDA/baseline projections.

Stocks—USDA data, assumed constant during the projection period.

Seed use—USDA data, projections are based on area projections using constant base seed/area ratio.

Food exports—USDA data, projections are either based on the population growth rate or extrapolation of historical trends.

Inputs—fertilizer and capital projections are, in general, an extrapolation of historical growth data from FAO.

Agricultural labor—projections are based on UN population projections, accounting for urbanization growth.

Food aid—historical data from FAO, 2001 data from World Food Program (WFP).

Gross Domestic Product—World Bank data.

Merchandise and service imports and exports—World Bank data.

Net foreign credit—is assumed constant during the projection period.

Value of exports—projections are based on World Bank (*Global Economic Prospects and the Developing Countries*, various issues), IMF (*World Economic Outlook*, various issues), or an extrapolation of historical growth.

Export deflator or terms of trade—World Bank (*Commodity Markets—Projection of Inflation Indices for Developed Countries*).

Income—projected based on World Bank report (*Global Economic Prospects and the Developing Countries*, various issues) or extrapolation of historical growth.

Income distribution—World Bank data. Income distributions are assumed constant during the projection period.

(***Shahla Shapouri***)

Appendix table-2a—List of countries and their food gaps in 2002

	2002 food gaps				2002 food gaps		
	Status quo	Nutrition	Distribution		Status quo	Nutrition	Distribution
	1,000 tons				*1,000 tons*		
Angola	130	277	504	Algeria	0	0	0
Benin	96	0	0	Egypt	0	0	0
Burkina Faso	0	0	165	Morocco	0	0	0
Burundi	60	381	412	Tunisia	0	0	0
Cameroon	0	0	148	**North Africa**	**0**	**0**	**0**
Cape Verde	9	0	0				
Central African Republic	16	60	191	Afghanistan	0	1,085	1,369
Chad	0	135	287	Bangladesh	0	0	264
Congo, Dem. Rep.	406	3,469	3,768	India	0	0	6,419
Côte d'Ivoire	0	0	0	Indonesia	0	0	5
Eritrea	80	372	394	Korea, Dem. Rep.	9	0	265
Ethiopia	2,023	4,304	4,753	Nepal	265	0	109
Gambia	54	0	4	Pakistan	0	0	135
Ghana	0	0	0	Philippines	0	0	352
Guinea	73	0	90	Sri Lanka	0	0	44
Guinea-Bissau	0	0	3	Vietnam	0	0	90
Kenya	0	0	584	**Asia**	**273**	**1,085**	**9,051**
Lesotho	0	44	86				
Liberia	81	45	96	Bolivia	0	0	66
Madagascar	243	374	574	Colombia	0	0	301
Malawi	229	357	404	Dominican Republic	0	0	57
Mali	0	0	126	Ecuador	0	0	126
Mauritania	111	0	3	El Salvador	0	0	56
Mozambique	0	66	409	Guatemala	0	215	455
Niger	0	0	80	Haiti	26	181	359
Nigeria	0	0	0	Honduras	108	218	315
Rwanda	80	0	23	Jamaica	0	0	0
Senegal	64	0	48	Nicaragua	0	203	265
Sierra Leone	42	248	367	Peru	0	0	230
Somalia	282	1,022	1,070	**Latin America and**			
Sudan	0	0	80	**the Caribbean**	**134**	**817**	**2,230**
Swaziland	7	0	4				
Tanzania	0	1,090	1,357	Armenia	0	0	12
Togo	52	0	62	Azerbaijan	0	0	0
Uganda	441	0	40	Georgia	0	20	87
Zambia	498	1,267	1,351	Kazakhstan	0	0	0
Zimbabwe	1,360	2,217	2,299	Kyrgyzstan	0	0	0
Sub-Saharan Africa	**6,437**	**15,726**	**19,782**	Tajikistan	0	91	137
				Turkmenistan	0	0	16
				Uzbekistan	0	0	0
				New Independent States	**0**	**110**	**252**
				Total	**6,845**	**17,738**	**31,315**

Appendix table-2b—List of countries and their food gaps in 2012

	2012 food gaps				2012 food gaps		
	Status quo	Nutrition	Distribution		Status quo	Nutrition	Distribution
	1,000 tons				*1,000 tons*		
Angola	554	753	951	Algeria	0	0	0
Benin	72	0	0	Egypt	819	0	0
Burkina Faso	0	0	278	Morocco	0	0	0
Burundi	287	721	757	Tunisia	0	0	0
Cameroon	0	0	38	**North Africa**	**819**	**0**	**0**
Cape Verde	25	0	0				
Central African Republic	54	107	252	Afghanistan	0	2,262	2,572
Chad	0	13	268	Bangladesh	0	0	764
Congo, Dem. Rep.	2,195	6,476	6,844	India	0	0	0
Côte d'Ivoire	0	0	0	Indonesia	0	0	0
Eritrea	165	556	584	Korea, Dem. Rep.	69	0	325
Ethiopia	0	547	2,054	Nepal	559	0	216
Gambia	0	0	0	Pakistan	0	0	0
Ghana	0	0	0	Philippines	0	0	0
Guinea	51	0	91	Sri Lanka	0	0	19
Guinea-Bissau	0	0	7	Vietnam	0	0	0
Kenya	0	0	626	**Asia**	**628**	**2,262**	**3,896**
Lesotho	0	0	20				
Liberia	442	386	419	Bolivia	0	0	31
Madagascar	396	568	810	Colombia	0	0	0
Malawi	0	0	0	Dominican Rep.	0	0	0
Mali	0	0	204	Ecuador	0	0	0
Mauritania	244	0	25	El Salvador	0	0	0
Mozambique	0	0	135	Guatemala	0	0	0
Niger	947	141	549	Haiti	171	351	514
Nigeria	2,088	0	0	Honduras	0	0	10
Rwanda	249	0	90	Jamaica	0	0	0
Senegal	134	0	79	Nicaragua	0	241	325
Sierra Leone	313	595	723	Peru	0	0	0
Somalia	343	1,425	1,497	**Latin America and**			
Sudan	0	0	211	**the Caribbean**	**171**	**592**	**880**
Swaziland	0	0	0				
Tanzania	0	898	1,355	Armenia	0	0	12
Togo	0	0	40	Azerbaijan	0	0	0
Uganda	1,152	0	151	Georgia	0	0	0
Zambia	0	882	1,028	Kazakhstan	0	0	0
Zimbabwe	0	0	363	Kyrgyzstan	0	0	0
Sub-Saharan Africa	**9,711**	**14,067**	**20,445**	Tajikistan	0	6	84
				Turkmenistan	0	0	0
				Uzbekistan	0	0	0
				New Independent States	**0**	**6**	**96**
				Total	**11,328**	**16,928**	**25,318**

Appendix 3—Country indicators

Region and country	Population 2002	Population growth rate	Grain production		Root production growth 1980-2001	Projected annual growth in supply 2002-2012	Macroeconomic indicators					
			Growth 1980-2001	Coefficient of variation 1980-2001			Per capita GNI 2000	Per capita GDP growth 2000	GDP growth 2000	Export earnings growth 1999	Official development assistance as a share of GNI 1999	External debt (present value) as a share of GNI 1999
	1,000		*Percent*				*$ U.S.*		*Percent*			
North Africa:												
Algeria	31,376	1.8	-0.6	46.9	4.2	1.7	1,590	0.9	2.4	7.4	0.3	64.0
Egypt	70,194	1.7	4.8	6.3	2.7	1.2	1,490	3.1	5.1	10.3	1.3	27.0
Morocco	30,962	1.8	0.1	48.8	4.3	1.8	1,180	-0.8	0.9	4.4	1.3	51.0
Tunisia	9,677	1.1	2.2	44.8	4.9	2.1	2,090	3.5	4.7	6.6	1.2	59.0
Central Africa:												
Cameroon	15,527	2.2	1.9	10.4	2.9	3.1	570	2.0	4.2	-4.9	4.6	76.0
Central African Rep.	3,841	1.7	1.7	14.3	0.3	1.4	290	1.1	2.5	--	8.0	54.0
Congo, Dem. Rep.	54,467	3.4	3.1	9.5	0.9	2.0	100	--	--	--	--	244.0
West Africa:												
Benin	6,634	2.8	4.9	9.5	6.5	2.7	380	3.1	5.8	8.1	11.1	40.0
Burkina Faso	12,249	3.1	4.6	14.1	-4.2	3.5	230	-0.4	2.2	-10.5	15.5	25.0
Cape Verde	446	2.2	9.2	51.6	0.4	1.0	1,330	3.6	6.8	29.2	17.2	--
Chad	8,385	3.1	3.7	18.1	1.3	3.7	200	-2.1	0.6	13.4	9.4	43.0
Côte d'Ivoire	16,689	2.1	2.9	6.3	2.1	2.3	660	-4.9	-2.3	-1.9	4.1	117.0
Gambia	1,366	2.4	2.9	21.3	0.5	3.0	330	2.3	5.6	9.9	11.8	--
Ghana	20,176	2.2	6.2	16.0	8.2	2.8	350	1.3	3.7	-2.3	12.1	66.0
Guinea	8,399	1.5	3.6	6.0	3.7	2.3	450	-0.3	2.0	3.0	5.2	72.0
Guinea-Bissau	1,258	2.4	3.3	18.7	4.1	2.5	180	5.2	7.5	33.4	39.6	--
Liberia	3,254	5.7	-4.6	37.0	0.6	1.0	--	--	--	--	--	--
Mali	12,031	2.8	4.4	11.8	5.7	2.8	240	2.1	4.5	-3.6	15.9	57.0
Mauritania	2,827	3.0	8.4	32.2	-0.2	1.8	370	1.7	5.2	2.5	23.3	169.0
Niger	11,647	3.7	3.0	14.9	-2.0	1.6	180	-3.2	0.1	0.5	11.7	55.0
Nigeria	119,959	2.6	5.5	16.4	8.9	2.2	260	1.3	3.8	-1.6	0.5	90.0
Senegal	9,905	2.5	1.2	18.6	4.1	2.0	500	2.9	5.6	10.5	9.9	53.0
Sierra Leone	4,823	4.6	-3.6	9.3	5.4	-0.7	130	4.9	7.0	--	29.6	136.0
Togo	4,764	2.6	4.9	15.0	2.6	2.8	300	-3.7	-0.7	0.4	5.8	82.0
East Africa:												
Burundi	6,749	3.0	-2.6	15.8	1.5	1.9	110	-1.6	0.3	31.7	13.8	96.0
Eritrea	3,981	4.3	2.1	46.4	0.3	1.7	170	-10.6	-8.2	45.4	25.3	19.0
Ethiopia	67,624	2.4	4.0	15.5	2.2	4.2	100	3.0	5.4	23.6	10.9	55.0
Kenya	31,861	1.9	0.1	14.2	2.8	2.0	360	-2.5	-0.2	8.6	5.0	49.0
Rwanda	7,936	2.1	-2.3	14.2	-0.3	1.6	230	3.1	5.6	15.6	18.1	36.0
Somalia	9,550	4.3	-3.3	36.6	2.7	3.4	--	--	--	--	--	--
Sudan	32,560	2.3	3.0	32.4	-3.1	1.8	320	6.4	8.3	--	2.3	--
Tanzania	36,786	2.3	1.8	12.8	-0.3	2.7	280	2.7	5.1	18.4	11.6	53.0
Uganda	24,834	3.2	1.9	9.6	2.1	2.9	310	0.8	3.5	-0.7	13.3	27.0

See footnotes at end of table.

Continued--

Appendix 3—Country indicators--Continued

Region and country	Population 2002	Population growth rate	Grain production: Growth 1980-2001	Grain production: Coefficient of variation 1980-2001	Root production growth 1980-2001	Projected annual growth in supply 2002-2012	Macroeconomic indicators: Per capita GNI 2000	Per capita GDP growth 2000	GDP growth 2000	Export earnings growth 1999	Official development assistance as a share of GNI 1999	External debt (present value) as a share of GNI 1999
	1,000		*Percent*				*$ U.S.*		*Percent*			
Southern Africa:												
Angola	13,943	3.0	2.0	24.7	5.1	2.0	240	-0.8	2.1	--	6.5	344.0
Lesotho	2,065	0.7	-0.4	30.8	8.7	3.1	540	2.5	3.8	25.1	3.6	41.0
Madagascar	16,901	2.9	1.0	4.6	1.4	2.4	260	1.6	4.8	15.6	8.5	80.0
Malawi	11,808	2.2	2.3	23.5	8.5	3.8	170	-0.4	1.7	-5.3	26.8	76.0
Mozambique	18,949	1.8	6.6	30.7	2.0	2.9	210	-0.7	1.6	1.4	24.9	28.0
Swaziland	942	0.9	0.6	28.1	-0.9	3.6	1,290	0.0	2.6	-9.5	0.9	--
Zambia	10,865	2.1	-0.3	31.4	5.5	4.0	300	1.3	3.5	4.9	28.5	175.0
Zimbabwe	13,070	1.7	-0.6	30.8	5.0	6.5	480	-6.7	-4.9	-16.6	2.5	77.0
Asia:												
Afghanistan	25,128	11.3	-2.8	15.3	-0.6	3.8	--	--	--	--	--	--
Bangladesh	143,296	2.1	2.6	8.1	2.3	1.6	380	4.1	5.9	8.6	2.5	23.0
India	1,040,070	1.5	2.6	4.1	3.4	2.1	460	2.0	3.9	5.0	0.3	16.0
Indonesia	217,294	1.2	1.8	4.2	1.1	1.9	570	3.1	4.8	16.1	1.2	114.0
Korea, Dem. Rep.	26,197	1.3	-3.0	13.0	3.1	0.0	--	--	--	--	--	--
Nepal	24,140	2.4	3.0	6.2	6.5	1.8	220	3.9	6.5	10.6	6.9	32.0
Pakistan	148,603	2.6	2.6	5.5	6.5	2.7	470	1.9	4.4	16.0	1.2	43.0
Philippines	78,512	1.9	2.0	5.6	0.4	2.8	1,040	2.1	4.0	6.6	0.7	64.0
Sri Lanka	19,284	0.9	0.9	8.2	-4.7	1.0	870	4.3	6.0	7.2	1.7	46.0
Vietnam	80,200	1.3	5.0	5.8	-2.0	1.9	390	4.1	5.5	14.8	5.4	76.0
Latin America and the Caribbean:												
Bolivia	8,695	2.2	2.6	16.1	0.5	2.7	1,000	0.0	2.4	6.1	5.9	37.0
Colombia	43,462	1.6	-1.0	11.7	1.5	3.0	2,080	1.0	2.8	5.3	0.2	40.0
Dominican Republic	8,628	1.5	-0.7	10.8	1.9	7.3	2,100	6.0	7.8	8.7	0.3	28.0
Ecuador	13,095	1.8	3.5	17.5	1.6	5.6	1,210	0.4	2.3	-0.2	1.2	76.0
El Salvador	6,511	1.8	1.5	11.1	7.5	6.0	1,990	0.0	2.0	15.8	1.4	31.0
Guatemala	11,988	2.6	0.4	7.4	9.2	7.6	1,690	0.6	3.3	4.8	1.4	24.0
Haiti	8,399	1.6	0.5	16.5	0.1	0.8	510	-0.9	1.1	2.0	5.1	17.0
Honduras	6,719	2.3	1.2	14.9	3.8	4.6	850	2.2	4.8	14.6	7.8	63.0
Jamaica	2,622	0.9	-5.0	52.2	1.7	3.3	2,440	-0.9	0.8	4.4	0.1	61.0
Nicaragua	5,341	2.6	2.1	13.2	2.8	2.4	420	1.6	4.3	11.5	26.6	278.0
Peru	26,498	1.6	3.7	18.6	3.0	3.5	2,100	1.4	3.1	7.9	0.8	63.0
New Independent States:												
Armenia	3,791	0.1	0.4	47.1	-0.9	0.8	520	5.9	6.0	16.6	11.2	36.0
Azerbaijan	8,137	0.6	1.7	43.8	17.5	-0.1	610	10.2	11.1	17.8	2.8	17.0
Georgia	5,206	-0.5	0.6	48.4	5.5	1.6	590	1.9	1.9	41.6	5.6	45.0
Kazakhstan	16,172	0.0	-5.8	78.6	16.9	0.0	1,190	10.0	9.6	23.9	1.1	38.0
Kyrgyzstan	5,037	1.2	0.0	46.8	9.4	1.2	270	3.9	5.0	-0.4	17.6	105.0
Tajikistan	6,171	0.7	2.8	48.4	-4.9	1.5	170	8.1	8.3	18.2	15.2	--
Turkmenistan	4,737	0.0	10.4	36.5	-1.1	2.1	840	15.3	17.6	101.6	0.7	52.0
Uzbekistan	24,881	0.0	8.7	23.9	7.9	0.7	610	2.5	4.0	-5.6	2.5	25.0

-- = data unavailable or not applicable due to inconsistent data set.

Sources: Population = UN World Population Prospects, 2000; Macroeconomic indicators = World Bank, ERS calculations.