

Technical annex

Updated parameters

This technical annex describes the impact of a revision in two key parameters used in the FAO methodology for estimating undernourishment. The revised parameters were introduced following new population statistics from the United Nations Population Division in 2006 and new human energy requirements established by FAO, the United Nations University (UNU) and the World Health Organization (WHO) in 2004.²² FAO utilizes both parameters for deriving minimum dietary energy requirements (MDERs) on a per person basis, which are unique for each year and country in the world. The revised parameters were applied to the 1990–92 benchmark period and to all subsequent years for which FAO has produced results. As a result, undernourishment statistics and the associated progress and setbacks in terms of World Food Summit (WFS) and Millennium Development Goal (MDG) hunger reduction targets have changed over the entire reporting period. At times, this has resulted in substantial changes to the estimates presented on a country-by-country basis in Table 1 (page 48).

Minimum dietary energy requirements

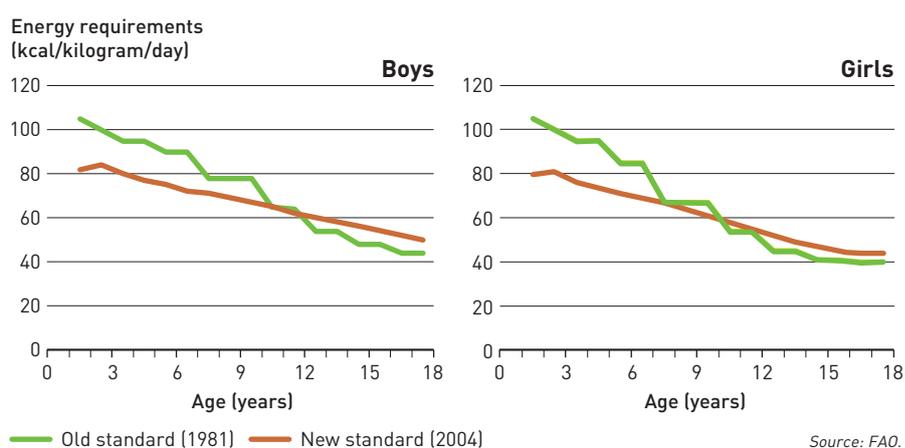
Most significant in terms of their impact on undernourishment estimates are the new standards of human energy requirements released by FAO, the UNU and WHO. Used for the first time in *The State of Food Insecurity in the World 2008*, these new standards affect the *minimum* dietary energy requirements. The MDER is a crucial factor in FAO's undernourishment methodology as it establishes a cut-off point, or threshold, to estimate

the number and prevalence (percentage) of the hungry population in a country. When the threshold changes, so too may the number and percentage of people estimated to be undernourished.

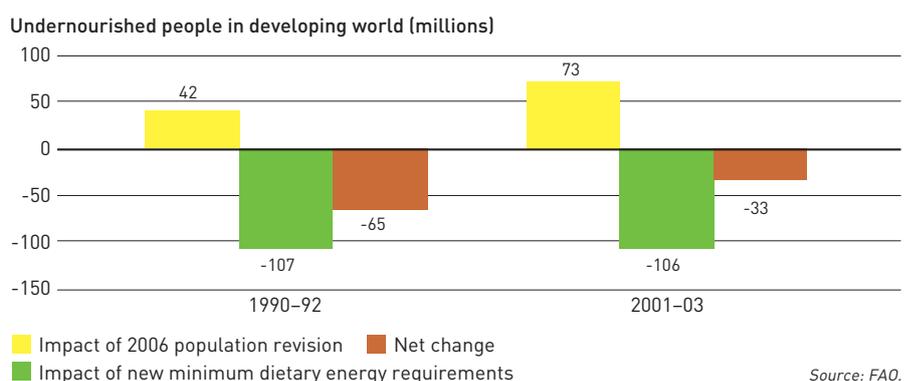
Dietary energy requirements differ by gender and age. They also vary for different levels of activity. Accordingly, MDERs, the amount of energy needed for light activity and a minimum acceptable weight for

attained height, vary by country and from year to year depending on the gender and age structure of the population. For an entire population, the MDER is the weighted average of the MDERs of the different gender-age groups in the population. It is expressed in kilocalories (kcal) per person per day. Particularly in countries with a high prevalence of undernourishment, a large proportion of the population typically

A Changes in recommended energy requirements, 1981 and 2004



B Changes due to revised population estimates and minimum energy requirements



consumes dietary energy levels close to the cut-off point, making the MDER a highly sensitive parameter. In most countries, the new human energy requirement standards have resulted in an overall drop in both the amount of food required and the prevalence of undernourishment. The new standards have meant a drop in MDERs for children and a slight increase in those for adolescents and adults. The difference has been greatest in those countries with a relatively high proportion of children under 12 years of age. Figure A compares the old and new standards for boys and girls. On average, the new standards have resulted in a drop in MDERs of 88 kcal per person per day in the world, a decrease in food needs equivalent to almost 60 million tonnes of cereals. The effect of these new standards has been to *reduce* the estimated number of undernourished people in the developing world by 107 million in the 1990–92 base period and by 106 million in 2001–03 (the most recent period that can be used for

comparison), all other factors held constant (green bars in Figure B).

Revised population estimates

This edition of *The State of Food Insecurity in the World* uses revised population estimates produced by the United Nations Population Division in 2006. The 2006 estimates are provided for the period 1950–2005 and with projections up to 2050. The 2006 revision includes *higher* estimates for most countries, with the result that population estimates for developing countries have increased by some 35 million people for the 1990–92 benchmark period, while the revised population estimates are some 53 million higher than previous estimates for 2003–05.

Given that estimated country-level total dietary energy supplies to calculate undernourishment have not changed, available food is shared among more people, thus reducing the daily energy supply available per person, and increasing the prevalence of undernourishment

in most countries owing to changes in the population.

The 2006 revised population estimates also updated gender and age distributions. Most significant are the changes in long-term trends for ageing. As countries develop, population growth rates typically decline and life expectancy increases. As the proportion of adults relative to children increases, food needs rise, with a corresponding increase in undernourishment. Between 1990–92 and 2003–05, the number of undernourished people in developing countries increased by some 66 million as a result of an ageing population, all other factors held constant.

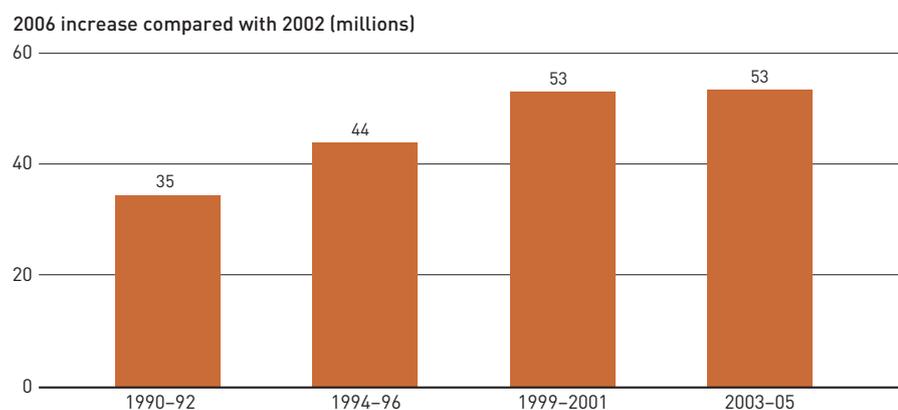
Population pyramids for China help illustrate these demographic trends. As China's adult population increased relative to the number of children between 1990–02 and 2003–05, MDERs increased by an average of 43 kcal per person per day, resulting in an increase in the number of undernourished people of 70 million. The combined effect of increases in the number of people and changes to the gender–age structure together with food redistribution available for human consumption based on the 2006 population revision is an *increase* in undernourishment estimates in the developing world of some 42 million people for 1990–92 and of about 73 million people for 2001–03, all other factors held constant (yellow bars in Figure B). The increase is greatest in countries with large populations and high population growth rates.

Net impact

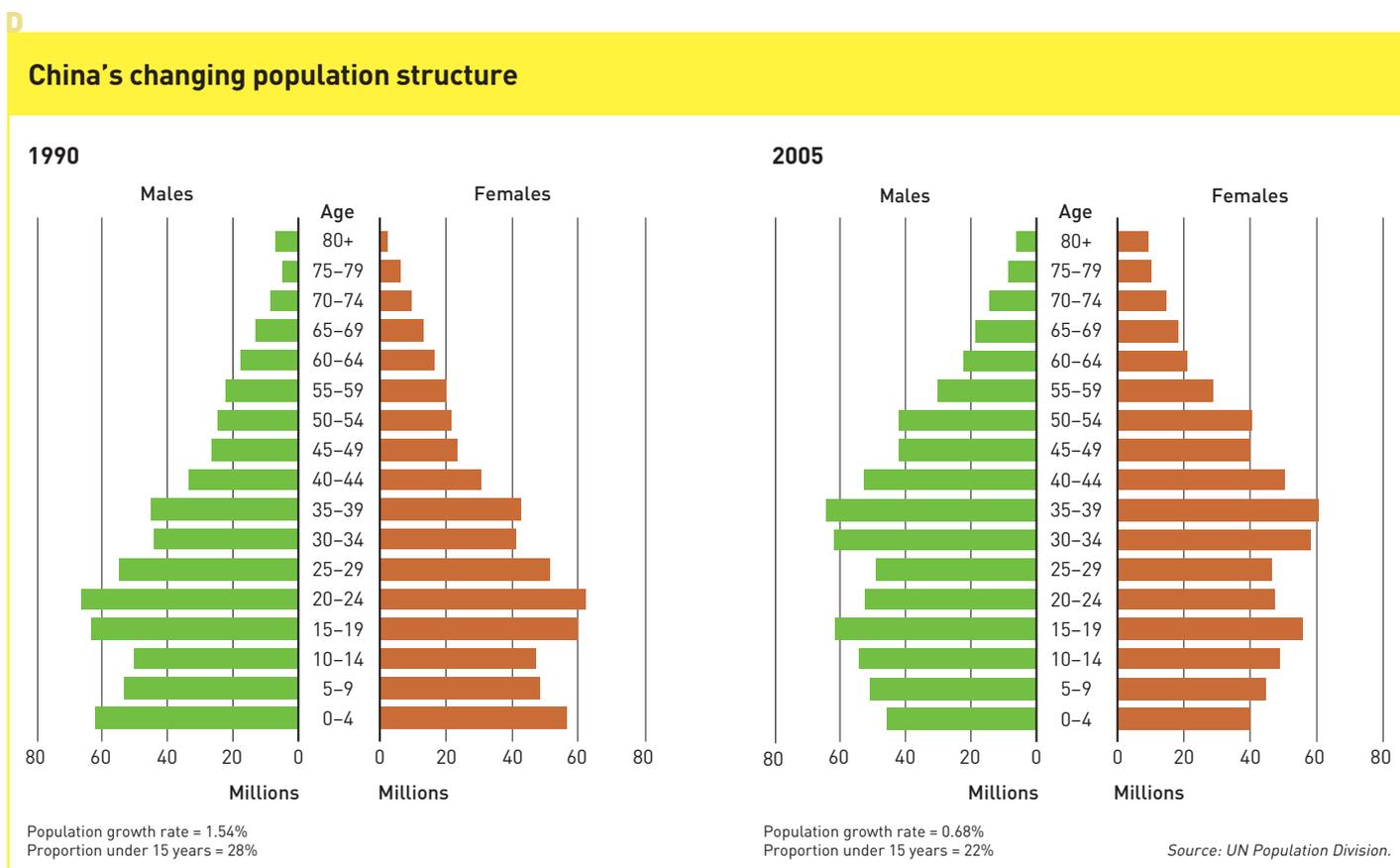
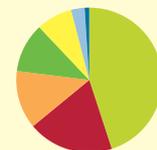
These important changes to key parameters used in FAO's hunger estimates have led to changes in

C

Difference between 2002 and 2006 United Nations population estimates for developing countries



Source: UN Population Division.



both the numbers and trends in undernourishment around the world, as discussed in the main text of this report.

The combined difference of new energy requirements and the 2006 population revisions is a decrease in FAO's estimates of undernourishment in the developing world of 65 million people in 1990–92 and of 33 million people in 2001–03 (brown bars in Figure B).

Other data changes

A number of other changes have been made to the data that affect the global undernourishment estimates. The “developing world” now includes the countries of the Commonwealth of Independent States (CIS), with the

exception of Belarus, Republic of Moldova, the Russian Federation and Ukraine (which are now included in Europe). This has had the effect of adding 10 million undernourished people in the developing world in the base period (1990–92).

Furthermore, new information obtained by FAO has resulted in major revisions to the data for China, Indonesia and Myanmar, adding a further 50 million undernourished people in the base period. The ongoing process of reviewing the food balance sheets and supply utilization accounts has also resulted in small changes to the data for many countries, with the overall result of increasing the number of undernourished in the developing world in the base period by about

5 million. The combined impact of these other changes has been an increase in the number of undernourished in the developing world of about 65 million in the base period and one of 48 million in 2001–03.

Technical annex

Table 1. Prevalence of undernourishment and progress towards the World Food Summit (WFS)¹ and the Millennium Development Goal (MDG)² targets in developing countries³

WORLD Region/subregion/country (undernourishment category)	Total population	Number of people undernourished			Progress in number towards WFS target = 0.5*	WFS trend	Proportion of undernourished in total population			Progress in prevalence towards MDG target = 0.5**	MDG trend
		2003-05 (millions)	1990-92	1995-97 (millions)			2003-05	1990-92 to 2003-05	1990-92		
WORLD	6 406.0	841.9	831.8	848.0	1.0	▲	16	14	13	0.8	▼
Developed countries	1 264.9	19.1	21.4	15.8	0.8	▼	-	-	-	na	na
Developing world	5 141.0	822.8	810.4	832.2	1.0	▲	20	18	16	0.8	▼
ASIA AND THE PACIFIC***	3 478.6	582.4	535.0	541.9	0.9	▼	20	17	16	0.8	▼
East Asia	1 386.1	183.5	152.0	131.8	0.7	▼	15	12	10	0.6	▼
China [2]	1 312.4	178.0	143.7	122.7	0.7	▼	15	12	9	0.6	▼
People's Dem. Rep. of Korea [4]	23.5	4.2	6.7	7.6	1.8	▲	21	31	32	1.6	▲
Mongolia [4]	2.6	0.7	1.0	0.8	1.1	▲	30	40	29	1.0	▼
Republic of Korea [1]	47.7	ns	ns	ns	na	na	-	-	-	na	na
Southeast Asia	544.5	105.6	88.6	86.9	0.8	▼	24	18	16	0.7	▼
Cambodia [4]	13.7	3.8	4.8	3.6	0.9	▼	38	41	26	0.7	▼
Indonesia [3]	223.2	34.5	26.7	37.1	1.1	▲	19	13	17	0.9	▼
Lao People's Dem. Rep. [3]	5.6	1.1	1.3	1.1	1.0	◀	27	26	19	0.7	▼
Malaysia [1]	25.2	ns	ns	ns	na	na	-	-	-	na	na
Myanmar [3]	47.6	18.1	14.8	8.8	0.5	▼	44	34	19	0.4	▼
Philippines [3]	82.9	13.3	12.8	13.3	1.0	◀	21	18	16	0.8	▼
Thailand [3]	62.6	15.7	12.3	10.9	0.7	▼	29	21	17	0.6	▼
Viet Nam [3]	83.8	18.7	15.6	11.5	0.6	▼	28	21	14	0.5	▼
South Asia	1 468.4	282.5	284.8	313.6	1.1	▲	25	22	21	0.9	▼
Bangladesh [4]	150.5	41.6	51.4	40.1	1.0	▼	36	40	27	0.7	▼
India [4]	1 117.0	206.6	199.9	230.5	1.1	▲	24	21	21	0.9	▼
Nepal [3]	26.6	4.0	5.3	4.0	1.0	◀	21	24	15	0.7	▼
Pakistan [4]	155.4	25.7	23.7	35.0	1.4	▲	22	18	23	1.0	▲
Sri Lanka [4]	19.0	4.6	4.4	4.0	0.9	▼	27	24	21	0.8	▼
Central Asia	57.7	4.0	4.7	6.5	1.6	▲	8	9	11	1.4	▲
Kazakhstan [1]	15.1	ns	ns	ns	na	na	-	-	-	na	na
Kyrgyzstan [1]	5.2	0.8	0.6	ns	na	▼	17	13	-	na	▼
Tajikistan [4]	6.5	1.8	2.4	2.2	1.2	▲	34	42	34	1.0	◀
Turkmenistan [2]	4.8	0.3	0.4	0.3	0.8	◀	9	9	6	0.6	▼
Uzbekistan [3]	26.2	1.0	1.1	3.6	3.7	▼	5	5	14	3.0	▲
Western Asia	15.9	6.1	4.4	2.2	0.4	▼	38	27	14	0.4	▼
Armenia [4]	3.0	1.6	1.1	0.6	0.4	▼	46	34	21	0.5	▼
Azerbaijan [3]	8.3	2.0	2.1	1.0	0.5	▼	27	27	12	0.4	▼
Georgia [3]	4.5	2.5	1.2	0.6	0.2	▼	47	24	13	0.3	▼
LATIN AMERICA AND THE CARIBBEAN	544.2	52.6	51.8	45.2	0.9	▼	12	11	8	0.7	▼
North and Central America	141.9	9.3	10.2	8.8	0.9	▼	8	8	6	0.8	▼
Costa Rica [1]	4.3	ns	ns	ns	na	na	-	-	-	na	na
El Salvador [3]	6.6	0.5	0.6	0.6	1.3	▲	9	11	10	1.1	▲
Guatemala [3]	12.4	1.3	1.7	2.0	1.6	▲	14	17	16	1.2	▲
Honduras [3]	6.7	1.0	0.9	0.8	0.8	▼	19	16	12	0.6	▼
Mexico [1]	103.4	ns	4.3	ns	na	na	-	5	-	na	na
Nicaragua [4]	5.4	2.2	1.9	1.2	0.5	▼	52	40	22	0.4	▼
Panama [3]	3.2	0.4	0.6	0.5	1.2	▲	18	20	17	0.9	▼
The Caribbean	33.7	7.5	8.6	7.6	1.0	▲	26	28	23	0.9	▼
Cuba [1]	11.2	0.6	1.5	ns	na	▼	5	14	-	na	▼

(continued)



Table 1. Prevalence of undernourishment and progress towards the World Food Summit (WFS)¹ and the Millennium Development Goal (MDG)² targets in developing countries³

WORLD Region/subregion/country (undernourishment category)	Total population	Number of people undernourished			Progress in number towards WFS target = 0.5*	WFS trend	Proportion of undernourished in total population			Progress in prevalence towards MDG target = 0.5**	MDG trend
		2003-05 (millions)	1990-92	1995-97 (millions)			2003-05	1990-92 to 2003-05	1990-92		
Dominican Republic [4]	9.3	2.0	2.0	2.0	1.0	◀▶	27	24	21	0.8	▼
Haiti [5]	9.2	4.5	4.8	5.3	1.2	▲	63	60	58	0.9	▼
Jamaica [2]	2.7	0.3	0.2	0.1	0.5	▼	11	7	5	0.4	▼
Trinidad and Tobago [3]	1.3	0.1	0.2	0.1	1.0	◀▶	11	13	10	0.9	▼
South America	368.6	35.8	33.0	28.8	0.8	▼	12	10	8	0.7	▼
Argentina [1]	38.4	ns	ns	ns	na	na	-	-	-	na	na
Bolivia [4]	9.0	1.6	1.5	2.0	1.2	▲	24	20	22	0.9	▼
Brazil [2]	184.3	15.8	15.6	11.7	0.7	▼	10	10	6	0.6	▼
Chile [1]	16.1	0.9	ns	ns	na	▼	7	-	-	na	▼
Colombia [3]	44.3	5.2	4.2	4.3	0.8	▼	15	11	10	0.7	▼
Ecuador [3]	12.9	2.5	2.0	1.9	0.8	▼	24	17	15	0.6	▼
Guyana [2]	0.7	0.1	0.1	0.0	0.3	▼	18	10	6	0.3	▼
Paraguay [3]	5.8	0.7	0.5	0.7	1.0	◀▶	16	11	11	0.7	▼
Peru [3]	27.0	6.1	4.9	3.9	0.6	▼	28	20	15	0.5	▼
Suriname [2]	0.4	0.0	0.0	0.0	0.7	◀▶	11	8	7	0.6	▼
Uruguay [1]	3.3	0.2	ns	ns	na	▼	5	-	-	na	▼
Venezuela (Bolivarian Rep. of) [3]	26.3	2.1	3.1	3.2	1.6	▼	10	14	12	1.2	▲
NEAR EAST AND NORTH AFRICA***	420.0	19.1	29.6	33.0	1.7	▲	6	8	8	1.3	▲
Near East	270.1	15.0	25.3	28.4	1.9	▲	7	11	11	1.4	▲
Iran (Islamic Republic of) [1]	68.7	ns	ns	ns	na	na	-	-	-	na	na
Jordan [1]	5.4	ns	0.2	ns	na	na	-	5	-	na	na
Kuwait [1]	2.6	0.4	0.1	ns	na	▼	20	5	-	na	▼
Lebanon [1]	4.0	ns	ns	ns	na	na	-	-	-	na	na
Saudi Arabia [1]	23.0	ns	ns	ns	na	na	-	-	-	na	na
Syrian Arab Republic [1]	18.4	ns	ns	ns	na	na	-	-	-	na	na
Turkey [1]	72.0	ns	ns	ns	na	na	-	-	-	na	na
United Arab Emirates [1]	3.9	ns	ns	ns	na	na	-	-	-	na	na
Yemen [4]	20.5	3.8	5.0	6.5	1.7	▲	30	31	32	1.1	▲
North Africa	149.9	4.0	4.3	4.6	1.2	▲	-	-	-	na	na
Algeria [1]	32.4	ns	1.5	ns	na	na	-	5	-	na	na
Egypt [1]	71.6	ns	ns	ns	na	na	-	-	-	na	na
Libyan Arab Jamahiriya [1]	5.8	ns	ns	ns	na	na	-	-	-	na	na
Morocco [1]	30.2	1.2	1.4	ns	na	▼	5	5	-	na	▼
Tunisia [1]	10.0	ns	ns	ns	na	na	-	-	-	na	na
SUB-SAHARAN AFRICA***	698.3	168.8	194.0	212.1	1.3	▲	34	34	30	0.9	▼
Central Africa	93.1	22.0	38.4	53.3	2.4	▲	34	51	57	1.7	▲
Cameroon [4]	17.4	4.3	5.1	4.0	0.9	▼	34	35	23	0.7	▼
Central African Republic [5]	4.1	1.4	1.8	1.8	1.2	▲	47	50	43	0.9	▼
Chad [5]	9.8	3.7	3.8	3.8	1.0	▲	59	51	39	0.7	▼
Congo [4]	3.5	1.0	1.2	0.8	0.8	▼	40	43	22	0.5	▼
Democratic Republic of the Congo [5]	56.9	11.4	26.5	43.0	3.8	▲	29	57	76	2.6	▲
Gabon [1]	1.3	0.0	ns	ns	na	▼	5	-	-	na	▼
East Africa	242.4	77.1	86.1	86.0	1.1	▲	45	44	35	0.8	▼
Burundi [5]	7.6	2.6	3.6	4.8	1.9	▲	44	57	63	1.4	▲
Eritrea****[5]	4.4	2.1	2.1	3.0	1.4	▲	67	64	68	1.0	▲

(continued)

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Table 1. Prevalence of undernourishment and progress towards the World Food Summit (WFS)¹ and the Millennium Development Goal (MDG)² targets in developing countries³

WORLD Region/subregion/country (undernourishment category)	Total population	Number of people undernourished			Progress in number towards WFS target = 0.5*	WFS trend	Proportion of undernourished in total population			Progress in prevalence towards MDG target = 0.5**	MDG trend
		2003-05 (millions)	1990-92	1995-97 (millions)			2003-05	1990-92 to 2003-05	1990-92		
Ethiopia****[5]	77.0	37.4	39.3	35.2	0.9	▼	71	63	46	0.6	▼
Kenya [4]	34.7	8.0	8.4	11.0	1.4	▲	33	30	32	1.0	▼
Rwanda [5]	9.1	3.2	3.3	3.6	1.2	▲	45	56	40	0.9	▼
Sudan [4]	36.2	8.3	7.2	7.4	0.9	▼	31	24	21	0.7	▼
Uganda [3]	28.0	3.6	5.1	4.1	1.1	▲	19	23	15	0.8	▼
United Republic of Tanzania [5]	37.5	7.5	12.7	13.0	1.7	▲	28	41	35	1.2	▲
Southern Africa	99.2	32.4	35.8	36.8	1.1	▲	45	43	37	0.8	▼
Angola [5]	15.6	7.2	7.3	7.1	1.0	▼	66	58	46	0.7	▼
Botswana [4]	1.8	0.3	0.4	0.5	1.7	▲	20	24	26	1.3	▲
Lesotho [3]	2.0	0.2	0.2	0.3	1.2	▲	15	13	15	1.0	◀▶
Madagascar [5]	18.1	3.9	5.4	6.6	1.7	▲	32	37	37	1.2	▲
Malawi [4]	12.9	4.3	3.7	3.8	0.9	▼	45	36	29	0.7	▼
Mauritius [2]	1.2	0.1	0.1	0.1	1.0	◀▶	7	6	6	0.9	▼
Mozambique [5]	20.1	8.2	8.6	7.5	0.9	▼	59	52	38	0.6	▼
Namibia [3]	2.0	0.4	0.5	0.4	0.9	◀▶	29	29	19	0.7	▼
Swaziland [3]	1.1	0.1	0.2	0.2	1.8	▲	12	20	18	1.5	▲
Zambia [5]	11.3	3.3	3.9	5.1	1.5	▲	40	41	45	1.1	▲
Zimbabwe [5]	13.0	4.3	5.5	5.2	1.2	▲	40	46	40	1.0	◀▶
West Africa	263.7	37.3	33.8	36.0	1.0	▼	20	16	14	0.7	▼
Benin [3]	8.2	1.5	1.7	1.6	1.1	▲	28	26	19	0.7	▼
Burkina Faso [3]	13.5	1.3	1.3	1.3	1.0	◀▶	14	12	10	0.7	▼
Côte d'Ivoire [3]	18.3	2.0	2.4	2.6	1.3	▲	15	16	14	0.9	▼
Gambia [4]	1.6	0.2	0.4	0.5	2.3	▲	20	31	30	1.5	▲
Ghana [2]	22.1	5.4	3.0	1.9	0.3	▼	34	16	9	0.3	▼
Guinea [3]	8.8	1.2	1.3	1.5	1.3	▲	19	18	17	0.9	▼
Liberia [5]	3.4	0.6	0.9	1.3	2.2	▲	30	39	40	1.3	▲
Mali [3]	11.3	1.1	1.3	1.2	1.1	▲	14	15	11	0.8	▼
Mauritania [2]	2.9	0.2	0.2	0.2	1.2	◀▶	10	8	8	0.8	▼
Niger [4]	12.8	3.1	3.8	3.7	1.2	▲	38	40	29	0.7	▼
Nigeria [2]	138.0	14.7	10.8	12.5	0.8	▼	15	10	9	0.6	▼
Senegal [4]	11.5	2.3	3.0	3.0	1.3	▲	28	32	26	0.9	▼
Sierra Leone [5]	5.4	1.9	1.8	2.5	1.3	▲	45	43	47	1.0	▲
Togo [5]	6.1	1.8	1.8	2.3	1.2	▲	45	39	37	0.8	▼

Notes: Please see page 55.



Table 2. Selected food, nutrition and development indicators, classified by undernourishment category, income and region

UNDERNOURISHMENT CATEGORY by income group ¹	DES ² per capita	Contribution of food groups to total energy ³				Contributions of nutrients to total energy ⁴				Agriculture in total GDP	Urban population	Child malnutrition (most recent)			
		C	RT	OF	AP	CHO	Protein	Fat	2005			(%)	Under- weight	Stunting	
Region/country	(kcal/day)	[% kcal]				[% kcal]				(%)	(%)	[%]	[%]		
35% OR MORE UNDERNOURISHED															
Low income															
Latin America and the Caribbean															
Haiti	1 840	49	8	6	7	76	H	9	L	15	L	28*	38	22	24
Sub-Saharan Africa															
Burundi	1 630	17	36	1	2	84	H	11	R	6	L	35	10	39	53
Central African Republic	1 900	23	31	15	12	61	R	9	L	30	H	56	38	29	38
Chad	1 980	53	8	6	6	62	R	12	R	26	R	21	25	37	41
Democratic Rep. of the Congo	1 500	20	56	8	2	80	H	6	L	14	L	46	32	31	38
Eritrea	1 530	68	4	11	5	70	R	12	R	18	R	23	19	40	38
Ethiopia	1 810	66	14	3	5	79	H	11	R	10	L	47	16	38	47
Liberia	2 010	40	24	20	3	68	R	7	L	25	R	66	57	26	39
Madagascar	2 010	58	20	4	7	79	H	9	L	12	L	28	27	42	48
Mozambique	2 070	45	34	9	2	78	H	8	L	15	L	27	34	24	41
Rwanda	1 940	16	39	4	3	82	H	9	L	9	L	42	18	23	45
Sierra Leone	1 910	50	10	15	4	67	R	10	L	23	R	46	40	30	40
Togo	2 020	49	26	10	3	72	R	9	L	19	R	44	39	26	24
United Republic of Tanzania	2 010	53	17	7	6	76	H	10	L	14	L	46	24	44	50
Zambia	1 890	62	14	7	5	74	R	10	L	16	R	23	35	20	50
Zimbabwe	2 040	56	2	13	6	66	R	9	L	24	R	19	35	17	29
Lower middle income															
Sub-Saharan Africa															
Angola	1 880	37	27	11	8	71	R	9	L	20	R	8	53	31	45
20 TO 34% UNDERNOURISHED															
Low income															
Asia and the Pacific															
Bangladesh	2 230	80	2	7	3	81	H	9	L	11	L	20	25	48	43
Cambodia	2 160	73	3	3	9	76	H	10	L	14	L	31	19	36	37
Dem. People's Rep. of Korea	2 150	61	7	6	7	74	R	11	R	15	L	nd	61	23	37
Pakistan	2 340	49	1	16	15	63	R	10	L	27	R	21	34	38	37
Tajikistan	2 070	66	3	9	10	66	R	11	R	23	R	24	25	17	27
Near East and North Africa															
Yemen	2 010	59	1	11	8	69	R	11	R	21	R	14*	27	46	53
Sub-Saharan Africa															
Gambia	2 140	53	1	21	6	60	R	9	L	30	H	33	53	20	22
Kenya	2 040	50	6	8	12	69	R	11	R	20	R	27	21	20	30
Malawi	2 130	56	18	3	2	78	H	10	L	12	L	33	17	31	45
Niger	2 140	66	2	6	5	70	R	11	R	19	R	40*	17	19	46
Senegal	2 150	62	3	15	8	65	R	10	L	25	R	17	41	17	16
Lower middle income															
Asia and the Pacific															
Armenia	2 310	52	6	7	15	69	R	12	R	19	R	21	64	3	13
India	2 360	58	2	13	6	71	R	9	L	20	R	18	29	43	48
Mongolia	2 190	45	3	9	29	56	R	13	R	31	H	25	57	6	21
Sri Lanka	2 360	56	2	3	6	74	R	9	L	17	R	17	15	29	14

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Table 2. Selected food, nutrition and development indicators, classified by undernourishment category, income and region

UNDERNOURISHMENT CATEGORY by income group ¹	DES ² per capita (kcal/day)	Contribution of food groups to total energy ³				Contribution of nutrients to total energy ⁴			Agriculture in total GDP 2005 [%]	Urban population [%]	Child malnutrition (most recent)				
		C	RT	OF	AP	CHO	Protein	Fat			Under- weight [%]	Stunting [%]			
Latin America and the Caribbean															
Bolivia	2 170	41	7	10	16	66	R	10	L	24	R	14	64	8	27
Dominican Republic	2 300	29	3	18	14	61	R	9	L	30	H	12	66	5	7
Nicaragua	2 350	53	1	9	10	70	R	10	R	20	R	19	59	10	20
Sub-Saharan Africa															
Cameroon	2 230	39	17	10	6	70	R	10	L	19	R	20	54	19	30
Congo	2 330	27	33	14	7	69	R	9	L	22	R	5	60	14	26
Sudan	2 290	49	1	6	24	60	R	13	R	27	R	34	40	41	43
Upper middle income															
Sub-Saharan Africa															
Botswana	2 200	45	7	10	12	67	R	12	R	21	R	2	57	13	23
10 TO 19% UNDERNOURISHED															
Low income															
Asia and the Pacific															
Lao People's Dem. Rep.	2 300	72	3	2	7	77	H	11	R	12	L	44	20	40	42
Myanmar	2 380	60	1	10	8	68	R	11	R	21	R	57**	30	32	32
Nepal	2 430	68	4	10	5	73	R	10	L	17	R	36	15	39	49
Uzbekistan	2 440	58	2	12	18	62	R	12	R	25	R	28	37	5	15
Viet Nam	2 650	68	1	4	13	73	R	10	L	17	R	21	26	25	30
Sub-Saharan Africa															
Benin	2 290	39	32	9	4	71	R	10	L	19	R	32	40	23	38
Burkina Faso	2 620	73	1	5	5	68	R	12	R	20	R	32	18	37	35
Côte d'Ivoire	2 520	31	33	13	4	73	R	8	L	19	R	23	45	20	34
Guinea	2 540	47	14	14	3	70	R	9	L	21	R	20	33	26	35
Mali	2 570	67	2	8	10	69	R	11	R	19	R	37	30	33	38
Uganda	2 380	21	22	7	6	73	R	9	L	17	R	33	12	20	32
Lower middle income															
Asia and the Pacific															
Azerbaijan	2 530	55	6	6	14	71	R	11	R	17	R	10	51	7	13
Georgia	2 480	56	4	7	18	67	R	13	R	21	R	17	52	3	12
Indonesia	2 440	64	6	7	5	74	R	9	L	17	R	13	47	28	42
Philippines	2 470	55	3	6	13	73	R	9	L	17	R	14	62	28	30
Thailand	2 490	48	2	7	12	71	R	9	L	20	R	10	32	9	12
Latin America and the Caribbean															
Colombia	2 670	34	6	12	16	68	R	9	L	23	R	12	72	7	12
Ecuador	2 300	33	3	19	18	58	R	10	L	32	H	7	62	9	23
El Salvador	2 530	50	2	8	11	69	R	11	R	20	R	11	60	10	19
Guatemala	2 270	52	1	9	8	69	R	10	L	21	R	23	47	23	49
Honduras	2 590	46	1	11	13	67	R	10	L	23	R	14	46	11	25
Paraguay	2 590	29	14	17	15	58	R	10	L	32	H	22	58	5	14
Peru	2 450	44	14	6	11	73	R	11	R	16	R	7	72	8	24
Sub-Saharan Africa															
Lesotho	2 430	79	3	2	5	77	H	11	R	12	L	17	19	20	38
Namibia	2 290	45	14	8	13	69	R	11	R	20	R	12	35	24	24
Swaziland	2 320	46	5	5	15	67	R	11	R	21	R	11	24	10	30

(continued)



Table 2. Selected food, nutrition and development indicators, classified by undernourishment category, income and region

UNDERNOURISHMENT CATEGORY by income group ¹	DES ² per capita	Contribution of food groups to total energy ³				Contribution of nutrients to total energy ⁴			Agriculture in total GDP	Urban population	Child malnutrition (most recent)				
		C	RT	OF	AP	CHO	Protein	Fat			2005	(%)	Under- weight	Stunting	
Region/country	(kcal/day)	[% kcal]				[% kcal]			(%)	(%)	weight	(%)			
Upper middle income															
Latin America and the Caribbean															
Panama	2 390	43	2	12	17	65	R	11	R	23	R	8	70	8	18
Venezuela (Bolivarian Rep. of)	2 450	38	3	17	15	63	R	11	R	27	R	4***	93	5	13
High income															
Latin America and the Caribbean															
Trinidad and Tobago	2 760	36	2	13	14	65	R	10	L	25	R	1	12	6	4
5 TO 9% UNDERNOURISHED															
Low income															
Sub-Saharan Africa															
Ghana	2 690	30	40	7	4	78	H	8	L	14	L	37	47	18	22
Mauritania	2 790	47	1	13	18	64	R	12	R	24	R	24	40	32	35
Nigeria	2 600	44	19	13	3	69	R	9	L	22	R	23	47	29	38
Lower middle income															
Asia and the Pacific															
China	2 990	51	6	7	21	61	R	12	R	27	R	13	40	7	11
Turkmenistan	2 780	60	2	9	20	64	R	13	R	23	R	20*	46	11	15
Latin America and the Caribbean															
Guyana	2 830	46	4	6	16	69	R	11	R	20	R	31	28	14	11
Upper middle income															
Latin America and the Caribbean															
Brazil	3 090	33	4	15	20	59	R	11	R	30	H	6	84	6	11
Jamaica	2 810	32	6	13	17	62	R	11	R	27	R	6	53	4	3
Suriname	2 710	41	2	14	11	67	R	9	L	24	R	6	74	13	10
Sub-Saharan Africa															
Mauritius	2 880	47	1	14	14	64	R	11	R	25	R	6	42	15	10
LESS THAN 5% UNDERNOURISHED															
Low income															
Asia and the Pacific															
Kyrgyzstan	3 120	56	8	3	18	71	R	13	R	16	R	32	36	3	14
Lower middle income															
Near East and North Africa															
Algeria	3 100	56	3	11	10	69	R	11	R	20	R	8	63	4	11
Egypt	3 320	64	2	6	6	73	R	11	R	16	R	15	43	6	18
Iran (Islamic Rep. of)	3 100	56	4	8	9	71	R	11	R	18	R	10	66	11	15
Jordan	2 820	45	2	17	11	62	R	10	L	28	R	3	82	4	9
Morocco	3 190	62	2	9	6	72	R	11	R	17	R	13	58	10	18
Syrian Arab Republic	3 000	46	2	16	12	59	R	11	R	30	H	20	50	10	22
Tunisia	3 280	49	2	16	10	63	R	11	R	26	R	12	65	4	12
Upper middle income															
Asia and the Pacific															
Kazakhstan	3 110	43	6	10	23	61	R	12	R	26	R	7	57	4	13
Malaysia	2 860	45	2	14	18	62	R	11	R	27	R	8	66	11	nd
Latin America and the Caribbean															
Argentina	3 000	35	3	12	26	59	R	12	R	29	R	9	90	4	4

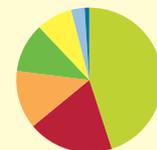
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Table 2. Selected food, nutrition and development indicators, classified by undernourishment category, income and region

UNDERNOURISHMENT CATEGORY by income group ¹	DES ² per capita	Contribution of food groups to total energy ³				Contribution of nutrients to total energy ⁴						Agriculture in total GDP	Urban population	Child malnutrition (most recent)	
		C	RT	OF	AP	CHO	Protein	Fat	2005	2005	Urban population			Under- weight	Stunting
Region/country	(kcal/day)	[% kcal]				[% kcal]						(%)	(%)	[%]	[%]
Chile	2 980	39	3	13	20	60	R	11	R	29	R	4	87	1	1
Costa Rica	2 790	34	2	14	17	64	R	10	L	26	R	9	61	5	6
Cuba	3 280	41	8	6	9	76	H	10	L	15	L	nd	76	4	5
Mexico	3 270	44	1	10	17	63	R	11	R	26	R	4	76	5	13
Uruguay	2 920	42	4	9	23	63	R	12	R	26	R	9	92	5	11
Near East and North Africa															
Lebanon	3 160	34	6	16	15	57	R	11	R	32	H	6	86	4	11
Libyan Arab Jamahiriya	3 020	43	2	17	12	61	R	10	L	29	R	nd	85	5	15
Turkey	3 340	49	3	15	10	63	R	11	R	26	R	11	67	4	12
Sub-Saharan Africa															
Gabon	2 760	33	18	6	13	70	R	12	R	18	R	5	83	12	21
High income															
Asia and the Pacific															
Republic of Korea	3 030	44	1	13	13	64	R	11	R	25	R	3	81	nd	nd
Near East and North Africa															
Kuwait	3 070	40	1	18	18	56	R	11	R	33	H	nd	98	10	24
Saudi Arabia	3 060	48	1	13	13	64	R	11	R	25	R	3	81	14	20
United Arab Emirates	3 040	44	1	8	19	63	R	13	R	24	R	2	77	14	17

Notes: Please see page 55.



Notes for Table 1

¹ **World Food Summit goal:** halve, between 1990–92 and 2015, the number of undernourished people.

² **Millennium Development Goal 1, target 1C:** halve, between 1990 and 2015, the proportion of people who suffer from hunger. Indicator 1.9: Proportion of population below minimum level of dietary energy consumption (undernourishment).

³ Latest reported period refers to 2003–05 estimates, and baseline refers to 1990–92. For countries that did not exist in the baseline period, the 1990–92 proportion of undernourished is based on 1993–95 and the number of undernourished is based on their 1990–92 population and this proportion.

Countries revise their official statistics regularly for the past as well as the latest reported period. The same holds for population data of the United Nations. Whenever this happens, FAO revises its estimates of undernourishment accordingly. Therefore, users are advised to refer to changes in estimates over time only within the same *The State of Food Insecurity in the World* publication and refrain from comparing data published in editions for different years.

Figures following country name refer to undernourishment categories (proportion of the population undernourished in 2003–05):

- [1] < 5 percent undernourished
- [2] 5–9 percent undernourished
- [3] 10–19 percent undernourished
- [4] 20–34 percent undernourished
- [5] ≥ 35 percent undernourished

Notes for Table 2

¹ Countries are classified following World Bank country income groups. For operational and analytical purposes, the World Bank has classified countries according to 2007 gross national income per capita, calculated using the World Bank Atlas method. The groups are: low income – US\$935 or less; lower middle income – US\$936–3 705; upper middle income – US\$3 706–11 455; and high income – US\$11 456 or more.

² DES = dietary energy supply.

³ Main food groups: C = cereals; RT = roots and tubers; OF = oils and fats; and AP = animal products, excluding fats. Not shown: other vegetable products (pulses, nuts, oilseeds, sweeteners, fruits, vegetables and condiments). “Animal products” includes meat, offal, dairy products, eggs and fish.

⁴ Diet composition as the proportion of energy from nutrients (carbohydrates [CHO], protein and fat) in total energy available for human consumption: H = high – proportion above 75, 15 and 30 percent for carbohydrates, protein and fat, respectively; R = within recommended range; and L = low – proportion below 55, 10 and 15 percent for carbohydrates, protein and fat, respectively.

Developing countries for which there were insufficient data are not listed in the table.

* Ratio current/baseline number of undernourished – ratio for WFS target = 0.5

** Ratio current/baseline prevalence of undernourished – ratio for MDG target = 0.5

*** Although not listed separately, provisional estimates for Afghanistan and Iraq (Near East and North Africa), Papua New Guinea (Asia and the Pacific) and Somalia (East Africa) have been included in the relevant regional aggregates. Developed countries have been included in world estimates.

**** Eritrea and Ethiopia were not separate entities in 1990–92, but estimates of the number and proportion of undernourished in the former People’s Democratic Republic of Ethiopia are included in regional and subregional aggregates for that period.

KEY

- Proportion less than 5 percent of undernourished.
- na Not applicable.
- 0.0 Zero or less than half the unit shown.
- ns Not statistically significant.

SOURCES

Total population: United Nations, Department of Economic and Social Affairs, Population Division. 2007. *World Population Prospects: The 2006 Revision*. New York, USA.

Undernourishment: FAO estimates.

Unless otherwise indicated, data refer to 2003–05.

* Data refer to 2003.

** Data refer to 2000.

*** Data refer to 2004.

KEY

- nd No data.

SOURCES

Dietary energy supply for human consumption, energy from food and energy-yielding nutrients: FAO.

Income group and share of agricultural value added to GDP: World Bank (World Development Indicators online database).

Share of urban population: United Nations, Department of Economic and Social Affairs, Population Division. 2008. *World Urbanization Prospects: The 2007 Revision*. New York, USA.

Prevalence of underweight and stunting in children less than five years old: UNICEF/WHO.

Notes

- 1 Further discussion on major driving forces behind soaring food prices in 2007–08 can be found in FAO's *The State of Agricultural Commodity Markets 2008* (forthcoming) and *The State of Food and Agriculture 2008*.
- 2 OECD-FAO. 2008. *OECD-FAO Agricultural Outlook 2008–2017*. Paris, OECD Publishing.
- 3 International Energy Agency. 2006. *World Energy Outlook 2006*. Paris. OECD Publishing.
- 4 Op. cit., see note 2.
- 5 Centre for Research on the Epidemiology of Disasters, Université Catholique de Louvain. 2008. Disaster Data: A Balanced Perspective. *CRED Crunch*, 11: 1–2 [available at www.emdat.be/Documents/CredCrunch/Cred%20Crunch%2011.pdf].
- 6 An LIFDC is characterized by a low per capita income making it eligible for financing from international development associations under World Bank rules, a structural (over three years) net import position for basic foodstuffs and consistency in LIFDC status, or "persistence of position" over time. Most LIFDCs are in Africa (37) and Asia (21).
- 7 For more on LIFDCs that import petroleum products and foodgrains, see FAO. 2008. *Soaring food prices: facts, perspectives, impacts and actions required*. Information document for the High-Level Conference on World Food Security, Rome, 3–5 June 2008 [available at www.fao.org/foodclimate/conference/doclist/en/?no_cache=1].
- 8 The full list of countries severely affected by high fuel and food prices is available on the FAO/GIEWS Web site: www.fao.org/GIEWS/ENGLISH/HOTSPOTS/INDEX_M.HTM.
- 9 T. Fouéré, B. Mair, F. Delpeuch, Y. Martin-Prével, F. Tchibindat and G. Adoua-Oyila. 2000. Dietary changes in African urban households in response to currency devaluation: foreseeable risks for health and nutrition. *Public Health Nutrition*, 3: 293–301.
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- 12 H. Zaman, C. Delgado, D. Mitchell and A. Revenga. (forthcoming). *Rising food prices: are there right policy choices?* Development Outreach. Washington, DC, World Bank.
- 13 FAO. 2008. *Climate change adaptation and mitigation: challenges and opportunities for food security*. Information document prepared for the High-level Conference on World Food Security: the Challenges of Climate Change and Bioenergy, Rome, 3–5 June 2008 [available at [ftp://ftp.fao.org/docrep/fao/meeting/013/k2545e.pdf](http://ftp.fao.org/docrep/fao/meeting/013/k2545e.pdf)].
- 14 For more detail on enhancing agricultural productivity, see FAO. (forthcoming). *The State of Agricultural Commodity Markets 2008*. Rome.
- 15 R. Birner and D. Resnick. 2005. Policy and politics for smallholder agriculture. In IFPRI. *The future of small farms: proceedings of a research workshop*, pp. 283–311. Wye, UK, 26–29 June 2005. Washington, DC, IFPRI.
- 16 P.B.R. Hazell, C. Poulton, S. Wiggins and A. Dorward. 2007. *The future of small farms for poverty reduction and growth*. 2020 Discussion Paper 42. Washington, DC, IFPRI.
- 17 World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington, DC.
- 18 For examples of input credit schemes, see: J. Govereh, J. Nyoro and T.S. Jayne. 1999. *Smallholder commercialization, interlinked markets and food crop productivity: cross-country evidence in eastern and southern Africa*. Michigan, USA, Department of Agricultural Economics and Department of Economics, Michigan State University. J. Tefft. (forthcoming). White "gold": cotton in Francophone West Africa. In S. Haggblade and P. Hazell, eds. *Successes in African agriculture: lessons for the future*. Washington, DC, IFPRI. C. Poulton, J. Kydd and A. Dorward. 2006. Overcoming market constraints on pro-poor agricultural growth in sub-Saharan Africa. *Development Policy Review*, 24(3): 243–277.
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The State of Food Insecurity in the World

As commodity prices soared in 2007–08, fears of a world food crisis threatening the livelihoods of millions of people and causing widespread hunger and poverty triggered high-level meetings to decide on immediate measures to mitigate the impacts of high prices on the world's poorest and most vulnerable populations.

The State of Food Insecurity in the World 2008 presents the latest statistics on global undernourishment. It reviews the impact of high food prices and concludes that chronic hunger in the world has increased rapidly, now affecting well over 900 million people, and placing tremendous pressure on achieving hunger reduction targets set for 2015 by the 1996 World Food Summit and as agreed under the first Millennium Development Goal.

This report finds that high food prices hit the poorest, landless and female-headed households hardest, affecting real incomes and raising the prevalence of food insecurity and malnutrition among the poor by reducing the quantity and quality of food consumed. Governments worldwide have adopted measures to contain the negative impacts of high food prices. However, these have had limited effect, with some proving detrimental to world price levels and stability.

This report also examines how high food prices present an opportunity to relaunch smallholder agriculture in the developing world. With appropriate incentives, farming households could see immediate gains, while other rural households could benefit in the longer run. The report advocates FAO's comprehensive twin-track approach to address the adverse impacts of high food prices on world hunger. The strategy should include measures to enable the agriculture sector, especially smallholders in developing countries, to respond to high food prices, while also implementing targeted safety nets and social protection programmes for the most food-insecure and vulnerable.



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