

# The Challenge of Hunger

Global Hunger Index: Facts, determinants, and trends



# The Challenge of **Hunger**

Global Hunger Index: Facts, determinants, and trends  
Case studies in the post-conflict countries of Afghanistan and Sierra Leone



welt  
hunger  
hilfe



INTERNATIONAL FOOD  
POLICY RESEARCH INSTITUTE  
*sustainable solutions for ending hunger and poverty*

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# Preface

by Prof. Joachim von Braun, director general of the International Food Policy Research Institute (left), and Dr. Hans-Joachim Preuß, secretary general of Deutsche Welthungerhilfe



It's a bitter reality that in a world that is growing closer all the time, hunger, undernutrition, and abject poverty are still rife. The poorest of the poor lack a sufficiently influential voice to make their fundamental concerns be heard. It's therefore essential that knowledge, political will, and action be brought together in the fight against hunger. The collaboration between Deutsche Welthungerhilfe and the International Food Policy Research Institute (IFPRI) contributes to this endeavour.

While there has been progress in the fight against hunger in a number of regions in the world, pledges made to eradicate hunger are being repeatedly broken. The target of halving the proportion of hungry people in the world as agreed by 189 heads of state in the 2000 Millennium Goals will not be met: it's estimated that if trends continue at the current pace, there will still be around 610 million people suffering from hunger by the year 2015 – that is, 32 million more than set as a target by the heads of state. The considerably more ambitious goal set at the 1996 World Food Summit in Rome – to reduce the number of hungry to 412 million people – can be seen as more desirable but the world is not on track to achieve it.

In addition to the World Food Summit Declaration in 1996 and the Millennium Development Goals of 2000, the 187 member states of the United Nations Food and Agriculture Organisation (FAO) also agreed to implement a “Right to Food” declaration on the basis of voluntary guidelines two years ago. These three declarations provide civil society organisations – in the North as well as the South – with important starting points from which they can assess the actions of governments and call for the fulfilment of their commitments.

Without public pressure, however, the drastic situation of the hungry and undernourished will not improve. Deutsche Welthungerhilfe, working in collaboration with other nongovernmental organisations in the North as well as the South, has been a committed advocate for the hungry and poor for many decades. The fight against hunger and poverty requires advocacy as well as lobbying efforts and public and private funding to support relief projects.

Reputable advocacy work must be founded on facts and sound scientific evidence. The Global Hunger Index developed by IFPRI and presented to the public in this report fills a gap. The index can provide a differentiated picture of the causes and manifestations of hunger in most developing countries and countries in transition. This index helps to monitor both the successes and failures in the fight against hunger. Conclusions drawn from information in the index can pave the way for effective political action and well-designed strategies for eradicating hunger.

We hope that the new Global Hunger Index will become an effective tool in the fight against hunger and poverty!

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Many people around the world literally live from hand to mouth.

# 1. | A new index to help mobilize against hunger

by Doris Wiesmann

## 1.1 | The Global Hunger Index as an instrument for monitoring and advocacy

Reputable advocacy work must be based on facts and solid scientific evidence. However, even the timely measurement of partial aspects of hunger – such as inadequate dietary energy intake – faces data and methodological challenges. It is safe to say that international advocacy efforts would benefit from the availability of a comprehensive measure of hunger.

Various international indices were developed to measure other complex phenomena, including the United Nations Development Programme's Human Development Index and Transparency International's Corruption Perceptions Index. The U.S.-based Bread for the World tried to establish a "Hunger Index" in its

2001 annual report, but did not follow up on the idea in subsequent editions. An appropriate hunger index must be scientifically sound and must be made available for as many developing countries and countries in transition as possible. The underlying data should be released annually, so that updated rankings comparing countries and regions can be presented each year. This is the goal of the Global Hunger Index.

Because hunger has many faces, it is not sufficient for the index to only capture food availability. The direct consequences of hunger, such as shortfalls in nutritional status and reduced chances of survival, also need to be taken into account. Ideally, vitamin and mineral deficiencies should be considered as well, but the availability of recent data on an international scale is insufficient to include these indicators. Therefore, the GHI focuses on three essential dimensions of hunger that reflect vitamin and mineral deficiencies to some extent: insufficient dietary energy availability, shortfalls in nutritional status, and premature mortality.

## 1.2 | The Concept of the Global Hunger Index (GHI)

The Global Hunger Index is based on three equally weighted indicators:

- the proportion of undernourished as a percentage of the population (reflecting the share of the population with insufficient dietary energy intake);
- the prevalence of underweight in children under the age of five (indicating the proportion of children suffering from weight loss and/or reduced growth);
- the under-five mortality rate (partially reflecting the fatal synergy between inadequate dietary intake and unhealthy environments).

Combining the proportion of undernourished in the population with the two indicators relating to children under five ensures that both the food-supply situation of the population as a whole and the effects of inadequate nutrition on a physiologically very vulnerable group are captured.

Children's nutritional status deserves particular attention because a lack of nutrients places them at high risk of physical and mental impairment and death. For many children in developing countries who die from infectious diseases, the indirect cause of death is a weakened immune system due to a lack of dietary energy, vitamins and minerals. Since the first two indicators – the proportion of undernourished and the prevalence of underweight in children – do not reveal premature death as the most tragic consequence of hunger, the under-five mortality rate is also included.

The Global Hunger Index has the advantage of going beyond dietary energy availability, which is the focus of FAO's measure of undernourishment<sup>1</sup>. The GHI's broader conceptual basis better reflects the multidimensional causes and manifestations of hunger. Inequitable resource allocations between households

and also within households are taken into consideration since the latter affect the physical well-being of children. Sufficient food availability at the household level does not guarantee that all members benefit from it in equal measure.

All three index components are expressed as percentages, and the results of a principal components analysis suggest equal weighting. The GHI varies between the best possible score of 0 and the worst possible score of 100.<sup>2</sup> Higher scores indicate greater hunger – the lower the score, the better the country's situation. GHI scores above 10 are considered serious, scores greater than 20 are alarming and scores exceeding 30 are extremely alarming.

For this report, the Global Hunger Index was calculated for the years 1981, 1992, 1997, and 2003. The year 2003 reflects the most up-to-date index scores, since more recent data have not yet become available. Due to the extremely time-consuming nature of gathering and processing data in developing countries, the publication of the data lags behind by two to three years on average. For example, FAO's 2005 figures on the proportion of undernourished worldwide are based on data from 2000 to 2002.

The calculation of GHI scores is restricted to 97 developing countries and 22 countries in transition where measuring hunger is considered most relevant. A few Eastern European countries and Western developed nations are not taken into consideration<sup>3</sup> because hunger has been largely overcome in these countries, and overnutrition is a greater problem than a lack of food.

## 1.3 | Overview: Wars and AIDS exacerbate hunger – Africa feels the effects

A comparison of countries shows that Belarus has the lowest (best) GHI score, followed by Argentina and other Latin American and Eastern European countries that have high levels of economic and so-

cial development. Burundi, Eritrea, and other Sub-Saharan African countries have the highest (worst) scores, mainly due to poverty and armed conflict.

The hot spots of hunger and undernutrition are in South Asia and Sub-Saharan Africa. Positive trends prevail in South and Southeast Asia, where, as opposed to Africa, the Green Revolution boosted food supplies and acted as an engine for economic growth. Investments in the social sector and infrastructure reinforced this positive development.

The trends are mixed for countries in Sub-Saharan Africa: whereas a few countries were successful in reducing hunger, civil wars and bad governance produced detrimental outcomes in many other countries. Moreover, warfare was frequently accompanied by economic mismanagement, excessive price controls, and state-created barriers to internal trade and market development. However, some countries that were involved in particularly destructive armed conflicts implemented economic reforms and initiated new developments after signing peace agreements and beginning the reconstruction process.

In conclusion, when taking Gross National Income per capita into account, it becomes apparent that hunger and undernutrition tend to increase when economic resources are scarce or are lacking. Therefore, economic development plays a central role in the fight against hunger, but public funding and the societal structures are also critical; policies such as investment in health care, education, and social protection, as well as the promotion of agriculture, improve food security and nutrition. Bad governance, increasing income inequality, encroachments on women's rights, rising AIDS prevalence, high military expenditure, and participation in armed conflicts all have negative effects on index scores.

Armed conflicts in particular exacerbate hunger, quite apart from their impact on a country's macroeconomic performance. They have long-lasting negative effects on index scores that increase with the length of the war – as is made clear in the two case studies from Afghanistan and Sierra Leone presented in the second part of this report. Conflict prevention and resolution as well as rehabilitation

measures in the areas of agriculture, nutrition, and health after peace has been restored are therefore of critical importance. In a climate of peace and security, public resources that have previously been diverted to military spending can be used for necessary investments in the agricultural, health, and education sectors.

Agriculture can play a key role in fostering broad-based economic development and in improving food supply, especially in poor countries. Agricultural research and extension services should be significantly expanded and promoted in order to increase agricultural productivity. For Sub-Saharan Africa in particular, higher investments in rural infrastructure, water and land management, and communications and marketing are essential for feeding a growing population.

The improved provision of health and education services raises farmers' productivity, and also has further positive effects: if these services are actually accepted by the population, child malnutrition and child mortality are reduced. This strategy mostly includes educating the population about the benefits of health care and providing (financial) incentives to use the services offered.

A related aim is to increase school enrolment rates and create educational opportunities, particularly for girls. In regions like South Asia, women's low status in society is partially responsible for their lack of knowledge about adequate caring and feeding practices and for the high number of malnourished children. If the fight against the AIDS epidemic and its negative impact on hunger and undernutrition is to be successful, then appropriate knowledge, health interventions, and other forms of direct assistance for affected families are required.

The role of the government – from agriculture to business development and foreign policy – is crucial for improving the living conditions, working capacity, and incomes of hungry people. In developing countries, investments in the agriculture, health, and education sectors are vital and can produce high returns, if not counteracted by bad governance and military conflict.

## All countries in comparison

The Global Hunger Index in 119 countries

■ Armed conflicts between 1989 and 2003.
 ■ War between 1989 and 2003.

<sup>1</sup> North Korea. \* GHI scores contain preliminary estimates of the underweight prevalence in children under five years.  
 The 1997 GHI was used to rank Costa Rica, Libya, and Paraguay, because the 2003 GHI could not be calculated. Nine countries could not be included in the ranking due to lack of data: Afghanistan, Bahrain, Bhutan, Bulgaria, Iraq, Qatar, Oman, Papua New Guinea, and Somalia.

GHI Country rank	Global Hunger Index				GHI Country rank	Global Hunger Index					
	1981	1992	1997	2003		1981	1992	1997	2003		
1	Belarus	–	–	3.71	1.59*	61	Armenia	–	–	12.19	13.30
2	Argentina	2.87	1.97	2.93	1.81	62	Nicaragua	16.93	16.30	16.97	13.47
3	Chile	3.87	3.90	2.37	1.87	63	Uzbekistan	–	–	11.74	13.60
4	Ukraine	–	–	3.71	1.97	64	Honduras	20.73	16.40	16.97	14.03
5	Romania	–	3.92	2.36	2.07	65	Swaziland	–	11.17	14.00	14.87
6	Libya	6.37	4.67	2.40	–	66	Ghana	35.87	27.03	18.67	14.87
7	Tunisia	9.00	4.97	4.43	2.47	67	Mongolia	18.50	18.03	24.68	15.83
8	Cuba	4.63	5.80	7.62	2.57	68	Myanmar	25.20	19.27	15.53	16.17
9	Lithuania	–	–	2.47	2.64*	69	Sri Lanka	24.90	22.40	21.87	16.63
10	Croatia	–	–	3.84	2.72	70	Guatemala	24.73	17.27	17.70	16.87
11	Latvia	–	–	3.46	2.74*	71	Namibia	18.19	23.03	22.32	17.50
12	Uruguay	4.57	5.17	3.50	2.74	72	Philippines	22.40	21.77	19.63	17.55
13	Russian Federation	–	–	3.80	2.93	73	Benin	29.00	19.30	20.97	17.77
14	Fiji	–	–	5.97	3.07	74	Côte d'Ivoire	13.03	14.10	17.43	18.13
15	Slovakia	–	–	3.87	3.22*	75	Vietnam	32.20	25.90	22.37	18.37
16	Lebanon	8.67	5.63	3.23	3.28	76	Botswana	23.93	18.47	16.37	18.57
17	Costa Rica	5.63	3.30	3.50	–	77	Uganda	24.63	21.83	21.73	18.63
18	Kuwait	5.87	9.77	2.67	3.56	78	Gambia, The	–	20.23	21.97	18.83
19	Estonia	–	–	3.00	3.56*	79	Nigeria	30.00	22.47	20.90	19.17
20	Mauritius	14.07	8.40	7.73	3.80	80	Cameroon	18.20	19.80	21.17	19.52
21	Syrian Arab Rep.	8.77	7.13	6.73	4.23	81	Mauritania	30.30	27.60	17.43	20.03
22	Bosnia & Herzeg.	–	–	5.56	4.60	82	Senegal	20.17	18.87	19.90	20.13
23	Jordan	7.34	4.37	4.83	4.73	83	Korea, Dem. Rep. <sup>1</sup>	19.35	15.48	20.91	20.33
24	Serbia & Montenegro	–	–	2.29	4.77	84	Djibouti	–	32.09	24.45	20.90
25	Mexico	9.93	7.47	5.99	5.10	85	Togo	23.90	23.63	21.23	21.10
26	Egypt, Arab Rep.	13.63	6.77	7.00	5.17	86	Kenya	19.40	23.67	22.93	21.73
27	Jamaica	7.07	6.63	5.43	5.27	87	Guinea	27.00	28.53	24.64	21.73
28	Brazil	10.43	8.43	6.70	5.43	88	Pakistan	33.60	25.97	23.60	21.77
29	Saudi Arabia	8.97	6.80	7.40	5.44	89	Timor-Leste	–	–	–	22.29
30	Turkey	9.77	6.97	4.93	5.45	90	Zimbabwe	22.00	21.77	23.50	23.20
31	Iran, Islamic Rep.	12.00	8.87	5.80	5.80	91	Laos	29.53	25.70	26.73	23.83
32	Macedonia, FYR	–	–	6.50	5.93	92	Nepal	43.30	27.77	27.77	24.50
33	Paraguay	8.70	8.37	6.16	–	93	Haiti	34.63	34.93	33.23	25.33
34	Ecuador	13.70	10.07	7.73	6.22	94	Malawi	25.40	33.30	30.47	25.40
35	Moldova	–	–	6.93	6.32*	95	Sudan	23.47	26.17	22.80	25.67
36	Morocco	13.70	7.13	7.40	6.42	96	India	41.23	32.73	25.73	25.73
37	Algeria	13.83	7.00	7.57	6.50	97	Burkina Faso	40.27	21.87	22.87	25.80
38	Trinidad & Tobago	6.33	7.27	7.73	6.63	98	Guinea-Bissau	30.75	22.61	25.39	26.61
39	Albania	9.71	9.41	7.62	7.23	99	Rwanda	27.23	29.17	32.10	27.20
40	Colombia	11.53	9.67	8.13	7.27	100	Chad	42.17	36.40	35.87	27.33
41	Malaysia	12.67	10.10	7.73	7.57	101	Mali	41.43	25.27	31.97	28.07
42	South Africa	–	7.42	7.32	7.66	102	Bangladesh	44.40	36.33	35.73	28.27
43	Venezuela	6.13	6.17	7.93	7.83	103	Central African Rep.	31.63	33.20	30.50	28.43
44	Peru	19.23	19.63	10.80	7.83	104	Mozambique	41.57	47.00	34.97	28.83
45	Kazakhstan	–	–	4.96	8.17	105	Yemen	38.90	25.90	30.70	29.19
46	El Salvador	16.63	11.07	9.80	8.17	106	Madagascar	23.23	30.77	31.93	29.92
47	China	20.10	12.57	8.57	8.23	107	Tanzania	22.33	27.53	31.63	29.97
48	Kyrgyzstan	–	–	10.34	8.36	108	Tajikistan	–	–	19.86	30.25
49	Gabon	16.17	13.50	10.83	9.00	109	Cambodia	46.43	32.93	36.03	30.73
50	Suriname	–	–	9.39	9.37	110	Comoros	–	28.31	29.55	30.81
51	Guyana	–	15.10	12.83	9.83	111	Zambia	21.77	31.17	30.57	31.77
52	Azerbaijan	–	–	14.89	10.27	112	Liberia	22.10	25.27	30.66	32.00
53	Turkmenistan	–	–	11.40	10.40	113	Angola	27.13	40.83	38.17	32.17
54	Dominican Rep.	16.13	14.03	12.40	11.27	114	Niger	37.67	38.53	41.20	33.43
55	Georgia	–	–	9.17	11.53	115	Sierra Leone	31.10	34.37	33.70	35.20
56	Bolivia	18.73	17.13	14.07	11.57	116	Ethiopia	39.20	46.31	41.72	36.70
57	Panama	13.60	11.33	11.03	12.21	117	Congo, Dem. Rep.	25.80	25.37	35.07	37.60
58	Thailand	23.37	17.83	13.80	12.36	118	Eritrea	–	–	41.10	40.37
59	Indonesia	28.17	18.53	15.60	12.47	119	Burundi	27.73	32.27	39.71	42.70
60	Lesotho	18.87	16.13	14.57	12.80						

Source: IFPRI

## 2. | Global developments in Hunger

### 2.1 | Comparison of the countries ranked highest and lowest in the Index

When comparing all countries ranked by the Global Hunger Index on the basis of the most recent figures, Belarus tops the list with a positive GHI score of just 1.6, followed closely by Argentina, Chile, Ukraine, and Romania. In comparison, Burundi and Eritrea are at the bottom of the list, with more than 40 points each.

Nine of the 12 countries at the bottom of the list – Burundi, Eritrea, the Democratic Republic of Congo, Ethiopia, Sierra Leone, Angola, Liberia, Cambodia, and Tajikistan – share one common characteristic: the hunger and undernutrition in these countries are partly the consequence of long-lasting armed conflicts. Mozambique was also strongly affected by war until the early 1990s. Afghanistan remains unstable to this day, so usable data for the country do not exist.

Burundi's dismal GHI score of 42.7 is a direct result of 10 years of armed conflict, which has led to large population displacements within the country, and also of a weak economy dependent on subsistence agriculture and the cultivation of coffee and tea for export. Hunger has been growing in Burundi steadily since the beginning of the 1980s. A new IFPRI study highlights the desolate situation in Burundi: estimates of the proportion of the population with insufficient

dietary energy availability – based on representative data on household expenditures – show that Burundi ranks second to last of the 12 Sub-Saharan countries investigated in the study (Ethiopia being in last place).<sup>4</sup>

However, Niger, Zambia, and Comoros are also among the 12 lowest-ranked countries, according to the GHI, although they were not involved in wars between 1989 and 2003. In Niger, some minor armed conflicts involving nomadic sections of the population did occur between 1992 and 1997, but a more important factor may be that the country is part of the ecologically vulnerable Sahel zone, which has irregular rainfalls. In 2005 a protracted drought and a plague of locusts led to a dramatic famine, the consequences of which have not yet been captured by the current GHI. Comoros, on the other hand, has scarce natural resources, poor infrastructure, and is politically unstable. Since its independence in 1975, the country has witnessed frequent coups d'état or attempted coups d'état. And though Zambia was not directly involved in conflict, it was indirectly affected by the long-lasting civil wars in Angola and Mozambique because it accepted many refugees from those countries. Zambia also has one of the highest HIV prevalence rates in the world, at almost 17 percent.<sup>5</sup> The disease has ravaged the country's economic, political, and social development. In addition, Zambia has become more and more impoverished in recent decades and has become increasingly indebted due to the declining price of copper, its most important export commodity. However, economic reforms implemented in the 1990s may provide some new hope.

## 2.2 | Major regional differences

Sub-Saharan Africa and South Asia are hot spots of hunger and undernutrition, but countries such as Haiti in the Caribbean; Yemen in the Near East; Tajikistan in Central Asia; Laos, Cambodia, and East Timor in Southeast Asia; and the Democratic Republic of Korea in East Asia all have GHI scores greater than 20. Rampant poverty in these countries is the major cause of widespread hunger and high rates of child malnutrition and child mortality.

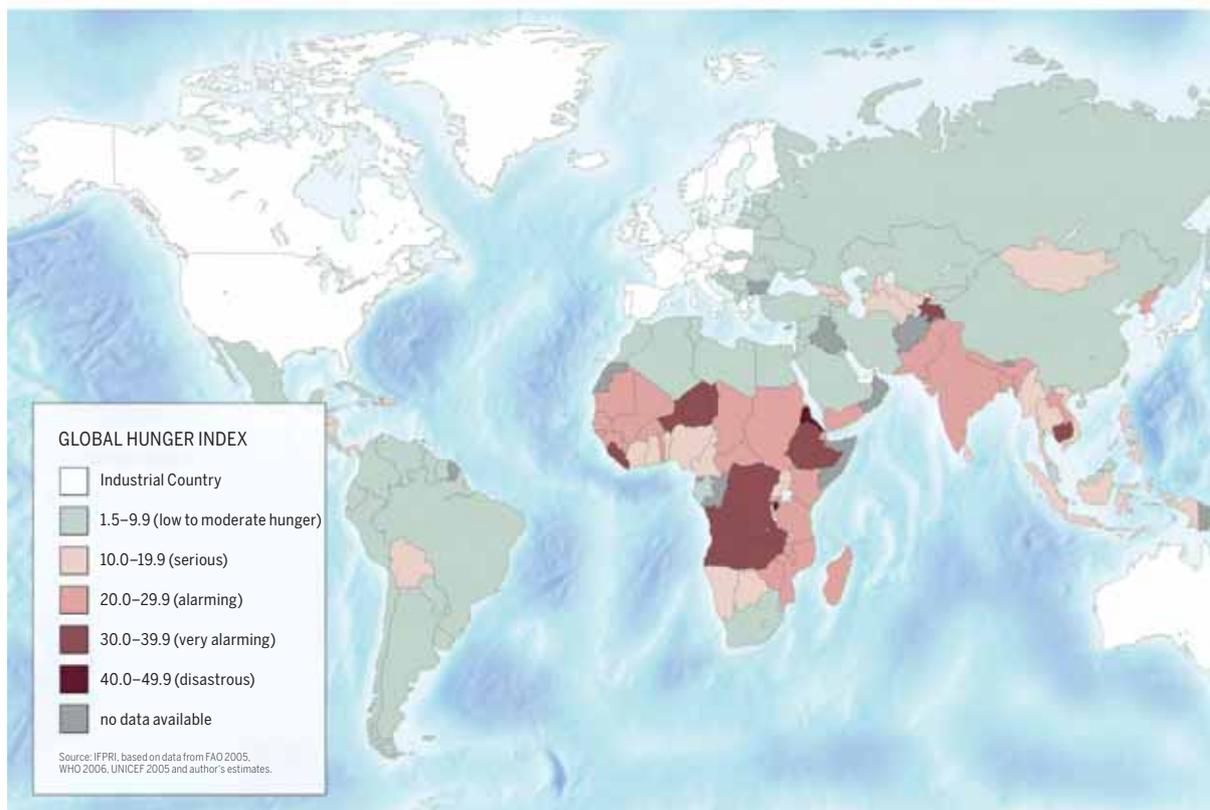
However, there has been some progress in combating hunger in the past decade: Ghana and Chad in West and Central Africa and large parts of the Andean region in South America were able to reduce their GHI scores considerably. The same is true for Ethio-

pia, Mozambique, and Angola, but all three countries still have alarmingly high scores. Positive trends can also be observed throughout most of South and Southeast Asia, particularly in India and China.

The Green Revolution – that is, the introduction in the 1960s of high-yielding rice and wheat varieties together with irrigation, fertilizer, and pesticides – partly explains the contrasting development paths of Sub-Saharan Africa and Asia. The Green Revolution was far more successful in Asia, where the new technologies were widely embraced, than in Africa, where they were not. Poor infrastructure, high transportation costs, insufficient investment in irrigation, and unfavourable pricing and marketing policies made the Green Revolution technologies too expensive or inappropriate for much of Africa. Consequently, cereal yields in Asia increased by 160 percent from 1961 to 1997, but only by 50 percent in Africa, which already had a lower initial level. Though its negative effects on the environment and mixed outcomes for smallholders were heavily criticized, the Green Re-

### World Hunger Map

Global Hunger Index 2003



volution nevertheless had a tangible positive impact: rapid agricultural growth in Asia boosted economic growth and public investment in rural areas, benefiting food security and nutrition. Through higher incomes and lower prices, people not only had more food at their disposal, but they also benefited from a more diversified, higher-quality diet with larger shares of fruits, vegetables, and animal products.

### 2.3 | Africa: A continent of stark contrast

A glance at the levels of hunger in the various regions of the world shows that Sub-Saharan Africa has the highest GHI score and therefore ranks lowest, closely followed by South Asia. Overall Sub-Saharan Africa made the most negligible progress of all the regions between 1981 and 2003. Despite having a relatively high average GHI score of about 28 in 1981, its score decreased by only 2.6 points in more than two decades. Hence, hunger remains a stark reality in all Sub-Saharan countries.

Declines in the proportion of undernourished and the under-five mortality rate by 6.4 and 3.5 percentage points, respectively, were partly outweighed by a rise in underweight prevalence in children by 2.1 percentage points. The negative trend of rising child malnutrition has also taken a turn for the better since 1997.

Yet Africa is a continent of extreme contrasts: while hunger has increased in Burundi, where the GHI score rose by about 15 points from 1981 to 2003, there has been considerable progress in Ghana, where the GHI score dropped by 21 points. In Ghana, the proportion of undernourished was reduced from 61 percent in 1979-81 to 13 percent in 2000-2002. This was the result of the introduction of new yam, maize, rice, and cassava varieties; a 25 percent increase in cropped areas; and rapid economic growth in other sectors. In addition, the population gained better access to education, health services and safe water during the same period. As a result, the under-five mortality rate fell from 15.7 percent in 1980 to 9.5 percent in 2003 and

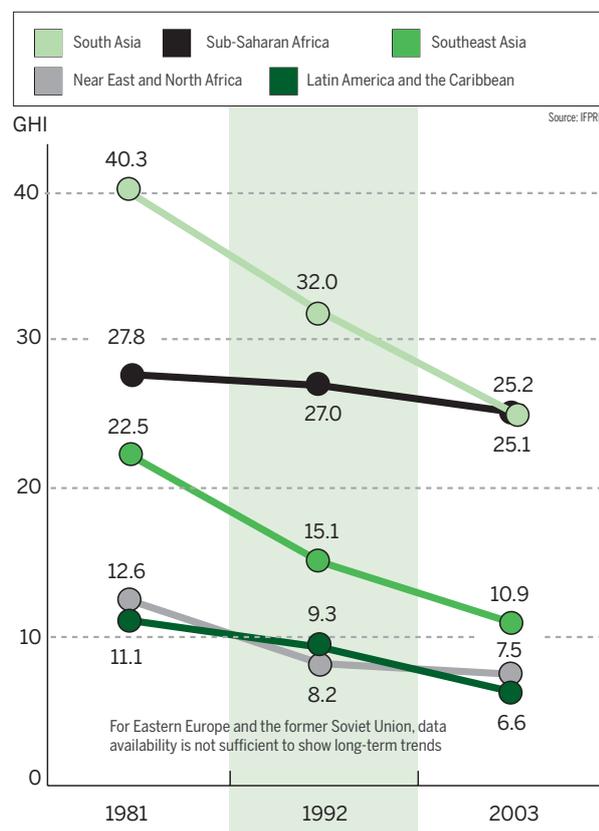
the prevalence of underweight in children decreased by about 9 percentage points. In several other West African countries, like Benin and Nigeria, hunger was also reduced considerably from 1981 to 2003.

In the same period, however, the GHI score in Liberia, Côte d'Ivoire, and Sierra Leone rose by about 10, 5, and 4 points, respectively. These three countries, were subject to political instability, ethnic conflicts, or civil wars during the 1990s. The Democratic Republic of Congo in southern Africa also belongs to this category of countries with rising hunger due to serious armed conflicts.

Mozambique, on the other hand, is gradually recovering from the consequences of a 15-year war that ended in 1992. The considerable reduction in the GHI score for Mozambique is based on declines in all three index components. Negative GHI trends were also reversed in two other post-conflict countries in the 1990s: Angola and Ethiopia.

#### Hunger on the decline

Regional GHI trends 1981-2003



## 2.4 | Asia: Concern over North Korea

In contrast to the sluggish overall trends in Sub-Saharan Africa, South Asia and Southeast Asia made great strides in combating hunger from 1981 to 2003. Starting with the highest regional GHI score of about 40 in 1981, South Asia's score fell below that of Sub-Saharan Africa by 2003. Notable reductions in the proportion of undernourished in the population (about 16 percentage points), underweight prevalence in children (about 21 percentage points), and child mortality (about 9 percentage points) led to a large decrease of 15.2 GHI points during this period. Southeast Asia already had a considerably lower GHI score than South Asia, but nonetheless reduced it from about 23 to 11.6 points from 1981 to 2003: undernourishment in the total population dropped by 17 percentage points, underweight prevalence in children fell by 14 percentage points, and the under-five-mortality rate dropped by 4 percentage points.

North Korea is the only country in the regional ranking not in step with these favourable developments; between 1981 and 2003, hunger increased there. However, the Asian country with the greatest GHI increase must certainly be Afghanistan, a country that has been ravaged by civil war for decades, although data are not available to confirm this hypothesis.<sup>6</sup>

China and India, the population giants in East Asia and South Asia, made large contributions to the overall very positive trends in these two regions. Between 1961 and 1997, cereal yields quadrupled in China and more than doubled in India, while the proportion of undernourished was reduced in both countries. Moreover, the two economies grew at impressive rates: in China, Gross National Income per capita<sup>7</sup> increased almost sixfold from 1980 to 2003, and more than doubled in India.

The proportion of the population with access to safe water was already high in China in the early 1980s (86 percent), and increased notably in India by the 1990s (from 54 percent to 81 percent). Underweight in children was reduced by about 13 percentage points in China and by more than 20 percentage points in India,

whereas the under-five mortality rate was cut back by more than 40 percent in China and was halved in India from 1981 to 2003.

## 2.5 | The Near East and North Africa: Poor scores for Yemen

In the Near East and North Africa, the GHI was already low in 1981, but fell almost 5 more points by 2003. The largest drop occurred between the beginning of the 1980s and the early 1990s, with smaller declines accruing afterward. In contrast to Southeast Asia, a decrease in child mortality primarily contributed to this positive change: the under-five mortality rate dropped by about 9 percentage points from 1981 to 2003. In 1981, food availability was already at a high level, which is why the proportion of undernourished was only about 8 percent at the time. Nonetheless, the proportion of undernourished decreased by 2 more percentage points by 2003, while underweight prevalence in children was reduced by almost 5 percentage points. However, Iraq was not included in these calculations<sup>8</sup>. In addition, Yemen is lagging behind all other countries in this region: its GHI score is more than 20 points higher than the score of other countries in the Near East and North Africa. Moreover, the country shows an inconsistent trend over the 1981-2003 period. The war between Kuwait and Iraq is reflected in the increase of hunger in Kuwait in the beginning of the 1990s. However, the transient shortfalls in food supply that resulted from this interstate conflict and that drove the rise in the 1992 GHI could be overcome relatively quickly.

## 2.6 | Latin America: Slow progress

In Latin America and the Caribbean, there was sustained but slow progress from 1981 to 2003: its

GHI declined by 4.6 points from a starting point of 11.1 in 1981. In the same period, the proportion of undernourished, the prevalence of underweight in children, and the child mortality rate have fallen slowly – by about 2, 6, and 5 percentage points, respectively. The pattern of change is therefore similar to that of the Near East and North Africa, but with a smaller reduction in child mortality.

The Green Revolution was also successfully applied in Latin America, and contributed to improved food supplies and rising incomes. On average, there is more hunger in Central America and the Caribbean than in South America, but the situation improved for all countries in this subregion from 1981 to 2003.

Only Haiti is still lagging behind, although more recently it, too, has been catching up. The GHI stagnated in the 1980s and the 1990s, but despite political turmoil and violent conflict in recent years, the GHI decreased by almost 8 points from 1997 to 2003. This positive decline in the index was based on reductions in all three components. Considerable progress is also noted for Peru, El Salvador, Guatemala, Ecuador, and Bolivia: the GHI score in these countries decreased by more than 7 points between 1981 and 2003. However, a slightly negative trend indicating rising hunger has been observed in Venezuela.

## 2.7 | The East: Central Asia and the Caucasus face difficulties

A lack of data for the 1980s and early 1990s prevents the observation of long-term trends in Eastern Europe and the former Soviet Union. Most of these nation states came into existence after the dissolution of the Soviet Union or after the Balkan War in the 1990s. GHI scores for 1997 and 2003 suggest a very minor improvement in this period. However, the region received a GHI score of 6 in 2003, the lowest among all regions considered.

The five Central Asian countries (Tajikistan, Uzbekistan, Turkmenistan, the Kyrgyz Republic, and

Kazakhstan) and the three countries affected by the Caucasus conflict (Armenia, Georgia, and Azerbaijan) had more hunger in 2003 than the Eastern European countries listed in the ranking. The dramatic rise between 1997 and 2003 in the GHI score of civil war-ridden Tajikistan stands out. Dietary energy supply fell from 2180 to 1800 kcal per capita between 1995-97 and 2000-2002, while the proportion of undernourished concomitantly rose by more than 30 percentage points and the under-five mortality rate increased by more than 4 percentage points from 1997 to 2002.<sup>9</sup>

## 2.8 | GHI components show strong regional differences

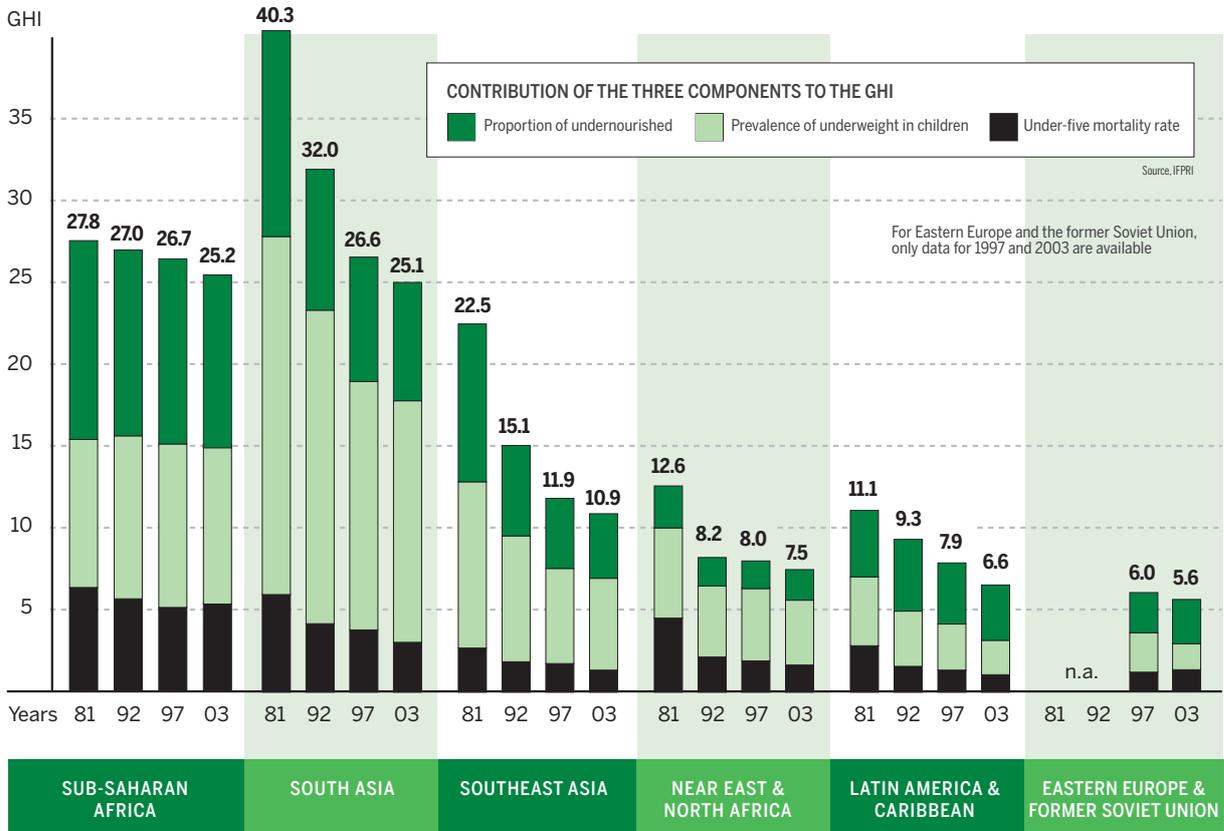
There are considerable variations in the causes and manifestations of hunger in the individual regions – a fact that is illustrated by the different contributions the three GHI indicators make to each region's average score: in South Asia, for example, underweight prevalence in children is relatively high, whereas in Sub-Saharan Africa, child mortality and undernourishment in the total population play a larger role.

Even if the two regions' current GHI scores are similar, they are nonetheless the outcome of different determinants and development processes. Thus, the main cause of child undernutrition in South Asia is inadequate feeding and caring practices, which are the result of the low status and low education of many South Asian women. In Africa, however, droughts, armed conflict, and life-threatening infectious diseases play a far greater role than in Asia. They are primarily responsible for food scarcity and the high child mortality rate. This comparison shows how the Global Hunger Index captures a more comprehensive picture of food security and nutrition derived from more causal factors than any of the three single indicators in isolation.

A comparison of GHI components in the Near East and North Africa (NENA) on the one hand, and in Latin America and the Caribbean on the other, pro-

### Great progress in Asia—but still high levels of underweight in children

Contribution of the three components to the Global Hunger Index



vides another interesting example: although each region has a 2003 GHI score of about 7, underweight in children is the main problem in the Near East and North Africa, whereas undernourishment in the total population is the primary concern in Latin America and the Caribbean. The cause of underweight in children in the NENA region is again the low status of women, especially with regard to access to education

and training. Research has shown that this is one of the main determinants of underweight in children<sup>10</sup>. In contrast, in Eastern Europe and the countries of the former Soviet Union, where women enjoy comparatively higher levels of education and have high participation rates in the labour force, the prevalence of underweight in children is lower than the proportion of undernourished in the population.

# 3. | The causes of hunger are diverse

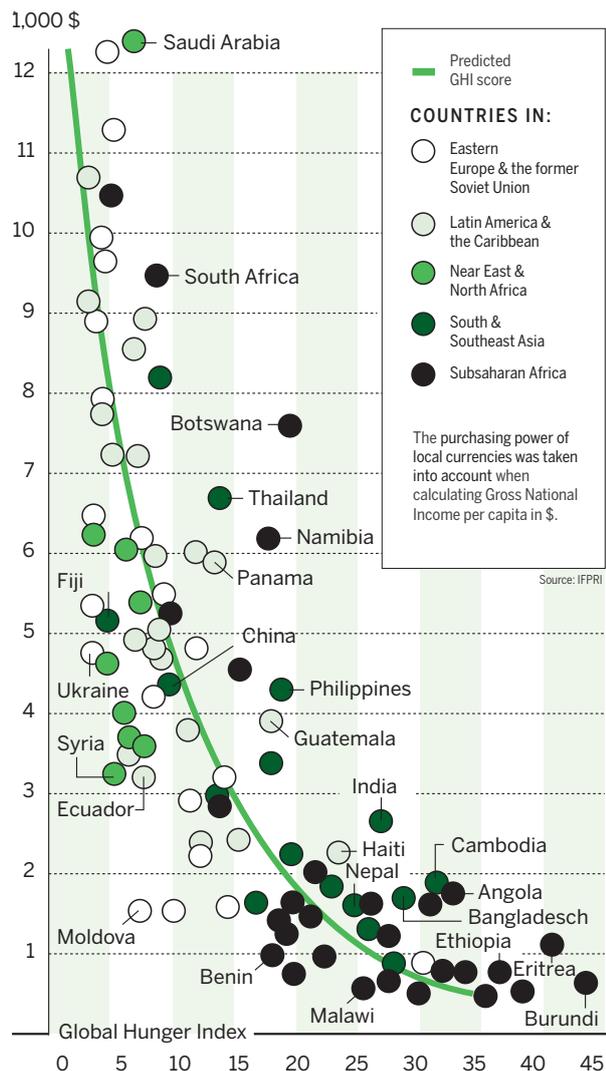
## 3.1 | Economic performance is not always the decisive factor

Gross National Income (GNI) is an important indicator for macroeconomic performance and plays a central role in food security. A range of goods and services are required to provide households with sufficient food and ensure basic education and a functioning health care system. These goods and services have to be produced domestically or be imported. Gross National Income per capita is used here to assess the GHI scores for 2003 relative to a country's economic performance. This scatter plot shows a clear association between the two indicators: poor countries tend to have poor (high) GHI scores.

The graph also denotes the countries that have better GHI scores than would be expected on the basis of their GNI per capita. They are located below the green line on the graph. Conversely, there are also numerous countries that have a considerably worse GHI score than their level of economic development would suggest, leading to questions about how effectively available economic resources in those countries are being used for improving food security and nutrition.<sup>11</sup>

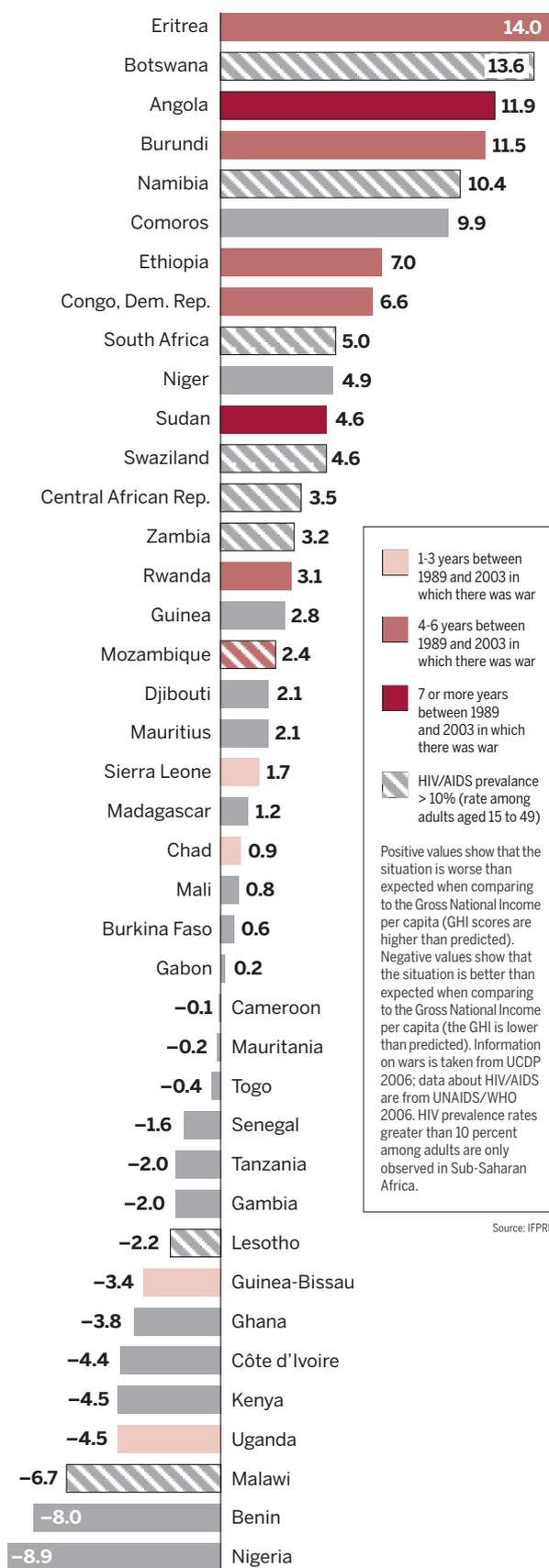
### Anomalies in predicted GHI scores

Actual and predicted GHI scores for 2003 in comparison with Gross National Income (in thousands of \$) per capita per year.



### War, AIDS and hunger in Africa

The differences between actual and predicted GHI scores in Sub-Saharan Africa.



### Sub-Saharan Africa

In Sub-Saharan Africa there are many countries that have considerably worse GHI scores than would be expected according to their GNI per capita: this applies in particular to Namibia, Angola, and Botswana, but also to Burundi, Comoros, Eritrea, Ethiopia, and the Democratic Republic of Congo. Political instability in Comoros and the consequences of (civil) wars in Angola, Burundi, Eritrea, Ethiopia, and the Democratic Republic of Congo have already been discussed as causes of hunger. However, in Namibia and Botswana, which are middle-income countries, high income inequality and very high HIV infection rates account for the relatively bad scores. Botswana has achieved impressive economic growth thanks to its export trade in diamonds (which accounts for about 30 percent of total Gross Domestic Product (GDP)), tourism, and the corresponding investments made in the last decades. At the same time, the poverty rate has remained high because large parts of the population do not benefit from growth. The situation is similar in Namibia where the mining sector – especially diamond extraction and processing – accounts for 20 percent of the country’s GDP but only employs about 3 percent of the population. Around half of the national cereal requirement has to be imported, and in drought years food shortages occur in rural areas.

Benin and Malawi, however, have more favourable GHI scores than expected. Agriculture has been a driving force in Benin’s economic growth in the last decades: the yields of the most important staple foods doubled between 1970 and 1997, the area under cultivation was expanded, and total food supply was considerably increased. This shows the benefits of a broad-based growth model that is initially founded on agriculture: Despite Benin’s considerably lower per capita income, Benin’s GHI score is lower than that of Botswana.

### South and Southeast Asia

In Asia, the high GHI scores in Cambodia, India, and Bangladesh relative to the GNI per capita are striking. Whereas Cambodia is still suffering from

the aftermath of long-term conflicts that lasted until 1998, India and Bangladesh's poor performance is the result of a high prevalence of child malnutrition due to the low status of women in the region, adverse culturally ingrained food habits, and a lack of knowledge. Many women in Bangladesh, for example, believe that they should eat less during pregnancy. As a consequence, a third of all children in Bangladesh are already underweight at birth. Furthermore, the extremely high population density in this country make any further extension of land under cultivation impossible. Consequently, cereal production can hardly keep pace with rapid population growth despite increases in yield.

### The Near East and North Africa

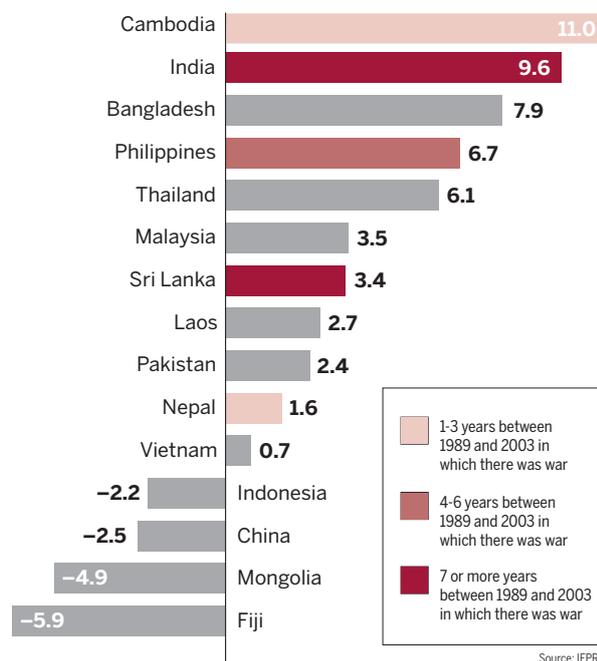
The majority of countries in the Near East and North Africa performed comparatively well, particularly Egypt and Syria. Relatively equal income distributions within the countries play an important role. On top of that, Egypt massively subsidises the most important staple foods. This means that even the poorer segments of the population have access to sufficient food. This subsidy policy, however, also has a reverse side: widespread overnutrition due to excessively high calorie consumption.

### Latin America and the Caribbean

In Latin America and the Caribbean, Ecuador and Jamaica are special cases with relatively low (and therefore favourable) GHI scores. Income distribution also plays an important role in this region: it is relatively equal in Jamaica, but is very unequal in Guatemala. Panama, Guatemala, and Haiti are negative examples with a high GHI score relative to GNI per capita: Haiti's is the result of a long history of political crises and bad governance during which the elite enriched itself at the expense of the rest of the population. Deforestation, soil erosion, and unsuitable farming methods are also major obstacles to agriculture in Haiti, which have negative consequences for food availability. Furthermore, in comparison with other countries with a low per capita income, Haiti has an extremely poor health and education infrastructure.

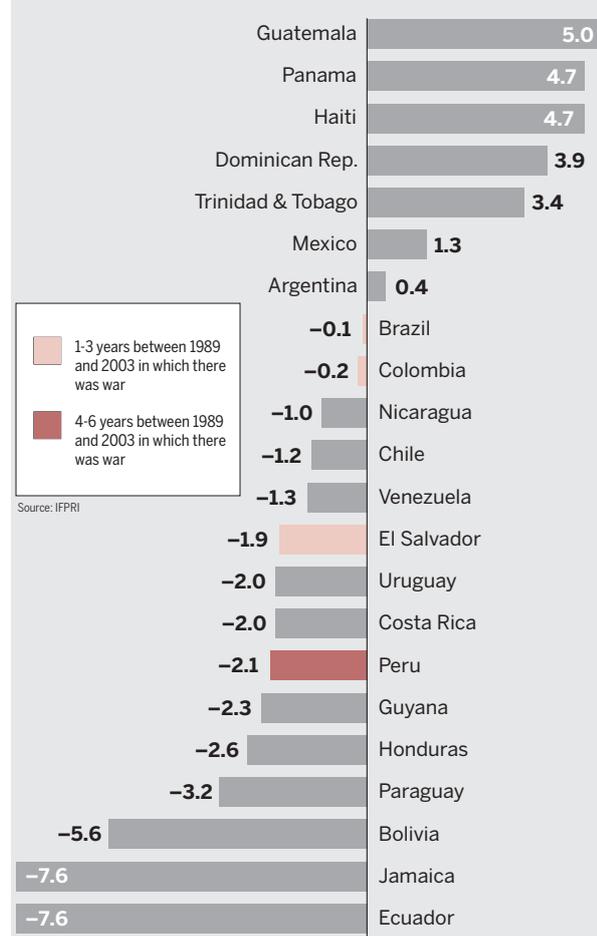
### Social discrimination against women

The differences between actual and predicted GHI scores in South Asia and Southeast Asia



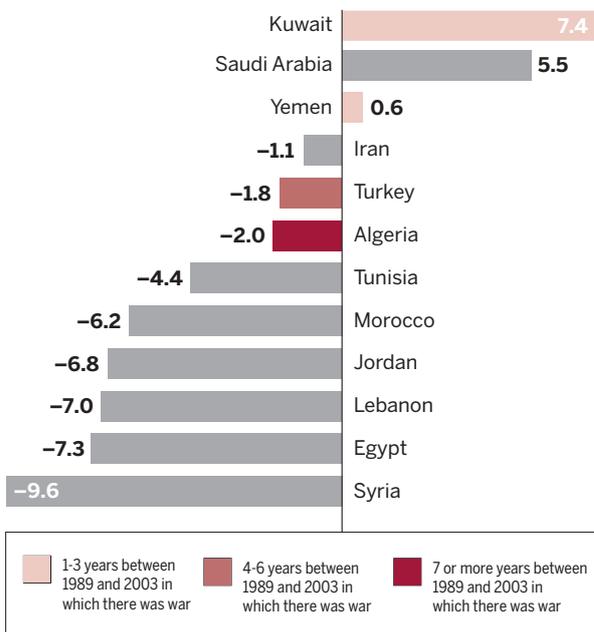
### Hunger and income inequality

The differences between actual and predicted GHI scores in Latin America and the Caribbean



### Subsidies in Egypt

The differences between actual and predicted GHI scores in the Near East and North Africa

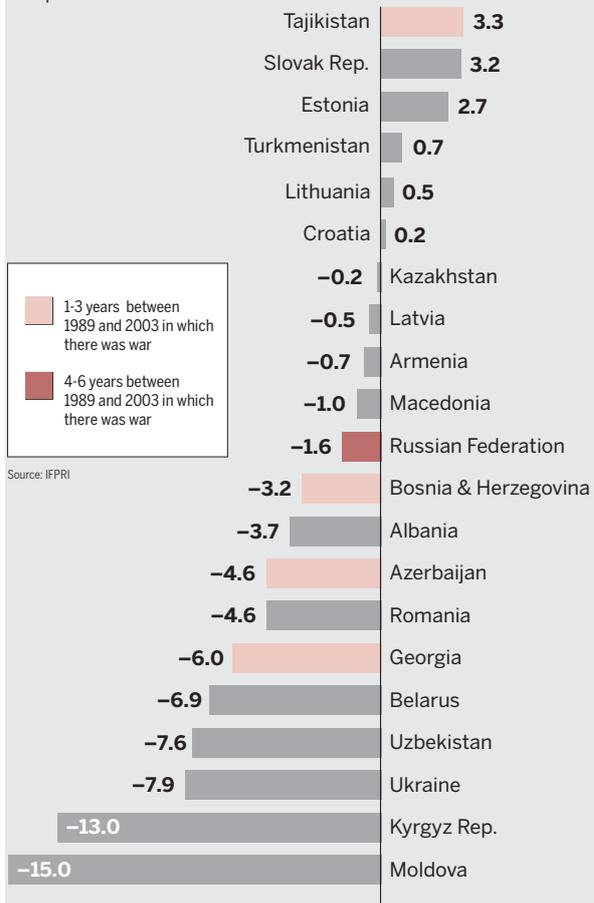


### Eastern Europe and former Soviet Union

When taking Gross National Income per capita into account, the GHI score of several countries in Eastern Europe and the former Soviet Union – Moldova, Kyrgyzstan, Ukraine, and Uzbekistan – is amazingly low. The economic situation in many transition countries deteriorated for a number of years after the disintegration of the Eastern Bloc, but high levels of education, the existing infrastructure, prior investments in the health care system, and home-gardening on private plots prevented large rises in child malnutrition and child mortality. Income inequality has increased during the economic transition but is still low in most countries with a socialist legacy and contributes to favourable GHI scores relative to GNI per capita.<sup>12</sup> This raises questions as to what extent factors other than national income are responsible for causing hunger and undernutrition.

### Hunger in Eastern Europe and the former Soviet Union

The differences between actual and predicted GHI scores in Eastern Europe and the former Soviet Union



### 3.2 | The spread of HIV and AIDS has negative consequences

The spread of AIDS has huge effects on agricultural production and household food security. In Sub-Saharan Africa alone, there are more than 12 million AIDS orphans. Given the high death and disease toll due to AIDS, the effect on some countries is critical: traditional kinship networks reach the limits of their capacity in providing care for orphans and the sick. The risk of infection is particularly high for women and girls due to biological reasons and especially because their weak position in society often makes it difficult for them to refuse unprotected sexual contact. If they become sick from AIDS, they can no longer carry out their role as pivotal caregivers for children and sick family members. Full-blown AIDS is usually accompanied by progressive wasting and favours the spread of other contagious diseases like tuberculosis. With a mother-to-child transmission rate of between 25 percent and 35 percent, HIV is contributing substantially to increasing infant and child mortality rates in those Sub-Saharan countries most affected by AIDS.

In 2003, the highest HIV prevalence rates in adults were found in Botswana and Swaziland (24 and 32 percent, respectively). Prevalence rates greater than 5 percent are limited to Sub-Saharan African countries. In the graph focusing on Africa, countries with HIV prevalence rates higher than 10 percent are marked by the striped bars. With the exception of Comoros and Niger, all Sub-Saharan African countries with GHI scores that exceed the predicted GHI score by more than 3 points were either engaged in warfare between 1989 and 2003 or have HIV prevalence rates greater than 10 percent.

Taking into account the variation in GNI per capita by means of statistical techniques, it turns out that the Global Hunger Index is 3.9 points higher in countries with an HIV prevalence rate greater than 10 percent than it is in countries with lower infection rates. This can be attributed to significant differences in the proportion of undernourished and the under-five mortality rate (+7.1 and +4.1 percentage points respectively). This result highlights the necessity of fighting the AIDS pandemic much more effectively in order to achieve long-term food security in the affected countries.

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### 3.3 | War and armed conflict cause hunger

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War and armed conflict usually have severe consequences for food security, nutrition, and the health of the population as a whole. Combatants frequently use hunger as a weapon: they use siege tactics to cut off food supplies and productive capacities, starve opposing populations into submission, and hijack food aid intended for civilians.<sup>13</sup> There are large production shortfalls – especially in agriculture – when markets are disrupted; when crops, roads, and land are destroyed; and when livestock are killed. In addition, supplies of fertilizer and machinery dwindle and there are hardly any economic incentives for farmers in times of war.

Killings and displacement, which are a daily reality during war, have negative consequences on the agricultural labour force. Instead of working in the fields, young men are either recruited for combat or go into hiding during the day. Refugees are also unable to provide for themselves, and often have to be supported with emergency relief under difficult conditions. Rising prices, mounting unemployment, and income losses lead to a declining demand for food in the market.

The disastrous effects of violent conflict on food security, however, do not always show up in GNI statistics. If, for example, a war economy is booming through trade in diamonds or oil, macroeconomic statistics can disguise the collapse of agriculture and resulting shortfalls in the population's food supply.

When a large portion of the population is displaced, the result is a dissolution of families, communities, and social networks. Children in particular suffer since they are largely dependent upon adult caregivers. Many lose their families, becoming orphans overnight, and are additionally traumatised by subsequent human rights violations.<sup>14</sup> Schools are also destroyed, thereby thwarting the education of an entire generation. The health environment – the third main determinant of children's nutritional status and survival chances – also deteriorates. Due to the systematic destruction of health-care facilities – as occurred in Liberia, Mozambique and Sierra Leone – a high level of malnutrition, disease, and high mortality rates often prevail even after warfare has ceased.

This situation often leads to the outbreak of new conflicts as the populace fights over scarce resources essential for survival. In refugee camps, displaced people are frequently subject to overcrowding, poor sanitary conditions, and inadequate food supplies. Under such conditions, infectious diseases, including HIV and AIDS, can easily spread.

The charts on pages 20-22 support the fact that wars have a direct negative impact on food security and nutrition apart from their effect on the economy: countries in conflict or post-conflict often have much worse GHI scores relative to GNI per capita than do non-conflict countries.

Classifying countries by the number of years between 1989 and 2003 in which there was war does not adequately reflect the severity of the conflict, its geographical scale, or its effects on the population. Yet by looking at the example of Sub-Saharan Africa, it becomes evident that almost all countries with poor GHI scores relative to GNI per capita are still in the middle of civil war or are trying to recover from many years of conflict. Bad governance often accompanies armed conflicts and aggravates the already desolate situation.

Taking into consideration the variation of GNI per capita among countries, the GHI is 3.8 points higher in countries that were involved in warfare between 1989 and 2003 than in non-war countries.<sup>15</sup> A higher proportion of undernourished and a higher prevalence of underweight in children in war countries (+6.9 and +4.2 percentage points, respectively, considering the statistical differences in GNI per capita) are responsible for this result, while no significant difference is observed with regard to the under-five mortality rate. Child mortality, however, is affected by the AIDS pandemic, as already mentioned.

Although daily life in each conflict or post-conflict country has its own unique characteristics stemming from cultural practices, climatic conditions, and security issues among other factors, the following accounts from people in Afghanistan and Sierra Leone, reveal that the core problems they face differ very little. The following case studies from post-war countries in the Hindu Kush and West Africa show how different people attempt to carry on with their daily lives while under crisis situations, and demonstrates how they can be supported on the way to securing their livelihoods.

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<sup>1</sup> More detailed background information on the current methods of measuring hunger is provided in the Appendix.

<sup>2</sup> These theoretically extreme scores are not achieved in reality. See Appendix for an explanation.

<sup>3</sup> The following selection criteria for countries were applied: the GHI was not calculated for countries with a dietary energy supply per capita higher than 2900 kcal (average for 1995-97) and an under-five mortality rate under 1.5 percent (15 per 1000 live births) in 1997. Exceptions to this rule are Kuwait, Malaysia, and Slovakia which, due to special characteristics, were included in the calculation. For a more detailed description of the rationale behind the selection criteria, see Wiesmann 2004.

<sup>4</sup> Smith et al. 2006.

<sup>5</sup> UNAIDS/WHO 2006

<sup>6</sup> According to earlier data used in the Nutrition Index (the predecessor of the Global Hunger Index), Afghanistan's situation worsened dramatically in the 1980s and the 1990s (see Wiesmann 2004). Several factors, most of which are associated with continuous warfare, contributed to the country's desperate situation in 1997: between 1980 and 1996 the population grew by 25 percent, partly through the return of refugees. Cereal production fell slightly, because more than 40 percent of arable land in Afghanistan is mined and cannot be farmed. The war-affected economy was unable to generate imports to fill the gap. The prevalence of underweight in children was estimated to be at around 21 percent in 1980 and amounted to almost 50 percent in 1997 (see page 56 in the Appendix). Women, the main caregivers of children who are especially susceptible to nutritional deficiencies, were deprived of their rights and opportunities by the war and by rigid legislation and cultural practices – particularly after the Taliban seized power in 1996. In 1997, 50 percent of men and 81 percent of women were illiterate, and 2 percent of the population had become casualties of landmines.

<sup>7</sup> In international dollars, taking the purchasing power of local currencies into account.

<sup>8</sup> In 2005 FAO did not publish any new estimates of the proportion of undernourished in Iraq and also withdrew all past figures on dietary energy supply per capita. Therefore, no GHI scores could be calculated for this country, which comprises about 6 percent of the population of the Near East and North Africa (NENA) region. Because the under-five mortality rate increased by 4.3 percentage points in Iraq from 1981 to 2003, and the underweight prevalence in children by about 1.4 percentage points in the same period, the current trends for the NENA region would probably be slightly less favourable if Iraq had been included.

<sup>9</sup> A detailed account of GHI trends in subregions between 1981 and 2003 is available in the Appendix.

<sup>10</sup> Smith and Haddad 2000.

<sup>11</sup> Of course the willingness and ability of countries to use economic resources to reduce hunger is not the only explanation for the divergences between the actual and predicted GHI scores. The differences also result from inevitable errors in the data and random deviations, and minor deviations should thus not be overstated.

<sup>12</sup> The reliability of statistics on national accounts in these countries must, however, be called into question.

<sup>13</sup> Messer et al. 2001.

<sup>14</sup> Recent studies point out severe psychiatric disorders in war refugees: a study of Cambodian refugees shows that 68 percent suffered from acute clinical depression and 37 percent from post-traumatic stress disorder (Mollica 2000).

<sup>15</sup> This result was obtained by means of a regression analysis that includes the logarithm of GNI per capita, and is statistically significant. For a more systematic econometric analysis of the effects of war and the duration of war on hunger and undernutrition, see Wiesmann 2004.



Hunger is not the only outcome of war and armed conflict: marauding child soldiers threaten the population, mines claim numerous victims, and people are often displaced from their homeland, sometimes spending years in refugee camps.





Since the end of the war, organising daily life in Sierra Leone and Afghanistan has taken considerable effort. People are making the most of it.



## 4. | After the war: People in Afghanistan and Sierra Leone make a fresh start

Lioba Weingärtner and Iris Schöninger

**AFGHANISTAN AND SIERRA LEONE** are two countries with a typical history of being devastated by years of civil war where the GHI is consequently very high, although due to the lack of data, the GHI in Afghanistan is not even calculable any longer. Hunger and malnutrition – sometimes in hidden forms – are a part of daily life for most of the population. Roads and schools have been destroyed in many regions and are only slowly being rebuilt. Clean water and basic health care are in short supply almost everywhere. Furthermore, in contrast to Sierra Leone, security in Afghanistan is now deteriorating, despite the presence of an international peace-keeping force, and reconstruction is slow.

Welthungerhilfe is active in both countries, supporting the poverty-stricken population in a number of projects. The main objective is to help people help themselves, thus enabling them to provide for themselves on a long-term basis. This can be made possible through a consistent linkage of concrete relief measures – like the provision of food, farming implements or seeds for refugees – and the reconstruction of destroyed infrastructure (i.e. bridges or schools) as well as the establishment of self-help groups with the aim of generating income.

Welthungerhilfe provides help from one set of hands – a philosophy which is very much a driving force behind the organisation's work in former war zones and crisis regions. We link relief, rehabilitation and development. An important aspect of this is capacity building, involving the training and guidance of new self-help groups, i.e. groups who develop new sources of income with the aid of small loans, or smallholders in eastern Afghanistan who receive help in producing roses for oil extraction as a financial alternative to growing opium poppies. Such programmes, however, call for considerable staying power: as a result of war and displacement, entire generations have never been to school and most traditional civic structures are devastated. The following reports from Afghanistan and Sierra Leone provide examples of people's lifestyle in both post-conflict countries and describe the way they can be supported in returning to a self-determined daily life. For this purpose in May and June 2006, members of Welthungerhilfe's staff interviewed men and women who are involved in the organisation's food security projects in the province of Nangahar in Afghanistan and in the districts of Bo and Kenema in Sierra Leone.

## 5. | Afghanistan between war and peace

### 5.1 | Reconstruction is overshadowed by conflicts

Even before the outbreak of civil war in 1979, Afghanistan was one of the world's poorest countries. Twenty years of conflict has not made the situation any better. Although little reliable data on Afghanistan is available because of this, the UN Development Programme (UNDP) ascertained that population's development status was worse at the turn of the millennium than in the early 1990s.<sup>1</sup>

In addition to aspects of economic and social underdevelopment (a devastated infrastructure, insufficient health care services, a lack of schools, clean drinking water and sources of income), the weak government also has to deal with an increasingly precarious security situation due to activities of the militant Taliban and a booming drug business.<sup>2</sup> Central government carries little clout in the provinces, while at the same time there are huge tensions within the Afghan population itself due to religious, ethnic and regional conflicts of interest. Former warlords are still in power in several parts of the country or have been able to secure themselves posts in the administration and government.<sup>3</sup> Inequality within the population is growing. Those most affected are:

- **The poor:** In comparison with the wealthiest 20% of the population, the poorest 20% spend four times as much on food in proportion to their income.
- **Children:** They suffer at the hands of poverty and the impact of violence during war.
- **Women:** Sexual discrimination experienced by women in Afghanistan is rife, especially in the fields of health care, education and access to and control of resources (i.e. land, loans, advice, employment and income) and in political participation.

Although farming is a vital source of both food and income for 80 to 90% of the population, depending on the region, yield is simply not enough for families to survive on. Land mines still present a major problem to farming land. It is estimated that 70 to 80% of the 24 million people in Afghanistan are currently living below the poverty line.

In Afghanistan

- 62% of the population lacked sufficient food during the second half of the 1990s (more up to date data is not available) and were therefore unable to cover their minimum dietary energy requirements
- in 1997, 49% of children under the age of five were underweight (no current data available) and
- in 2003, 257 in 1000 live births died before the age of five.<sup>4</sup>

Currently available data shows that 20% of Afghans living in rural areas are chronically undernourished and a further 18% are on the threshold. Nutrition is largely based on wheat bread and provides little variety. Almost 40% of children under the age of three are underweight, and more than half the children suffer from growth retardation (a result of chronic malnutrition and general poverty).<sup>5</sup>

After more than 20 years of war, the Afghan people have gone through a period of relative stability in more recent times, bringing with it hope for peace, security and development. Due to the considerable financial commitment of the international community, the situation in Afghanistan has improved, and the presidential elections in October 2004 and the parliamentary elections in September 2005 were key milestones in the peace process. However, this process seems increasingly jeopardised by a number of

### Afghanistan in short

- Average life expectancy: 44.5 years
- One in five children dies before the age of five
- Every half hour a woman dies from pregnancy-related problems
- Literacy rate: 34 %, amongst women only 18%.

negative factors: the growing presence of the Taliban in the south and south-east of the country, the control of entire regions by warlords and drug barons, a large rural-city-disparity and widespread tribal thinking. The not always uncontroversial interventions by international peacekeeping forces and relief organisations also contribute to a polarisation in the already tense situation.<sup>6</sup>

In view of these extremely difficult conditions, the government's current agenda is certainly a move in the right direction, yet many observers are doubtful whether its goals will be accomplished. In addition to good governance, the rule of law and the protection of human rights, economic and social development is one of the three key areas of collaboration between the Afghan government and international partners. Economic and social development should be stimulated by investments in the following areas:

- infrastructure and natural resources,
- education,
- health care,
- farming and rural development,
- social security,
- economic development and supporting the private sector.<sup>7</sup>

## 5.2 | Each day is a struggle against hunger and poverty

What do decades of war and the resulting lack of prospects mean for the individual person? What aspects of people's lives change concretely as a consequence and how do they perceive their new living conditions? The answers given to these questions by women, men and Afghan colleagues at Welthungerhilfe in the eastern Afghan province of Nangahar confirm conclusions drawn from current data collections about the country's situation.<sup>8</sup>

Most Afghan households rely on a variety of income sources, many in the field of agricultural and other income-generating activities. Farmland is scarce, and it's mainly the poor who are forced to piece together their livelihood from various sources: *"I earn a bit of money cutting wood in the mountains,"* explains the 22-year-old farmer Moghadin from Pecha in the Achin district. He owns a plot of land (20m<sup>2</sup>) the size of a room. *"Whenever I sell wood on the market, I buy food with the money."* There is also a shortage of irrigation systems, trek oxen and seed.

Thus relocation within Afghanistan or migration abroad are key strategies for many families in the fight for survival. *"One of my sons works in Pakistan on a building site, the other in Kabul,"* explains Hazrat Pacha, an almost 70-year-old man from the village of Lokhai. *"They send us money. It saves us from destitution and means we can just about get by."*

A major problem, particularly for many remote villages in Afghanistan, is transport. Even if there are markets, medical centres or schools, access to them is extremely limited: *"The next hospital is in Bar Nazian,"*

explains Sarmatschana, a 67-year-old woman from Mullakhel in the Nazian district. *“That’s a long way away. You can rent a car, then it’s about an hour and a half’s drive. We’ve never done that because it’s too far. We try to use our own remedies.”* Many households are in debt, and debt is in turn a primary determinant of poverty. Illness is often the hidden cause behind deficient income and debt. Loans are often used to purchase food and medicine.

The availability of drinking water and water for farming poses problems throughout the country. *“We get our drinking water from the wells in the mountains. It’s about an hour’s walk. We don’t have much water for the fields, which makes us completely reliant on rainfall and melting snow in spring. We desperately need a way of storing*

*bread. We had green tea and bread for breakfast. Yesterday we had milk with water, sugar and bread at lunch and in the evening we had a bit of rice with chickpeas,”* recalls Rahabza, who is amongst the poorest in her village. What’s more, restrictions on women’s rights start at a very early age - even in the case of feeding in infancy: *“I always breastfed my children for two years,”* says Tanadara, a 50-year-old mother of seven and wife of Hazrat Pacha from Lokhai. *“After six months I bought some cow’s milk and dipped a bit of bread in it for the baby, because I didn’t have enough milk myself. In the summer I always added water, no matter how old the child was. At first I gave my boys and girls the same, but as time went on, the boys got more and more. They were also given the best parts so that later on in life they can also provide well for their families.”*



Photo: Iris Schöninger

Hazrat Pacha, 67 years old, lives with his 50-year-old wife Tanadara, his four daughters and three sons in Lokhai in the district of Achin:

*“Three of my children died straight after birth. We came back to Lokhai from Pakistan only a year ago. We fled twice from there during the war - the first time when the Russians invaded. We stayed in Pakistan that time for eight years. Then we came back to Lokhai for two years, but because of the terrible drought, we left again six years ago. After that we lived in a refugee camp near Peshawar. We had better food there than we do today. We received it regularly and it was for free. It was cooked for us in a kitchen and sometimes it even had meat and vegetables. At the moment we live off green tea and bread for breakfast, and from courgettes and salad with tomato and pepperoni. The last time we had a family banquet was in Pakistan three years ago. My grandson was circumcised and I bought 15kg of beef and 15kg of rice for the occasion. Not a lot grows in our fields. We plant vegetables, but that’s not enough to live off. At the local market we buy courgettes, egg-plant, oil, tea and sugar. The range of goods on offer is better in the summer. Then fruit is available as well, particularly water melons. Things are very expensive in winter and we can’t afford much. Nor can we afford to irrigate our farmland. It costs 150 rupees an hour.<sup>9</sup> We get our drinking water from down in the village. The women bring it. We do actually have a well here in the yard, but the water level has fallen and it’s dried out now. There’s a lot of sickness here in the area, above all stomach bugs, malaria and tuberculosis. In summer children often get diarrhoea and pass it on to each other.”*

*water for longer,”* stresses Rahabza, a 30-year-old widow and mother of four from the mountain village of Utran. Women in Afghanistan are integrated into a lot of productive and income-generating activities, yet they only seldom own their own resources like land or livestock, as opposed to the male heads of family. As a consequence they have no income of their own: *“I help my husband to harvest roses, but I have no idea how much the output is or how much money we make from it,”* explains Wali Azrata from the village of Sutan in the Dari Noor district.

If money and provisions are short in the months prior to the harvest, the meals of many Afghans become even sparser and lacking in variety: *“Today we’re eating wild spinach from the fields with a bit of cheese and corn*

Rahabza has been a widow for several years and has to provide for her four children:

*“My name is Rahabza, I’m about 30 years old and I have three sons – Najid (15), Mohib Khan (10), Mansoor Khan (7) – and a daughter – Niamat Bibi (12). I had a second daughter but she died of a cold three months after birth. My husband died six years ago. I’ve been working in the fields since then, trying to get enough food for the children.*

*I was born here in the village and spent a lot of time in the mountains during the war. We used to hide in caves. Now things are much better and we have our own house again. During the war we always used to grind corn with our hands to make bread. At night we came down to the village and worked in the fields, only the adults, though. The children stayed up in the caves. There were a lot of air attacks, often at night, too. When the Russians were here we lived in the mountains for four years. Life was quieter under the Mujaheddin, but things got worse under the Taliban, particularly for me. I had to hide in the mountains again because they didn’t want widows to work.*

*We had our last family banquet three years ago when my son was circumcised. There was chicken and rice. I even bought a little oil just for the occasion.*

*No one in my family earns money. My sons are still too young. I have a small field where I grow maize in the summer and wheat in the winter. Occasionally I buy a chicken. Later on I sell its eggs or chicks. Or I might buy a goat and sell its young. It’s hardly enough to survive on. I’m in debt with a number of people.*

*There is no market here in the village, just two small shops. You can buy sugar, tea, oil, soap or sweets for the children there. I’ve never been to a market in my whole life. But it’s still possible to get pretty much everything here in the village because you hear soon if someone wants to buy or sell something.*

*When one of us is ill, I can’t afford medicine. We’re in God’s hands. When my husband was still alive things were better. He used to gather wood in the mountains. We didn’t buy or sell anything, but we had enough. But then my husband got very sick and we couldn’t go to the doctor. While he was ill, he always looked after the children and I went to work in the field. Even that was better than it is today.*

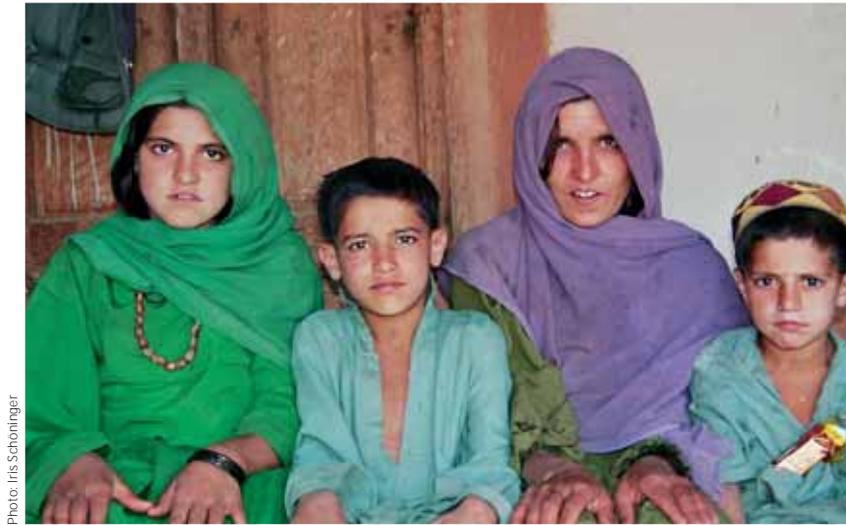


Photo: Iris Schöninger

The widow Rahabza had to spend years hiding in the mountains.

*There’s a lot of sickness here in the village, above all TB, polio, a lot of malaria and asthma or bronchitis. A lot of women have real problems after birth. Their joints swell up and they get high blood pressure. A lot of children die because the umbilical cord isn’t cut cleanly after birth. When people die, they say it was a bad spirit.*

*There’s no proper school here. They recently put up some tents nearby for classes. My sons now go to school. My daughter is already too old.”*

### 5.3 | Reconstruction and self-organisation are the main issue

Deutsche Welthungerhilfe<sup>10</sup> has been working together with local and international partners in Afghanistan since 1980. A framework agreement with the government has been in place since 1992. Welthungerhilfe remained in Afghanistan even during the long years of war and was therefore able to jump into action and deliver emergency aid when the Taliban were overthrown in 2001.<sup>11</sup> In 1980 it was refugees who had fled to Peshawar in Pakistan after the Soviet invasion who received emergency relief. Between 1986 and 1988 it was mainly partner organisations in Afghanistan. After the Mujaheddin seized power in



1992, Welthungerhilfe increased its help for refugees in Jalalabad, Kabul und Mazar-i-Sharif. However, in the course of the following years, the repair and reconstruction of schools, irrigation systems, drinking water systems, roads, houses, latrines and workshops have gained importance. Due to hostilities, projects have also been repeatedly halted.

**»The challenge is to help the Afghans help themselves.«**

Kofi Annan, UN Secretary General

With the exception of just a few days, Welthungerhilfe is the only German NGO which has been active in Afghanistan since 1993 without interruption. The result is a solid basis of trust amongst the Afghan people and considerable respect for the organisation amongst partners in humanitarian aid and development cooperation: this positive foundation makes cooperation with representatives of the Afghan government easier, from a national to village level, as well as with donor organisations. In the meantime, Welthungerhilfe’s mission in most

parts of the country is to provide help from one set of hands: despite some improvements, there are still shortages of food - caused by drought for instance - and the poor cannot survive without help. However, at the centre of all Welthungerhilfe’s current projects is reconstruction and various measures to achieve long-term capacity building, i.e. providing advice to both men and women on how they can “stand on their own two feet” in the medium term. In the long term they will hopefully be able to rely on the support of an empowered government and a stronger civil society which is in development.

This is possible by undertaking the following measures:

- Repair of communal and rural infrastructure, e.g. drinking water and irrigation plants, schools, bridges,
- food security,
- environmental and erosion protection,
- strengthening civil society.

#### 5.4 | Growing poppies is the main source of income

In the eastern Afghan province of Nangahar, the war displaced large sections of the population and entire villages took flight. While the people were absent, the agricultural infrastructure fell apart or disintegrated entirely. Yet 80% of the population are still dependent upon agriculture and it is imperative for them to find alternative sustainable sources of income. Unfortunately, this is a more than difficult task because individual families have too little land, old irrigation systems are disintegrating and farming methods urgently need to be improved. However, there is a lack of capital for investments and the necessary extension services. The province of Nangahar borders with Pakistan and is surrounded by mountain ranges where extreme climatic conditions are a part of daily life. In recent years the amount of land usable for farming has dropped due to destroyed irrigation systems and drought.

There is a clear correlation between increasing landlessness and debt, and a dependence upon users



In the remote mountain villages of the province of Nangahar, nearly all the families grow poppies because it brings the most revenue.



and drug barons: Nangahar is the second largest poppy-producing province in Afghanistan. This year Afghanistan's poppy fields have been extended by almost 60% nationwide, thereby producing 6,100 tonnes of raw opium – an alarming all-time high which accounts for more than 92% of worldwide production. The production of opium poppies has been growing steadily since the overthrow of the Taliban. The search for alternative incomes is difficult since annual revenue from opium poppies averages US\$5,400 per hectare in comparison with only US\$730 for wheat. Roses, however, offer a realistic starting point: they can bring in revenue of about US\$4,000 dollar per hectare. The area of irrigated farming land per family is often only between one and two jiribs (0.2 – 0.4 hectares). In the districts of Achin and Nazian – where Welthungerhilfe is just as active as in Dari Noor – 90% of local farmers rotate their crops from opium poppies and maize alongside beans and winter vegetables as an intercrop. In Dari Noor, opium poppy production increased from 30% in 2003 to 70% in 2004, though the local population did decide to stop growing poppies for 2005 and 2006. Although they kept their word, locals grew dissatisfied with the alternative forms of income made available by relief organisation and the government, and have therefore decided to return to large scale poppy farming next year.

The provinces of Achin, Nazian and Dari Noor are mainly populated by Ghilzai Pashtuns and members of the Ahmadzai tribe. As in many other parts of Af-

ghanistan, security in the province of Nangahar has deteriorated rapidly in the course of this year. The Taliban are increasingly trying to encourage inhabitants of many villages to engage in active resistance against the government by distributing flyers in markets and mosques at night – though their methods of persuasion also include the occasional threat of violence. The result is also a growing feeling of uncertainty amongst Afghan staff members within relief organisations, where female employees are in particular danger.

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### 5.5 | New perspectives: Training and organisation are the first steps

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In order to improve the income and food security situation of the general population in the above districts, 50 self-help groups were set up in autumn 2005. Each group has around 22 members and they currently receive guidance and consultation from six Welthungerhilfe community development staff members and other qualified employees. The initial aims of the project include the setting up of village banks as well as training in income-generating trades like fish-farming, tailoring, carpet weaving, tree nurseries and cattle breeding. At the same time there are literacy

Women learn to weave carpets in order to generate their own income.

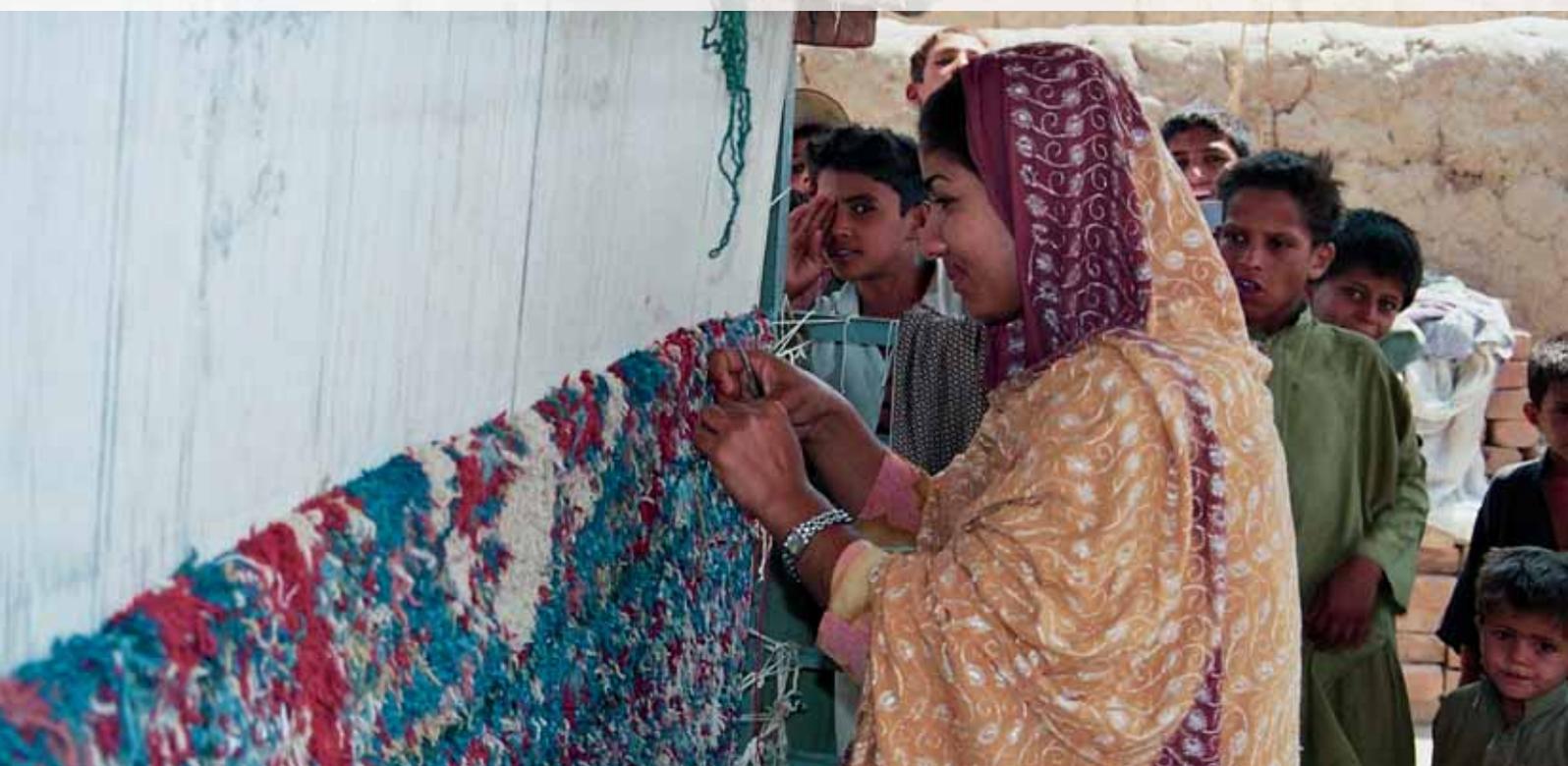




Photo: Cordula Kropke

The burka is very much a part of everyday life in rural areas.

classes as well as information meetings on the subject of health care. Once the groups have been consolidated, the idea is to encourage individual group members to take on the role of disseminators to train and teach in the future.

The first groups were formed for the allocation of small loans: *“I’ve joined a group where I’m learning how to save money,”* explains Rahabza from Utran. *“Four women have already received a small loan. I put between 10 and 15 rupees aside twice a month. When it’s my turn to receive a loan, I want to buy chickens, maybe later even a cow. Then I can sell its calf.”* In accordance with cultural practice in Afghanistan, the groups are separated according to gender. On the whole, men are more solvent and are therefore in a better position to develop new sources of income. Hazrat Pacha from Lokhai is an example: *“I’m a member of a self-help group and have already received a small loan from the village fund: 16,000 rupees from a total of 80,000 rupees to be divided up amongst five people. I’ve got six months to pay back the money. I bought five goats and I’m going to rear the kids and then sell them. The other members of the group did the same with their money. I pay between 30 and 50 rupees a month back into the fund, depending on how much I can afford. I would never have been able to buy a goat without this loan, so the project activities are very positive for me. I take it in turns with other members of my group to look after the goats: one of us always has to be with the herd as they look for food. It’s my turn every ten days.”*

Photo: Iris Schöninger

Although it is still early days in the development of local capacities in this project region - as is essentially the case in the whole of Afghanistan - the first steps of providing advice and support in strengthening existing structures and organisations as well as building new ones have already been taken. At the same time, 20 literacy courses - 10 for men and 10 for women - are taking place to prepare people for the forthcoming launch of village banks. At the moment, the courses run for six months and can be extended if need be. The aim of this project, funded by the Federal Ministry for Economic Cooperation and Development (BMZ), is the creation and diversification of income through access to education and credit. In addition, money is being invested in the construction of hospitals with the long-term aim of improving health care in the region.

In a country where there is a clear segregation of the sexes, it is important that Welthungerhilfe provides both male and female members of staff to advise the numerous groups. Female employees from Afghanistan are particularly obliged to stick to the rules: *“When I go into the villages I always wear a burka as a matter of principle,”* stresses Welthungerhilfe’s project manager, an Afghan woman. *“It’s important to convey the message that I’m not coming into the villages in these remote project regions to lead local women astray.”*



The first crop of roses harvested in the province of Nangahar. Roses may provide a genuine alternative to growing opium.

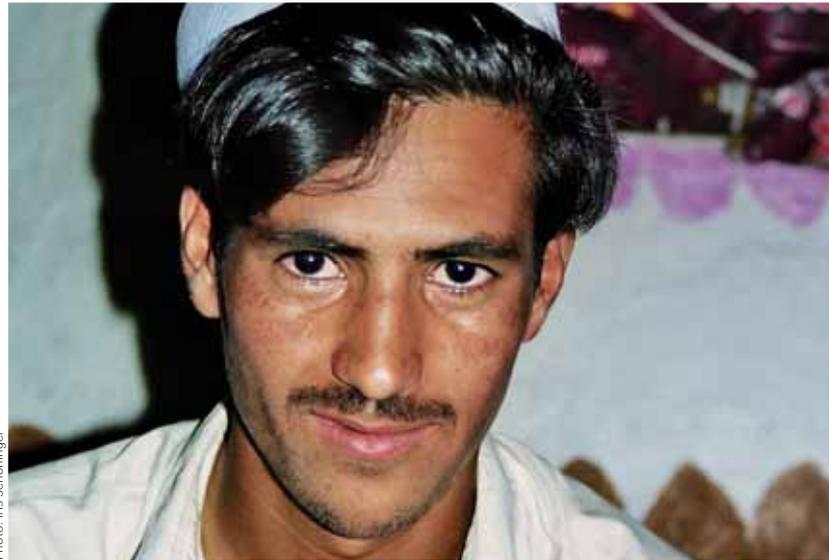


## 5.6 | New perspectives: Roses instead of opium

In order to generate alternatives to drug farming, Welthungerhilfe started a pilot project in the districts of Achin, Dari Noor and Nazian in 2004. Its aim: to produce Damascene roses for the extraction of rose-water and essence of roses. The plan is to sell high-quality essence of roses used for cosmetic products on international markets in the future. The cultivation and processing of roses once used to be an important part of Afghan culture, but a great deal of knowledge was lost over the years of war. The certification of the essence of roses, which is extracted under strictly ecological criteria, should provide farmers involved in the project with the opportunity of an attractive alternative income comparative to other agricultural products and thereby keep them from growing poppies.

In the first phase of this project, co-financed by the GTZ (the German Association for Technical Collaboration) with EU funds, 160 farmers planted roses on 0.2 hectares of land each. In the first harvest of the year - which is really still at the test stage - 9,000 kg of rosebuds were harvested, leading to the distillation of 1.8 litres of essence of roses. Parallel to the period of growing the roses, contracts were signed to guarantee purchasers for the producers and deliveries for the distillery. At the same time, two distilleries for the extraction of essence of roses and rose-water were built in the villages of Dari Noor and Achin. A third is under construction. Since it will take two to three years for the rose crops to start bringing in a healthy revenue, farmers have received interim funding to compensate for their loss of income during the transfer. To ensure that their food security is improved, farmers are receiving vegetable seed for growing intercrops in their fields as well as advice and guidance.

Farmers involved in the project can already look back on initial successes: "By working on the rose project I can earn extra money," explains Mogahidin from Pecha. "My brother and I have planted a jerib (0.2 hectares) with



Mogahidin, a rose-grower, is optimistic that he can make a fresh start after returning from Pakistan.

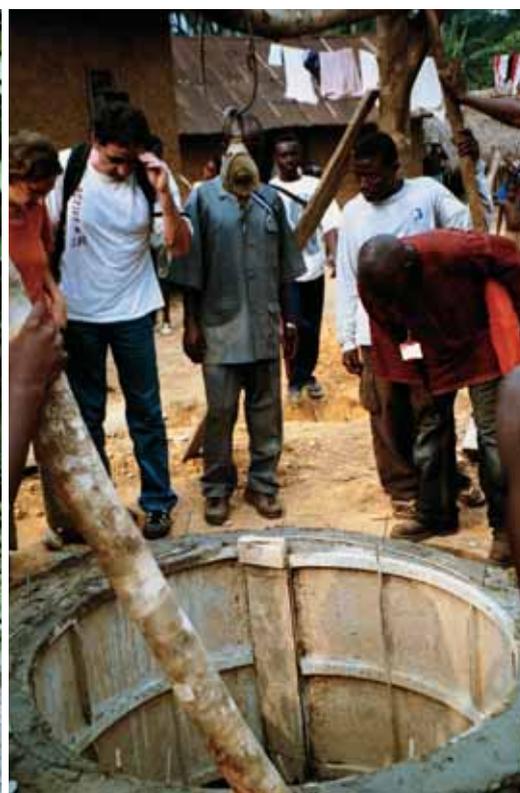
*roses and we're sharing the profits. This year we had a total of 120 kg rosebuds and we got 50 rupees per kilogram. The collection point is an hour away from here. I've been participating in the project for two years and it's improved my life. We got the plants for free and we're given advice on how to look after the roses. At the start my brother and I received 750 plants and about 600 of them are still alive. We have re-planted twice since then, but many died off anyway.<sup>12</sup> Since we started growing roses we don't need to produce our own wheat anymore. We can buy it on the market. Instead we plant vegetables amongst the roses. We eat them ourselves. We received the vegetable seeds from Welthungerhilfe."*

Azim Khan from Mullakal has already made a small profit: "I grow roses with my 18-year-old son, Muntiq. We started two years ago. We had a harvest for the first time this year. Not a lot has changed because of it. Life is a bit better. In the old days we always used to grow maize and wheat. Now we grow vegetables at the same time as roses. The money we get for the roses is indispensable to buy clothes and medicine. This year we harvested 50 kg of rosebuds and earned 2,500 Pakistani rupees."

In the long-term, the plan is to carry out the project as a public private partnership in cooperation with a company. The success and widespread impact of the fight against poppy production is, however, to a large extent dependent on the enforcement of the prohibition by the Afghan government.



Many villages in Sierra Leone are still cut off from the outside world for months on end. The first wells are repaired while people hope for swift progress in reconstruction.



## 6. | Sierra Leone is gradually stabilising

### 6.1 | Food security takes precedence

Years of civil war also devastated Sierra Leone.<sup>13</sup> This West African country was the scene of armed conflict for eleven years - from 1991 to 2002 - witnessing fighting between an increasingly unstable government and rebel groups supported by neighbouring Liberia. At least 75,000 of the country's five million inhabitants died; 5,000 children assumed an active role in the hostilities; at least 50,000 women and girls were raped or abducted for slavery. This extremely brutal war waged between the rebel organisation, the Revolutionary United Front (RUF), and the Sierra Leonean army was financed by the diamond trade. A peace treaty was only signed after Sierra Leone and the United Nations came to an agreement in 2002 and the establishment of a Special Court for the country was endorsed. Peacekeeping forces were withdrawn in 2005.

Subsequently, a new basis for life had to be created for the approximately 1.5 million refugees returning

home from neighbouring countries or from other parts of Sierra Leone, as well as for the 75,000 former soldiers of the rebel army. The population is expecting rapid progress. It's therefore essential that, in the face of a still fragile peace, political and economic measures, as well as those taken for national security, have to be tied in closely with development policy. High on the list of priorities is to make a marked improvement in the living conditions of the poverty-stricken population and to encourage them to play an active role in achieving this.

As in Afghanistan, Welthungerhilfe's current policy in Sierra Leone is therefore to promote capacity building alongside short-term support for returning refugees through agricultural aid. Welthungerhilfe's staff provide advice and guidance to individuals and local groups, e.g. offering training possibilities, advice on the effective use of the drinking water supply, and support in setting up new organisations.

The civil war devastated most of the infrastructure. By the end of the war trade and particularly agriculture had been brought to a standstill. The Gross National Product fell by half in the 1990s, and by 2000 had reached a low point of US\$142 per capita. Although since the end of 2000 there have been signs of

recovery from the years of economic decline during the civil war, Sierra Leone was still the penultimate country on the list of 177 countries in the UN's Human Development Index in 2005 (after having been last on the list in 2004). Economic growth is approximated at 7%. It's estimated that the growth rate will be between 4.5 to 5% for the years 2006 and 2007.

However, this is not enough to achieve a sustainable economic upturn. Unemployment, particularly

among the young, is prevalent. After decades of mismanagement, widespread corruption, insufficient state control and a lack of investments – particularly in agriculture and mining (diamonds, gold) – Sierra Leone faces major political, economic and social challenges, above all in using the enormous potential of the country for the benefit of the population at large.

Food security is a top priority on the government's agenda. At the start of his second period in office in May 2002, President Ahmad Tejan Kabbah declared that he would do everything in his power to make sure that in five years time no one in Sierra Leone would have to go to bed hungry.<sup>14</sup> The national anti-poverty campaign is sub-titled: "A national programme for food security, creating jobs and good governance". Development policy focuses on three areas: the promotion of good governance<sup>15</sup> in connection with national security and peace, the promotion of sustainable growth for the benefit of the poor, and the promotion of human development. In the face of the current situation the goals may be ambitious, but they are certainly a step in the right direction.

### Sierra Leone in short

The population living below the **poverty line**: up to 82 %

**Life expectancy**: slightly above 34 years

**Widespread disease**: HIV/AIDS, typhus, malaria and tuberculosis

The **Global Hunger Index** for Sierra Leone indicates that in 2003

- 50% of the population did not have enough to eat to meet their minimum dietary requirements (a steady rise opposed to only 40% in 1981),
- 27% of children under the age of five were underweight;
- 284 in 1000 live births died before the age of five.



Fatmata Gojo lost her husband in the war.

Photo: Verena Schwarte

55-year-old Fatmata Gojo from Simbaru-Tawahun in the district of Kenema recalls the war and the arduous fresh start with a sense of horror:

*"When the war came close to our village our family hid at night in the nearby wood. When the shooting didn't stop, we just stayed in the forest, sometimes even for an entire week, without food or shelter from the rain. Some villagers starved in the woods. When the shooting stopped, a lot of villagers thought it was safe to go back to the village and get food. But the rebels were still close by, and they attacked the people who went back. Many were killed, others abducted. That's when I fled with my six children to my mother in the neighbouring chiefdom. I came back to my village ten years ago. I brought a bit of food with me to get us through the beginning. We also have a small cacao plantation which brings in a bit of money. But I find it tough keeping the plantation going because we don't have enough workers. The harvest is marginal. It brings in about US\$27 a year."*

## 6.2 | Living from hand to mouth day by day

During the war in Sierra Leone no one knew what was going to happen the next day, or even who would be there to witness it. The situation was eased by the peace agreement signed four years ago and many people ventured to make a fresh start in their former home or elsewhere in their homeland. Daily life has become somewhat safer, but it's still marked by deprivation and abject poverty. When the Sierra Leonean government<sup>16</sup> asked the poorest sections of society what their worst problem was last year, the answer was unanimous: hunger. Yet the poor also suffer from a lack of income and bad housing. Alongside their concerns about where the next meal is going to come from, there's also considerable anxiety about unemployment and the future - typical attributes of a life spent living from hand to mouth. Even today, only a third of the population in Sierra Leone eat on a regular and sufficient basis; only around half of them can afford to buy vegetables, fish and oil in addition to their basic diet of rice and cassava. A third of all adults and almost as many children get by on one meal a day.<sup>17</sup> A boy describes the consequences: *"When you're hungry, you feel tired. It's difficult to concentrate in school. You keep falling asleep. You get stomach ache, as if you've got worms. You fight. It's so hard: all you can do is think about food the whole time."*<sup>18</sup> People living in the districts of Bo and Kenema who were interviewed by Welthungerhilfe staff have confirmed this.

Junisa Ansumana, the 80-year-old village chief of Benduma in the chiefdom of Tikonko, also has to provide for his eight grandchildren. His family can only eat once a day: *"Yesterday we had rice with cassava leaves; the day before yesterday mashed cassava with a soup and few vegetables. Sometimes we have a few pieces of dried fish for the soup. We only have breakfast when we've got enough money. Then I buy ten pieces of cooked cassava for US\$0.17 and we share them amongst the eight family members."*

Although livestock farming and agriculture are the most important sources of income for 75% of the population, the completely devastated infrastructure means that small-scale farmers are amongst

the poorest in the country. Poverty escalates if families live in rural areas, if the head of the household practices polygamy by having several wives and can't read and write, and if farming doesn't make a marketable profit.

This is the beginning of poverty as a vicious circle, since education remains a distant dream for the coming generations: *"I would really like to send my children to school,"* explains Fatmata Gojo, a widow and mother of six. *"Until recently my eldest son attended secondary school, but now I can't afford to pay the school fees, so he had to leave. Only one of my younger children attends primary school."* At the same time, disease and sickness go hand in hand with poverty on a daily basis. It is difficult to change this. Fatmata, for example, suffers from asthma: *"It comes from working in the swamps. I've also got a hernia which needs to be operated, but I can't afford it. I use a Chinese cream which I buy from travelling traders, and I also use traditional herbs. You never really know if it helps."*

Many children die as a result of various diseases and due to a lack of clean drinking water. In the dry season the only sources of water are usually rain or getting water from the swamps. Both are subsequently used as drinking water.



Photo: Verena Schwarte

Together with his wife, village chief Junisa Ansuma has to provide for eight grandchildren.



Fatmata Mansaray's sick and undernourished daughter was saved just in the nick of time.

Photo: Verena Schwarte

Poverty and undernourishment – particularly amongst children – are closely tied. In Sierra Leone, a third of all children are underweight and therefore too thin for their age. 34% are already stunted in their growth and 10% are emaciated.<sup>19</sup>

24-year-old Fatmata Mansaray was able to save her daughter's life in the nick of time:

*"My daughter Sonneh is sick. We usually live in Zimmi near the Liberian border. One day when we were visiting my sister, Sonneh developed a high fever. On top of that she kept vomiting and grew very thin. I took her to hospital at Gondoma because treatment back home is bad and expensive. There's often no medicine. In the nutritional centre at Gondoma, Sonneh was put on a special diet: with lots of energy and protein and then a special paste. She's better now, but she's still very thin. She has to stay on the special diet for another four to five weeks before she can come home. The staff are advising me about the right food for her health."*

In the hospital in Gondoma, in the Bo district, Dr. Gabriel Rossi<sup>20</sup> looked after the girl. He sees various causes of undernourishment: many people just don't have enough money to buy food or other daily necessities. If they don't produce food themselves, hunger and undernourishment are inevitable. On top of this, people have a very unbalanced diet. Their daily diet consists of rice, rice and more rice – and this isn't just due to a lack of money. People adhere to the proverb, *"If you haven't eaten rice, then you haven't eaten"*. The

first signs of undernourishment often go unnoticed, and parents turn to clinics or nutritional centres at a very late stage. If diseases like tuberculosis, fever, diarrhoea or HIV/AIDS also rear their head, then it becomes difficult - if not impossible - to save the child's life.

Kinie Kokofele is 35 and lives in Sembahun-Kokofele in the Bo district with his two wives - Baby (30) and Hawa (26) -, his 26-year-old sister, Mammy Moy, and a total of nine children aged between nine months and seven:

*"We live in a house with several rooms and a small shop. I built the house myself and we moved in three years ago. I come from here originally, but I spent a few years in Makeni attending an Arabic school. I came back here when I was twenty."*

*We stayed here throughout the war. The rebels came one night, set fire to my house and took everything with them, including our livestock. My wives took the children to Bo, and I went into hiding in the bush, where I lived off raw cassava. Later on I took my family to Gondoma, but then my younger brother was murdered by the rebels. We fled into the woods. We grew some vegetables there, but there was no doctor. We came back to our village after the rebels had been driven out. At the beginning we ate wild taro because there wasn't anything else to eat. I worked in a gravel pit and earned a pittance. Nowadays I earn money by growing cassava and peanuts, working in the shop, and selling wood and stones which I work into gravel. My main source of income is from the gravel. I use revenue from the shop to employ people to work in the swamp. That's how I get by. We eat twice a day, in the morning and in the evening. In the morning we usually eat cassava or rice with sauce, in the evenings often rice and fish. It's almost impossible to find meat around here, if at all at the market. Yesterday morning we ate mashed cassava with chilli and onions, in the evening rice with okra pods. Normally, I usually eat first and get the best parts. Then comes grandmother, then the children. Everybody has their own plate. Only the women eat out of the pots together when everyone else has finished. When there's a celebration I buy rice and a chicken or fresh fish. On a day like that we sometimes eat three times."*

### 6.3 | The new government is working closely with the international community

Deutsche Welthungerhilfe was already active in Sierra Leone in the period between 1983 and 1997, particularly in the farming sector and working closely with local partner organisations. Unfortunately, this work had to be prematurely stopped after a successful military coup which brought the country into chaos. Raids, plundering and the brutal maiming of the population by both government troops and the rebels became a part of daily life. In 2004, Welthungerhilfe was the first German relief organisation to return to this West African country. The security situation had more or less stabilised, permitting the continuation of projects. Furthermore, the new government, elected a year before, provided the necessary political framework and is now working closely with international donor countries and local as well as international development organisations. Building on experience and expertise gained in Mali, Welthungerhilfe focuses its work in Sierra Leone on a close linkage of emergency relief, reconstruction and long-term development co-operation. Food security is a priority alongside the stabilisation of agricultural production in refugee camps and their surroundings, e.g. in the south-eastern districts of Kenema and Bo. Many refugees from neighbouring Liberia still live in this district, as in other parts of Sierra Leone, and they have to share available resources with the local population. Soon after the end of the civil war, Welthungerhilfe was able to end immediate emergency relief, like the supply of food, and introduce concrete programmes for the sustainable development of the country.



Kinie Kokofele shares his house with his two wives, his sister and children.



### 6.4 | A wealth of resources brings new problems

The district of Kenema, which is divided into 16 chiefdoms, has a population of 480,000 people. The chiefdoms Simbaru and Wandor on the Liberian bor-



der – with a population of 15,000 and 22,000 respectively – are amongst the regions which most urgently need help. Only a few national and international organisations are active here. The rebel army had a strong presence in the Kenema district during the war, partly due to the location near the border, but also due to the discovery of gold and diamonds, particularly in the chiefdom of Lower Bambara.

About 72% of the villages, as well as most roads, bridges and the water supply were destroyed in the war. According to estimates made by the National Recovery Committee, 16,500 former inhabitants have returned to their homes since the end of the war and are now in need of help: they sought refuge mainly in Liberia and Guinea, or in other parts of the country. 5,500 former soldiers took part in a reintegration programme.

Although the district once used to be the country's principal rice growing area, rice production in 2004 only covered half of the district's own requirements (more recent figures are not available). This is hardly surprising since farming practices virtually came to a standstill in this part of the country between 1999 and 2001. It is estimated that only 12% of households have sufficient food availability. In connection with this, it is noticeable that today it's almost exclusively women who farm for the survival of their family. While they

are busy in the fields, the men are out looking for ways to make a fast buck. They work in the diamond and gold mines nearby or further afield, which means they are no longer in a position to work the land. In their absence, women have joined forces by forming numerous self-help groups in which they produce basic foodstuffs like rice, cassava, local vegetables and peanuts in communal fields. However, they lack expertise and there is hardly any diversity in their produce.

Their fields are often located on slopes or in valleys and swamps. Since soil on inclines is not particularly fertile, new farming land constantly has to be claimed using slash-and-burn methods. The land left behind is abandoned to erosion. Only about 10% of the entire surface of the chiefdom is still covered by secondary forest. In addition to these environmentally damaging farming practices, the longevity of the area's natural resources is also increasingly endangered by the unsupervised felling of trees and the extensive and long-term devastation of useable farmland in the course of diamond mining.

Clean drinking water is also in short supply. People in rural areas are almost completely dependent on surface water from ponds and rivers, or from the few precarious house wells. All supply systems for larger communities were destroyed during the civil war. Thus, illness and disease resulting from dirty water are now rampant, above all worm-related disease and diarrhea. The chiefdom's road network and tracks are also in a desolate condition. The majority of villages are cut off from the outside world for months during the rainy season, meaning the people have no access to markets, schools or medical centres.

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## 6.5 | New perspectives: Rebuilding infrastructure and agriculture is the first step

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With financial support from the European Commission, Welthungerhilfe has been running about 60 self-help groups in the chiefdoms of Simbaru und Wandor since 2005. The groups are made up of women and

have an average of 25 members. About 500 young people are integrated into the programme. The groups are primarily concerned with improving the food situation and infrastructure, but also seeking new sources of income and using existing resources in a sustainable manner.

The aim is to increase the income of small farming businesses by:

- increasing the yield with integrated farming methods in valleys and planes,
- a diversification of the range of products and therefore improved marketability,
- the construction of drying rooms for seed and crops, the provision of rice threshers and packaging material for the processing of food and improvement of marketability.

In the first two years, the self-help groups receive seeds for sesame, vegetables and rice and roots for growing cassava, yams, sweet potatoes, as well as basic farming implements and foot pumps for small irrigation plants. Swamps were canalised and paddy fields set up for rice. At the same time, the groups are given training in the ecological management of existing resources in order to secure long-term sources of income.

Fatmata Gojo and her daughter are both members of a self-help group and have already experienced initial success: *“We grow peanuts, sweet potatoes, vegetables, maize, rice and cassava. We now have more food for ourselves, and we sell vegetables and maize. The women’s group now has a bit of money at its disposal and can provide small loans which individuals can pay back with a low interest rate. Because I received seed from Welthungerhilfe this year, I could employ a few men at an early stage to cultivate a field. Up to now I’ve usually been too late, because I often had to wait for the seed. That will change with the seed bank which we’re soon going to set up in the village. But I also want to keep a bit of rice from my own yield for sowing next year.”*

By extending infrastructure like small bridges and river crossings at strategic points, villages and also farming land will become accessible again by car, including one village that has been cut off from the outside world for 40 years. The people themselves supply manpower and building material from local resources and are consulted by Welthungerhilfe experts (civil engi-



Amadou John Simbu is involved in rebuilding his village.

neers, water management specialists) with regard to the most appropriate technology. In conjunction with this, drinking water wells are being built in selected villages. A building company is being financed by the project; users help in the earth works and provide building materials. Water committees, which were already formed before the start of construction, coordinate the provision of manpower and materials and, together with the project staff members and the building company, develop workplans and schedules.

Amadou John Simbu, a resident of Simbaour-Tawahun with his wife and five children, describes the changes brought about in daily life: *“A lot has changed in our village through the Welthungerhilfe project. They explained to us that it’s very important for your health to have clean drinking water. Now we appreciate the water from the well more and try to look after it better. I helped build it and also organise the materials. At the moment I’m working on the drainage work to repair the roads.”*

It is part of the cross-sectional task to carry out capacity building activities for the participants and the groups they have founded, including areas like education and training projects as well as public awareness measures. An example is provided by the well committees who are advised about how to organise and finance maintenance, repairs and the procurement of spare parts. Transparent bookkeeping becomes essential in this process. Information dissemination concerning the

prevention of disease due to unclean drinking water also plays a vital part in making a better future.

The Sierra Leonean people, who were left badly traumatised by war, are finding a way forward. They are involved in every phase of the project and are thereby gradually gaining in confidence. In concrete terms: new activities are only planned and carried out if the people themselves want them and if communities can provide a substantial contribution themselves.

Kinie Kokofele takes an active role in his village, Sembehun-Kokofele. He runs a self-help group which makes swamps arable: *“We sacrificed a lot to start this work in swamp farming. It’s extremely hard work and very unpleasant. We spend most of the time standing in the water and there are a lot of leeches. But we brought in the first rice harvest. We’ve also been supported and instructed in the building of toilets out of local materials. Now it’s not so unpleasant when strangers ask to use the toilet here because we don’t have to send them into the bush anymore. The most important thing for us was building a new school in our village. The school used to be in a thatched-roof building where the roof had to be renewed each year. Now we have a brand new building made of stone. In our group recently we had to warn four members who were neglecting work in the swamps. If we’re being supported by Welthungerhilfe, then all of us have to make our own contribution. As the saying goes, ‘if someone scrubs your back, then you need to pour water on it.’”* And Junisa, Benduma’s village chief, stresses the cooperation in the process of developing the village: *“As village chief, I’m involved in all decisions concerning the development of the village and the mobilisation of the people who live here.”*

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## Summary

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Although Afghanistan und Sierra Leone are culturally and climatically fundamentally different, both countries were devastated by decades of brutal civil war. Whereas the mountainous country in the Hindu Kush has no major natural resources at its disposal, tropical Sierra Leone is blessed with gold and diamonds and is therefore in a position to invest hugely in the development of its country - provided that armed conflicts

in neighbouring states are also brought to an end and don’t destabilise this coastal nation. Numerous refugees in both Afghanistan and Sierra Leone returned to their villages or slums in the city suburbs after the end of the war and now need help.

Reconstruction and rehabilitation remain problematic because old conflicts have only superficially been resolved, or in the case of Afghanistan, are escalating once again. At the same time, a populace which has been traumatised and bled dry by war is waiting for living standards to improve noticeably and for new economic perspectives to surface. Unfortunately, this hasn’t happened yet in Afghanistan because of a very weak central government.

As a consequence, daily life for the majority of the population is marked by permanent shortage. Food is scarce and people’s diets are unbalanced due to cultural habits and ignorance. Small children are the ones to suffer most. When people get sick, they can’t expect medical support. People who are already undernourished become even weaker. War razes roads, schools, medical centres and the water supply systems to the ground, as far as they already have been in existence prior to the outbreak of conflict. Markets are destroyed and rain or snow renders roads impassable for months on end, thereby cutting most villages off from the outside world - and also to vital trade and communication routes.

As was the case amongst the small-scale farmers we interviewed, those who attempt to be self-sufficient rely on precarious farming methods and generally have no financial leeway. As a result, families try to combine more than one source of income. This often leads to the migration of (young) men to other regions or abroad, particularly in Sierra Leone, where many are lured to the gold and diamond mines by the dream of earning a fast buck. This doesn’t always work out, especially as competition is large and workers generally lack any education.

Due to their lower social status, women face major obstacles in earning a livelihood. This is particularly applicable to widows in a patently patriarchal post-war society. In both countries sexual inequality begins at an early age: boys get more to eat than their sisters and are also given the better parts. In addition, access to resources like education and training, land, loans, etc. are much more limited for women than for men.

A number of factors play a part in the right to lead a dignified life, including sufficient food. “Hunger is one

of the worst abuses of human dignity. The inability to change hunger in a world of abundance should fill us all with shame,” declared UN Secretary General, Kofi Annan, at the 2002 UN World Food Conference in Rome. Moreover, hunger has nothing to do with fate or destiny. It’s nearly always caused by men themselves. With the world growing increasingly closer and the gulf between rich and poor getting wider all the time, it is imperative to pursue the goal of providing all people throughout the world with sufficient food.

Investing in food and food security is a measure which pays off in the long run. Undernourishment is intrinsically tied to underdevelopment and poverty, making food programmes efficient investments. According to estimates made by the World Bank, each dollar invested in food security yields between 0.9 and 84 US\$. The right to food for all members of the human family was already stipulated by representatives of the international community in the UN Charter in 1948.

We know that the problem is not a lack of know-how, but a lack of political will. The cases in point from Afghanistan and Sierra Leone illustrate how people can rebuild their own livelihood with the necessary support. Major success is not always instant, but people’s activities do bring noticeable improvements to their daily life. It’s imperative that poor people are given access to new resources and can develop confidence in their own abilities, and that governments assume responsibility for their citizens and ensure that iniquitous economic and trade relations on an international level do not jeopardise the progress made on a project level.

In this matter, science, politics and civil society carry equal responsibility, as well as representatives from the economy and media. The Global Hunger Index is a valuable tool in advocating a world in which all people can lead a life worthy of human dignity. In the years to come, the GHI should be used to mobilise political will in the fight against hunger and undernutrition, raising public awareness and giving the voiceless a voice.

The authors: Dr. Lioba Weingärtner is a freelance consultant and expert in development co-operation; Dr. Iris Schöninger is coordinator for development policy and campaigning at Deutsche Welthungerhilfe.

pg 17ff; World Bank (2005), Afghanistan. National Reconstruction and Poverty Reduction – the Role of Women in Afghanistan’s Future. March 2005, pg xv.

<sup>2</sup> Government of the Islamic Republic of Afghanistan (2006), Afghanistan National Development Strategy. Summary Report. An Interim Strategy for Security, Governance, Economic Growth & Poverty Reduction, pg 9ff

<sup>3</sup> DWHH (2005): Country concept Afghanistan. Perspectives for development co-operation 2005 – 2008. Bonn, May 2005 and other Welthungerhilfe documents, pg 10

<sup>4</sup> See also page 24, footnote 6.

<sup>5</sup> Islamic Republic of Afghanistan and UNDP (2005): Millennium Development Goals Vision 2020. Islamic Republic of Afghanistan Country Report 2005, pg xviii

<sup>6</sup> Schetter, C. (2005): Afghanistan – fragile progress: FES analysis. May 2005; Schetter, C. (2006): Afghanistan – Welcome to the re-education camp. FriEnt Impulse 05/2006., pg 6-8

<sup>7</sup> Islamic Republic of Afghanistan and UNDP (2005): I.c.; Government of the Islamic Republic of Afghanistan (2006), I.c.; Islamic Republic of Afghanistan and the International Community (2006): The Afghanistan Compact. Building on Success. The London Conference on Afghanistan, London 31 January – 1 February 2006

<sup>8</sup> Grace, J. and Pain, A. (2004): Rethinking Rural Livelihoods in Afghanistan. Afghanistan Research and Evaluation Unit, June 2004; Islamic State of Afghanistan and World Food Programme (2004): The National Risk and Vulnerability Assessment 2003. December 2004; German Agro Action (2006): Baseline Study Report Achin, Dari Noor & Nazy an Districts, Nangrahar Province Community Development. February 2006

<sup>9</sup> 60 Pakistani rupees = US\$1.

<sup>10</sup> DWHH (2005): I.c.

<sup>11</sup> Deutsche Welthungerhilfe is mainly active in northern and north-eastern provinces. Since autumn 2001 Welthungerhilfe has implemented projects to the value of 48 million euros.

<sup>12</sup> An observation by a Welthungerhilfe staff member concerning problems with fungal infections in the region.

<sup>13</sup> Government of Sierra Leone (2005): Poverty Reduction Strategy Paper (SL-PRSP) A National Programme for Food Security, Job Creation and Good Governance (2005-2007); [www.auswaertiges-amt.de/diplo/de/Laenderinformationen/SierraLeone/Wirtschaft.html](http://www.auswaertiges-amt.de/diplo/de/Laenderinformationen/SierraLeone/Wirtschaft.html) (access August 2006); Project documents from the Deutsche Welthungerhilfe and from medico international.

<sup>14</sup> Ministry of Agriculture, Forestry and Food Security, Ministry of Fisheries and Marine Resources (2004): Agricultural Sector Review and Agricultural Development Strategy Vol. III Sector Report: Right to Food. June 2004, pg 1

<sup>15</sup> Government of Sierra Leone (2005), I.c.

<sup>16</sup> Government of Sierra Leone (2005): Poverty Reduction Strategy Paper (SL-PRSP) A National Programme for Food Security, Job Creation and Good Governance (2005-2007), pg 24

<sup>17</sup> Government of Sierra Leone, in collaboration with WFP/UNDP/UNICEF/WHO/FAO (2006): Sierra Leone Food Security, Farm Production, Health and Nutrition Survey 2005. Vulnerability Analysis and Mapping, March 2006

<sup>18</sup> *ibid* [,] pg 23

<sup>19</sup> Government of Sierra Leone (2005), I.c.

<sup>20</sup> Staff member of Médecins sans Frontières, Belgium.

<sup>1</sup> UNDP Afghanistan (2004), National Human Development Report 2004. Security with a Human Face. Challenges and Responsibilities,

# Appendix

## A. | The concept of the Global Hunger Index (GHI)

Hunger has many faces: apathy, increased susceptibility to disease, shortfalls in nutritional status, loss of energy, disability, and death due to starvation or infectious diseases whose lethal course is the result of weakened general health. The causes and effects of hunger are illustrated in the diagram on the following page and are linked in complex ways. At the national level, interactions between economic development, technology use, policy, and culture and ecological factors and the availability of natural resources are crucial. These factors influence households and communities in terms of food availability; basic education and knowledge; and caring capacity for children, old people, and the sick, and also influence the health environment in general. Shortfalls in these areas can rapidly push the individual into a vicious cycle of insufficient dietary intake, weight loss, a weakened immune system, and infections accompanied by loss of appetite and energy-consuming fever.

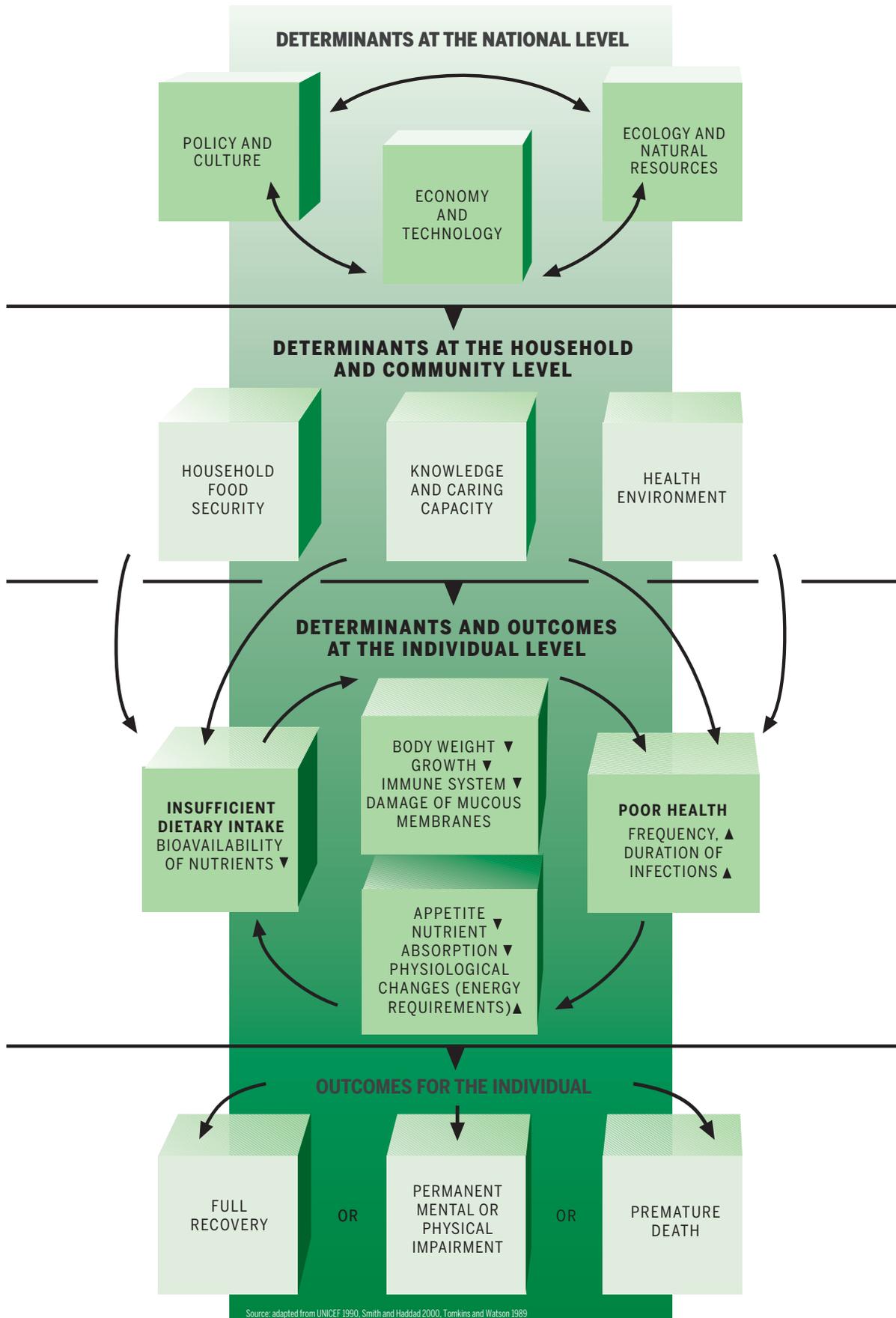
The GHI is designed to capture several dimensions of hunger and undernutrition. They include: insufficient food availability (as compared to requirements), shortfalls in nutritional status, and deaths that are

directly or indirectly attributable to undernutrition. This definition goes beyond insufficient dietary energy availability at the household level, which is the focus of the FAO measure of undernourishment. The FAO measure does, in fact, capture only one important aspect of food security as jointly defined by the participants of the 1996 World Food Summit: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” [See FAO 1996a, paragraph 1].

Sufficient dietary energy availability at the household level does not mean that all individual household members benefit equally. Nor does it guarantee that small children will be fed with food that is adequate for their age or that sick family members can biologically utilize the available food. The Global Hunger Index is therefore based on a three-dimensional definition which encompasses the outcomes of insufficient quantity, quality, or safety of food as well as the consequences of a failure to utilise nutrients biologically.

The combination of the proportion of undernourished in the entire population with the two indicators relating to children under five ensures that both the food supply situation of the population as a whole and the effects and concurrent factors of inadequate nutrition on a physiologically very vulnerable group

The vicious circle of hunger and undernutrition



are captured. Children's nutritional status is of particular importance because nutritional deficiencies put them at high risk of physical and mental impairment, as well as at high risk of mortality. For many children in developing countries who die from infectious diseases, the indirect cause of death is a weakened immune system due to lack of dietary energy, vitamins and minerals. Because the first two indicators – the proportion of undernourished and the prevalence of underweight in children – do not reveal premature death as the most tragic consequence of hunger, the child mortality rate is also included.

In the Global Hunger Index, the three selected indicators are equally weighted.

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## B. | Information content and potential for advocacy

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Since hunger has many faces, it makes sense to design a new index that takes a multidimensional approach:

1. Various aspects of hunger and undernutrition can be captured simultaneously.
2. The combination of indicators measured independently of each other reduces the impact of random measurement errors.
3. The condensation of information facilitates a quicker overview for decision-makers from the political and public arenas.
4. Indexes are helpful tools for lobbying and advocacy. If used in international rankings, indexes can foster a sense of competition among countries and thus encourage good policies.

The most commonly used measure of hunger is the FAO indicator of the proportion of undernourished in the population. The FAO method of estimating this number is based on three parameters: dietary energy supply per capita (derived from macro-data on agricultural production, net trade flows, and stock changes, as well as uses other than food consumption), inequality in dietary energy availability

between households, and minimum dietary energy requirements (see Smith et al. 2006 for the application of an alternative approach based on data on household expenditures in 12 Sub-Saharan African countries for individual years between 1994 and 2001). This simple method permits worldwide comparability and by capturing calorie deficiency, takes into account an important aspect of hunger. However, the new index tries to address concerns about measuring other aspects of hunger.

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## C. | Calculation of the GHI

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The calculation of GHI scores is restricted to developing countries and countries in transition for which measuring hunger is considered most relevant (developed countries are excluded; see Wiesmann 2004 for the selection criteria applied). The table on the following page provides an overview of the data sources for the Global Hunger Index. The first column indicates the reference year of the GHI and the second column specifies the respective number of countries for which the Index can be calculated (see the table on the left).

## Database for calculation

GHI	Number of countries with GHI	Index Components		
		Indicators	Reference Years	Data sources
1981	89	• Percentage of undernourished in the population	1979-1981 <sup>1</sup>	FAO 1999 and author's estimates
		• Prevalence of underweight in children under five	1977-1982 <sup>2</sup>	WHO 2006 <sup>3</sup> , UN ACC/SCN 1993, UNICEF 1995 and author's estimates
		• Under-five mortality rate	1980	UNICEF 1995
1992	96	• Percentage of undernourished in the population	1990-1992 <sup>1</sup>	FAO 1999 and author's estimates
		• Prevalence of underweight in children under five	1987-1992 <sup>2</sup>	WHO 2006 <sup>3</sup> , UN ACC/SCN 1993, UNICEF 1995 and author's estimates
		• Under-five mortality rate	1992	UNICEF 1995
1997	118	• Percentage of undernourished in the population	1995-1997 <sup>1</sup>	FAO 1999 and author's estimates
		• Prevalence of underweight in children under five	1993-1998 <sup>2</sup>	WHO 2006 <sup>3</sup> , UN ACC/SCN 1993, UNICEF 1995 and author's estimates
		• Under-five mortality rate	1997	UNICEF 1995
2003	116	• Percentage of undernourished in the population	2000-2002 <sup>1</sup>	FAO 2005, and author's estimates
		• Percentage of underweight in children under five	1999-2003 <sup>2</sup>	WHO 2006 <sup>3</sup> , and author's estimates
		• Under-five mortality rate	2003	UNICEF 2005

Note: <sup>1</sup>Three-year average, <sup>2</sup>Most recent survey in this period, <sup>3</sup>The methodology applied for the WHO Global Database on Child Growth and Malnutrition is described in de Onis und Blössner 2003.

### The Global Hunger Index is calculated as follows:

$$(1) \quad \text{GHI} = (\text{PUN} + \text{CUW} + \text{CM})/3$$

GHI: Global Hunger Index

PUN: proportion of the population that is undernourished (in %)

CUW: prevalence of underweight in children under five (in %)

CM: proportion of children dying before the age of 5 (in %)

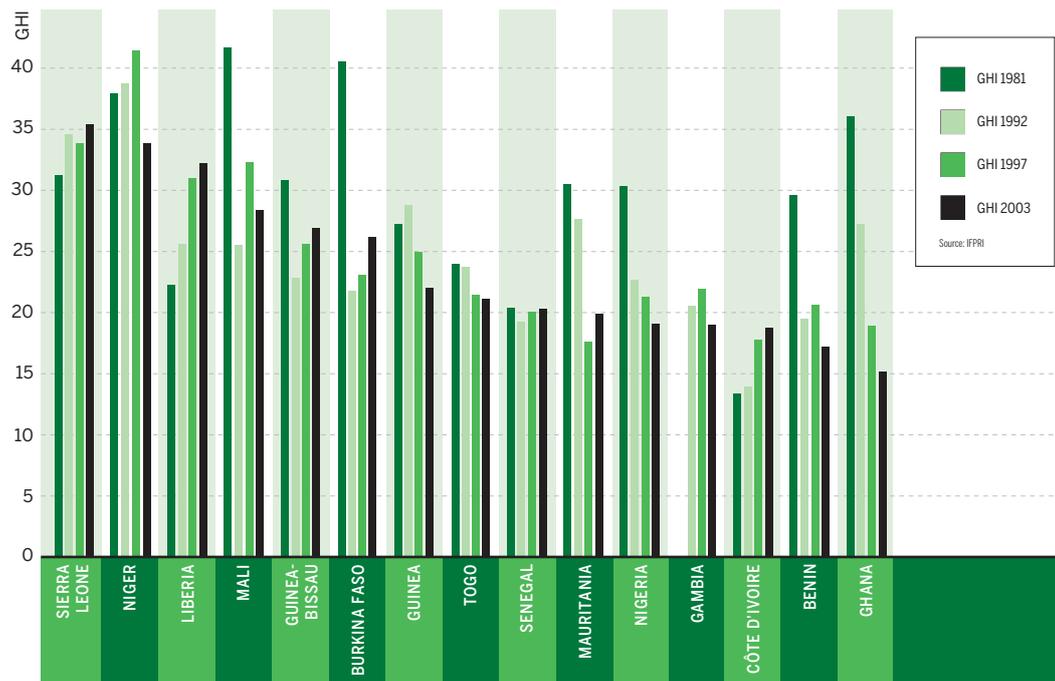
All three index components are expressed in percentages, and the results of a principal components analysis suggest equal weighting. Higher GHI scores indicate more hunger. The index varies between a minimum of 0 and a maximum of 100. However, the maximum score of 100 would only be reached if all children died before their fifth birthday, the whole population were undernourished, and all children under five were underweight. Likewise, the minimum score of zero does not occur in practice, because this would mean there were no undernourished in the population, no children under five who were underweight, and no children who died before their fifth birthday. Even the most highly developed countries have under-five mortality rates greater than zero.

**D. | GHI country trends by subregion**

When looking at GHI scores for entire regions, it is easy to overlook disparities within subregions and between individual countries. Because pockets of hunger and poverty can persist especially in coun-

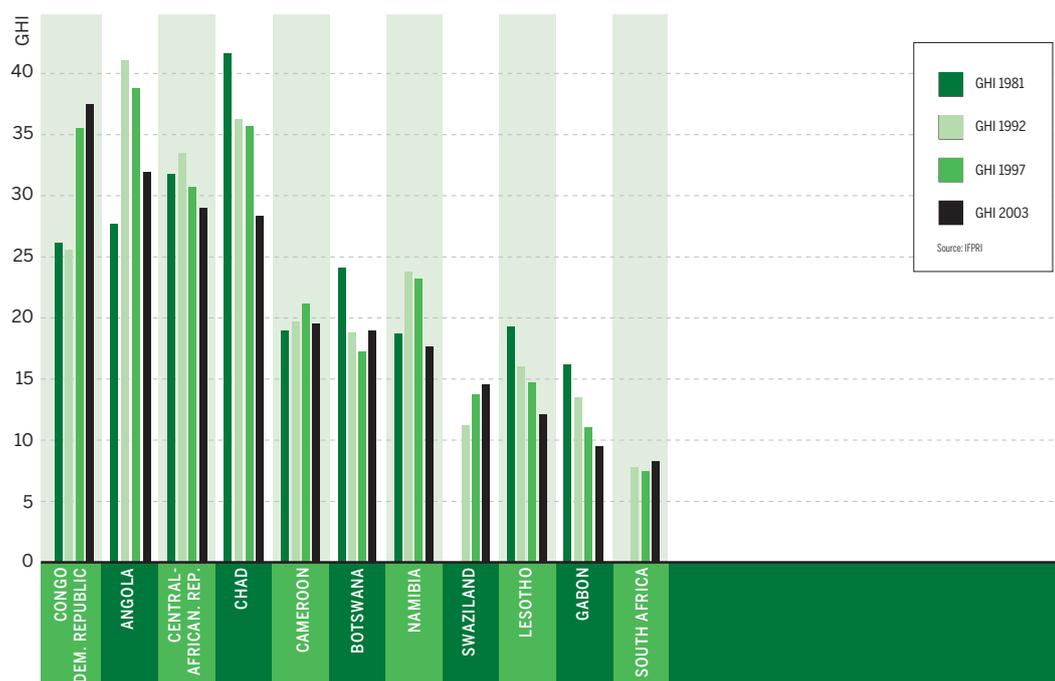
**West Africa**

GHI trends from 1981 to 2003 by country



**Central and southern Africa**

GHI trends from 1981 to 2003 by country

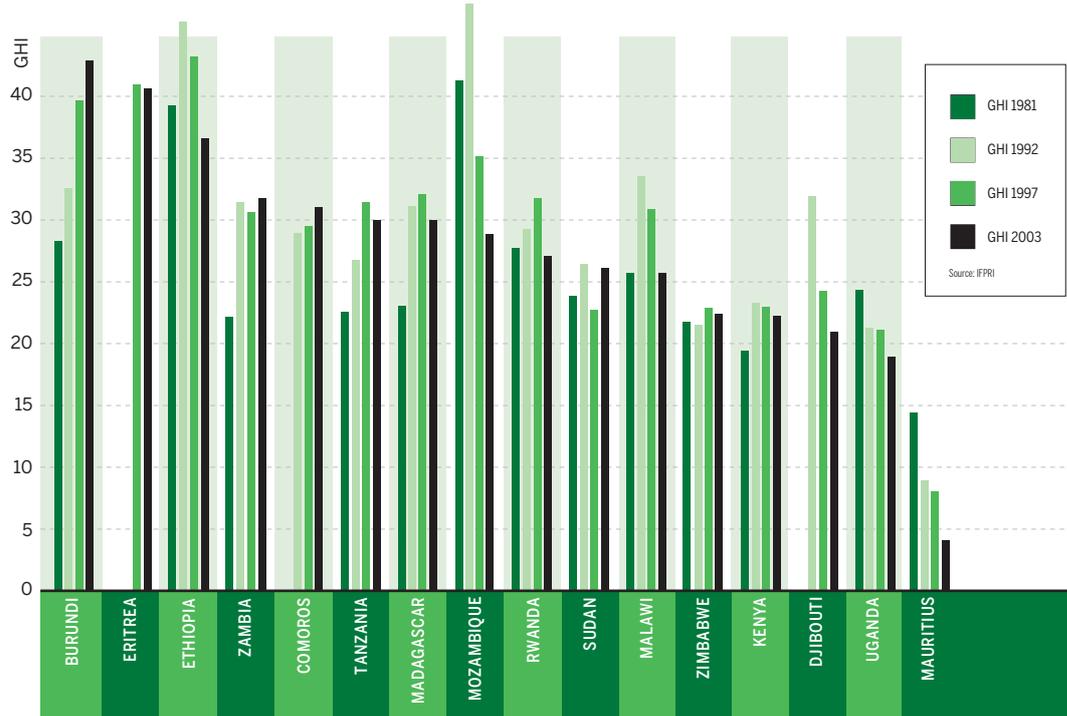


tries with large populations and very diverse geographical areas even if national aggregates of the GHI look favourable, these countries should be subject to subnational disaggregation of index scores in the fu-

ture. The following overview is further differentiated by region, with countries ranked by their GHI 2003 score. Some trends and development patterns can thereby be illustrated.

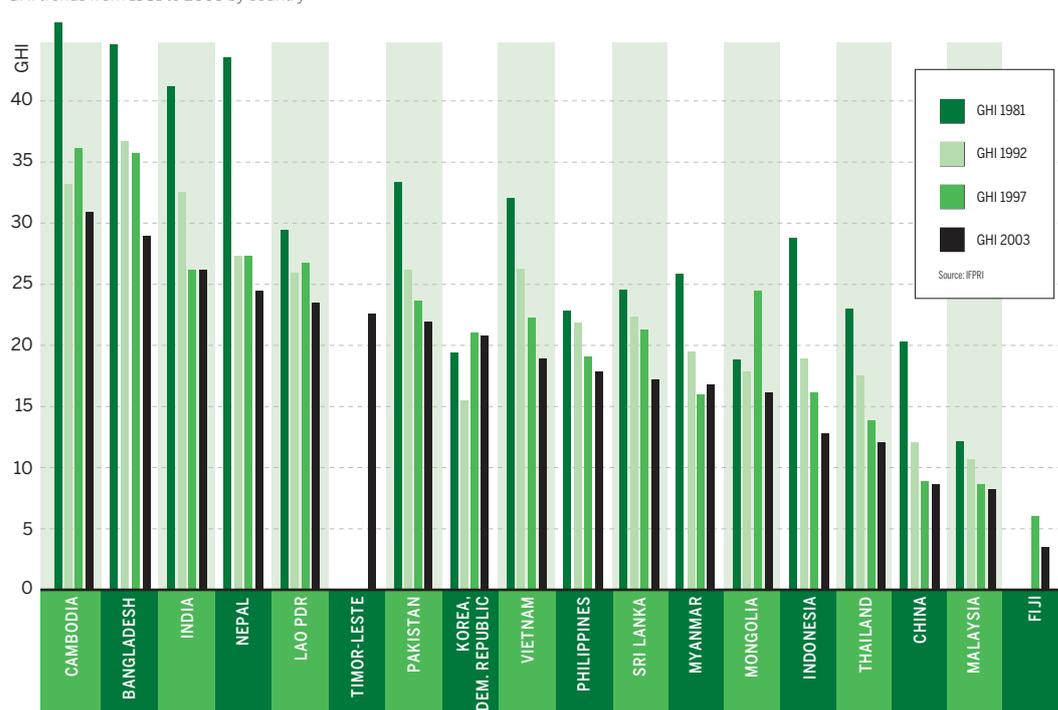
**East Africa**

GHI trends from 1981 to 2003 by country



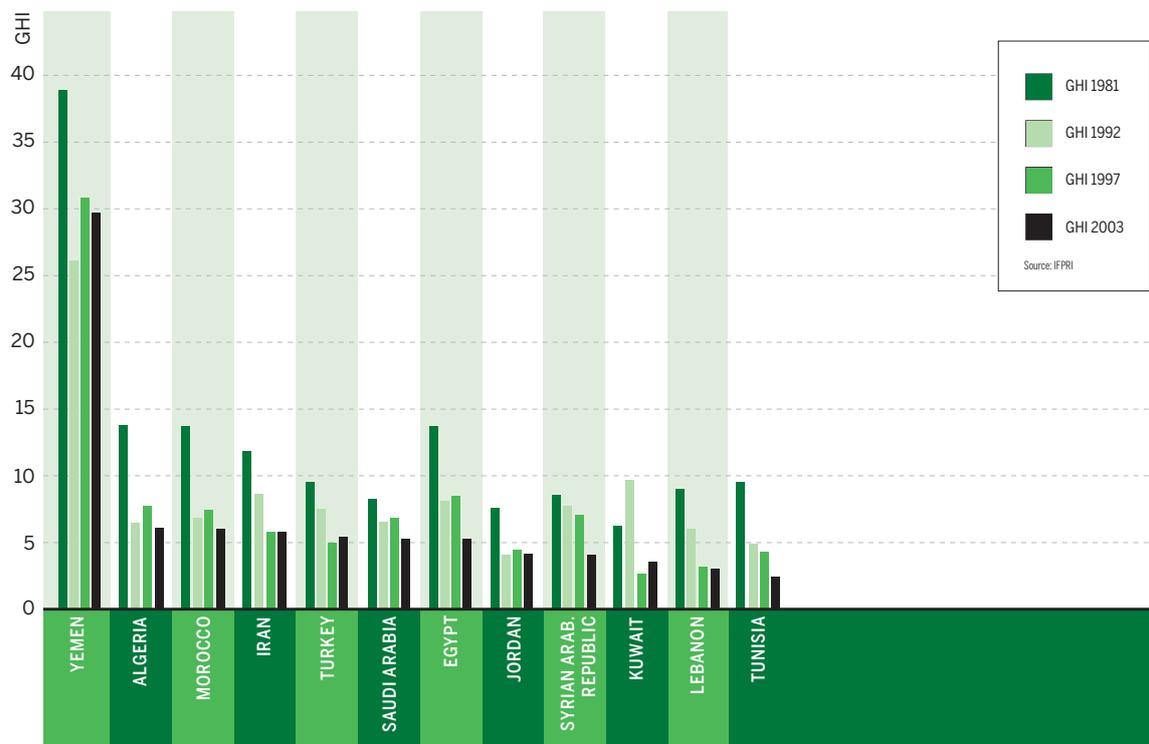
**South and Southeast Asia**

GHI trends from 1981 to 2003 by country



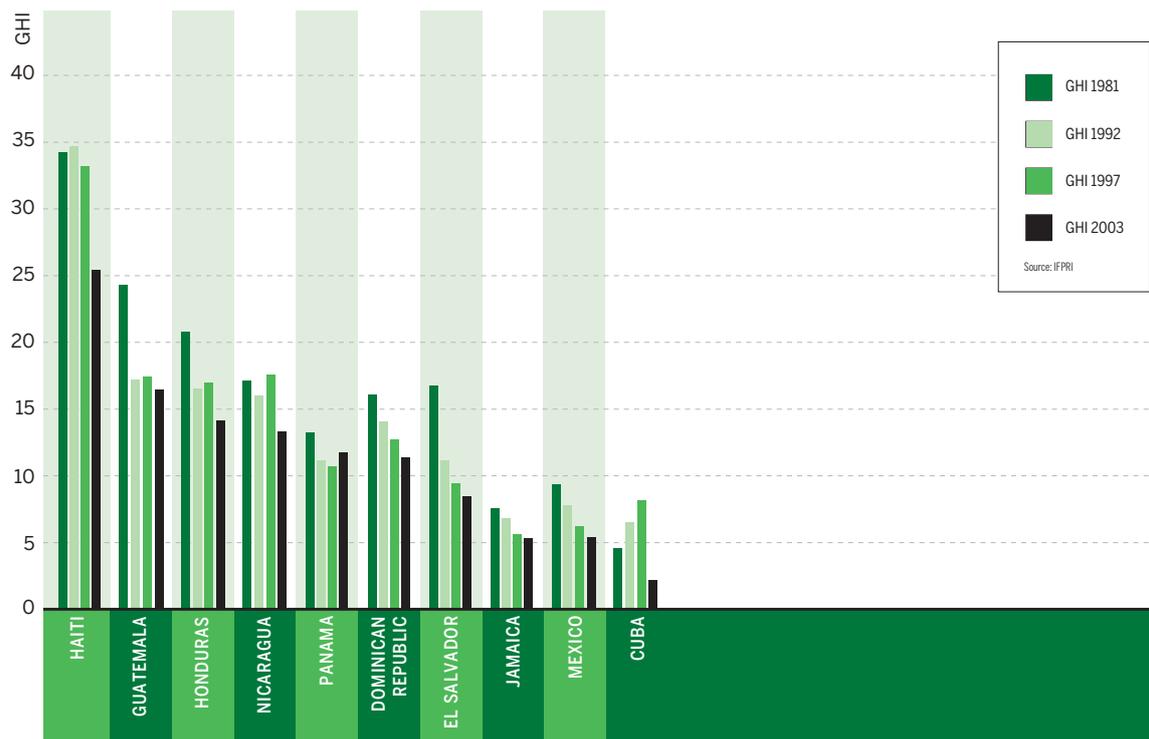
### Near East and North Africa

GHI trends from 1981 to 2003 by country



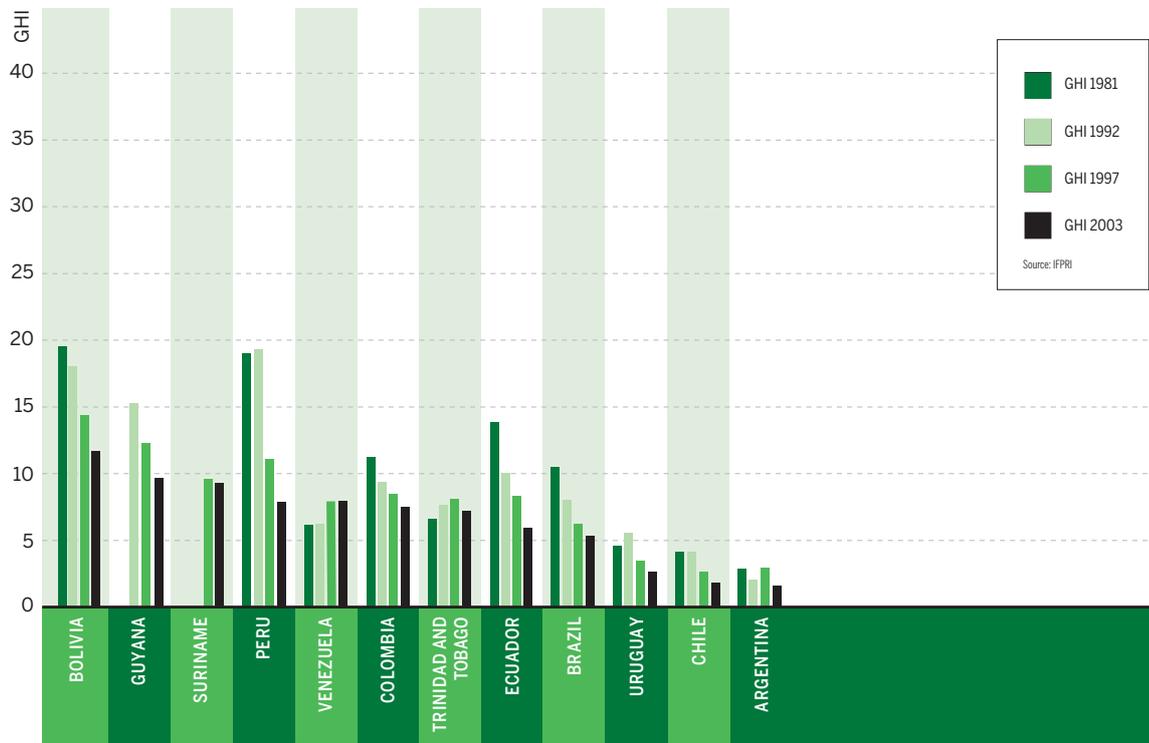
### Central America and the Caribbean

GHI trends from 1981 to 2003 by country



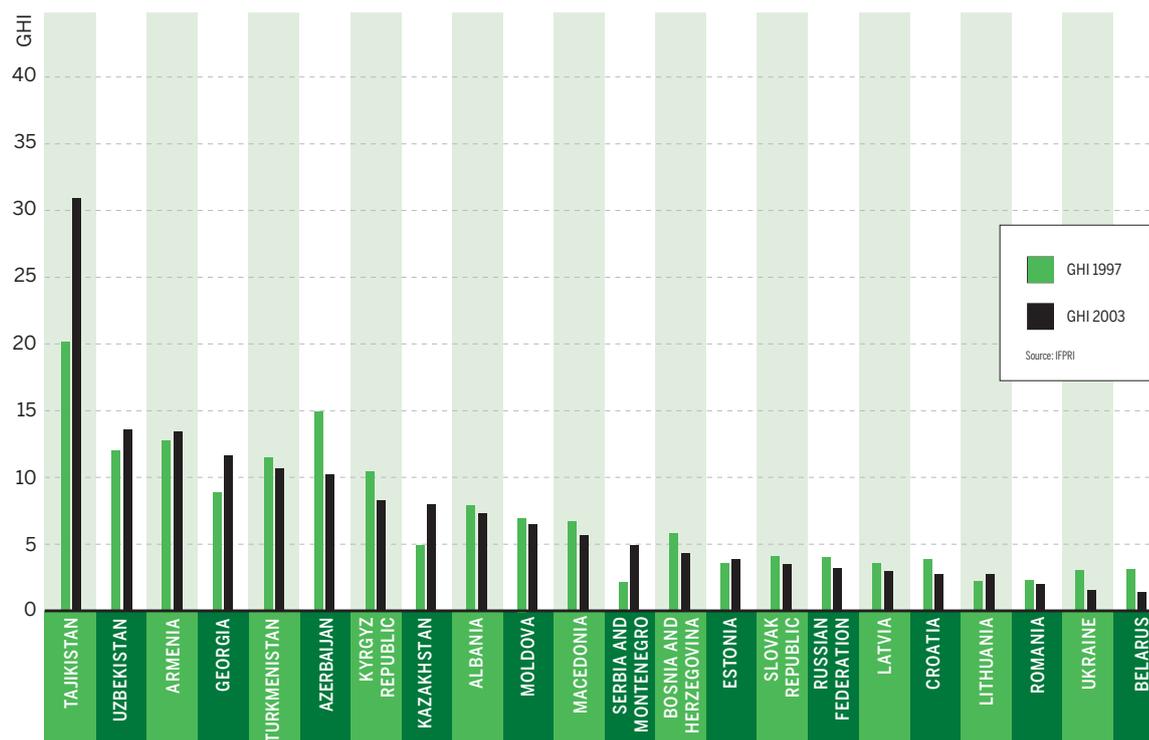
### South America

GHI trends from 1981 to 2003 by country



### Eastern Europe and the former Soviet Union

GHI trends from 1981 to 2003 by country



## E. | Data underlying the calculation of the GHI

Country	Proportion of undernourished in the population (in %)				Prevalence of underweight in children under five (in %)				Under-five mortality rate				Global Hunger Index (GHI)			
	1979-81	1990-92	1995-97	2000-02	1977-82	1987-92	1993-98	1999-2003	1980	1992	1997	2003	1981	1992	1997	2003
Afghanistan	-	-	-	-	20.9*	40.3*	49.3	-	28.0	25.7	25.7	25.7	-	-	-	-
Albania	9.2	12.9	7.2	6.0***	14.2**	11.3**	11.7**	13.6	5.7	4.1	4.0	2.1	9.71	9.41	7.62	7.23
Algeria	9.0	5.0	6.0	5.0	18.0*	9.2	12.8	10.4	14.5	6.8	3.9	4.1	13.83	7.00	7.57	6.50
Angola	29.0	58.0	49.0	40.0	26.3*	35.3	36.3	30.5	26.1	29.2	29.2	26.0	27.13	40.83	38.17	32.17
Argentina	1.0	2.0	1.0	2.0	3.5*	1.2	5.4	1.4**	4.1	2.7	2.4	2.0	2.87	1.97	2.93	1.81
Armenia	-	-	30.3	34.0***	-	-	3.3	2.6	-	3.3	3.0	3.3	-	-	12.19	13.30
Australia	-	-	-	-	-	-	-	-	1.3	0.8	0.6	0.6	-	-	-	-
Austria	-	-	-	-	-	-	-	-	1.7	0.8	0.5	0.5	-	-	-	-
Azerbaijan	-	-	30.9	15.0***	-	-	9.3	6.7	-	5.2	4.5	9.1	-	-	14.89	10.27
Bahrain	-	-	-	-	12.6**	7.4**	8.7	4.4**	-	-	2.2	1.5	-	-	-	-
Bangladesh	42.0	35.0	40.0	30.0	70.1	61.8	56.3	47.9	21.1	12.2	10.9	6.9	44.40	36.33	35.73	28.27
Belarus	-	-	1.1	2.0***	-	-	8.2**	1.1**	-	-	1.8	1.7	-	-	3.71	1.59
Belgium	-	-	-	-	-	-	-	-	1.5	1.0	0.7	0.5	-	-	-	-
Benin	36.0	20.0	17.0	15.0	33.4*	23.5*	29.2	22.9	17.6	14.4	16.7	15.4	29.00	19.30	20.97	17.77
Bhutan	-	-	-	-	-	-	-	17.4	24.9	19.7	12.1	8.5	-	-	-	-
Bolivia	26.0	28.0	25.0	21.0	13.2	12.0	7.6	7.1**	17.0	11.4	9.6	6.6	18.73	17.13	14.07	11.57
Bosnia & Herzegovina	-	-	8.8	8.0***	-	-	6.3**	4.1	-	-	1.6	1.7	-	-	5.56	4.60
Botswana	28.0	23.0	27.0	32.0	34.4*	26.8*	17.2	12.5	9.4	5.6	4.9	11.2	23.93	18.47	16.37	18.57
Brazil	15.0	12.0	10.0	9.0	7.0*	7.0	5.7	3.8**	9.3	6.3	4.4	3.5	10.43	8.43	6.70	5.43
Bulgaria	-	-	8.7	11.0***	6.9**	4.1**	-	-	2.5	1.9	1.9	1.5	-	-	-	-
Burkina Faso	64.0	21.0	19.0	19.0	32.2*	27.1*	32.7	37.7	24.6	17.5	16.9	20.7	40.27	21.87	22.87	25.80
Burundi	38.0	48.0	63.0	68.0	25.9*	31.0	38.5**	41.1	19.3	17.8	17.6	19.0	27.73	32.27	39.71	42.70
Cambodia	62.0	43.0	44.0	33.0	44.3*	37.7*	47.4	45.2	33.0	18.1	16.7	14.0	46.43	32.93	36.03	30.73
Cameroon	20.0	33.0	33.0	25.0	17.3	15.1	20.6	17.0**	17.3	11.3	9.9	16.6	18.20	19.80	21.17	19.52
Canada	-	-	-	-	-	-	-	-	1.3	0.8	0.7	0.6	-	-	-	-
Central African Rep.	22.0	50.0	51.0	43.0	52.7*	31.9*	23.2	24.3	20.2	17.7	17.3	18.0	31.63	33.20	30.50	28.43
Chad	69.0	58.0	49.0	34.0	32.1*	30.6*	38.8	28.0	25.4	20.6	19.8	20.0	42.17	36.40	35.87	27.33
Chile	7.0	8.0	5.0	4.0	1.1	2.0*	0.8	0.7	3.5	1.7	1.3	0.9	3.87	3.90	2.37	1.87
China	30.0	16.0	12.0	11.0	23.8*	17.4	9.0	10.0	6.5	4.3	4.7	3.7	20.10	12.57	8.57	8.23
Colombia	12.0	17.0	13.0	13.0	16.7	10.1	8.4	6.7	5.9	1.9	3.0	2.1	11.53	9.67	8.13	7.27
Comoros	56.6	47.6	53.5	59.7***	23.0**	19.1	25.8	25.4	-	18.2	9.3	7.3	-	28.31	29.55	30.81
Congo, Dem. Rep.	37.0	32.0	60.0	71.0	27.9*	33.2*	34.4	31.0	12.5	10.9	10.8	10.8	25.80	25.37	35.07	37.60
Congo, Rep.	29.0	54.0	59.0	37.0	39.1*	23.9	-	-	20.4	18.7	20.7	20.5	29.50	32.20	-	-
Costa Rica	8.0	6.0	5.0	4.0	6.0	2.3	4.1	-	2.9	1.6	1.4	1.0	5.63	3.30	3.50	-
Cote d'Ivoire	7.0	18.0	16.0	14.0	14.1*	12.3*	21.3	21.2	18.0	12.0	15.0	19.2	13.03	14.10	17.43	18.13
Croatia	-	-	10.0	7.0***	-	-	0.6	0.5**	-	-	0.9	0.7	-	-	3.84	2.72
Cuba	3.0	8.0	18.0	3.0	8.3*	8.4*	4.1**	3.9	2.6	1.0	0.8	0.8	4.63	5.80	7.62	2.57
Cyprus	-	-	-	-	-	-	-	-	-	1.0	0.9	0.5	-	-	-	-
Czech Republic	-	-	-	-	-	1.0	-	-	-	1.0	0.7	0.4	-	-	-	-
Denmark	-	-	-	-	-	-	-	-	1.0	0.7	0.6	0.4	-	-	-	-
Djibouti	55.4	57.6	39.6	29.2***	-	22.9	18.2	19.7**	-	15.8	15.6	13.8	-	32.09	24.45	20.90
Dominican Republic	25.0	27.0	26.0	25.0	14.0*	10.3	5.9	5.3	9.4	4.8	5.3	3.5	16.13	14.03	12.40	11.27
Ecuador	12.0	8.0	5.0	4.0	19.0*	16.5	14.3	12.0**	10.1	5.7	3.9	2.7	13.70	10.07	7.73	6.22
Egypt, Arab Rep.	8.0	4.0	3.0	3.0	14.9	10.4	10.7	8.6	18.0	5.9	7.3	3.9	13.63	6.77	7.00	5.17
El Salvador	17.0	12.0	14.0	11.0	20.9*	15.2	11.8	9.9	12.0	6.0	3.6	3.6	16.63	11.07	9.80	8.17
Eritrea	-	-	68.0	73.0	-	-	43.7	39.6	-	-	11.6	8.5	-	-	41.10	40.37
Estonia	-	-	3.7	5.0***	-	-	3.0**	4.8**	-	-	2.3	0.9	-	-	3.00	3.56
Ethiopia	53.5	74.7	61.0	46.0	38.1	43.8	46.6**	47.2	26.0	20.4	17.5	16.9	39.20	46.31	41.72	36.70
Fiji	-	10.1	7.6	5.1***	10.3**	8.4**	7.9	2.1**	-	-	2.4	2.0	-	-	5.97	3.07
Finland	-	-	-	-	-	-	-	-	0.9	0.5	0.4	0.5	-	-	-	-
France	-	-	-	-	-	-	-	-	1.3	0.9	0.5	0.5	-	-	-	-
Gabon	13.0	10.0	8.0	6.0	16.1*	15.1*	10.0**	11.9	19.4	15.4	14.5	9.1	16.17	13.50	10.83	9.00
Gambia, The	57.0	22.0	31.0	27.0	25.6*	17.1*	26.2	17.2	-	21.6	8.7	12.3	-	20.23	21.97	18.83
Georgia	-	-	21.2	27.0***	-	-	3.4**	3.1	-	2.8	2.9	4.5	-	-	9.17	11.53
Germany	-	-	-	-	-	-	-	-	1.6	0.7	0.5	0.5	-	-	-	-
Ghana	61.0	37.0	18.0	13.0	30.9*	27.1	27.3	22.1	15.7	17.0	10.7	9.5	35.87	27.03	18.67	14.87
Greece	-	-	-	-	-	-	-	-	2.3	1.0	0.8	0.5	-	-	-	-
Guatemala	17.0	16.0	21.0	24.0	43.6	28.5	26.6	21.9	13.6	7.3	5.5	4.7	24.73	17.27	17.70	16.87
Guinea	30.0	39.0	31.0	26.0	23.4	24.0*	22.8**	23.2	27.6	22.6	20.1	16.0	27.00	28.53	24.64	21.73
Guinea-Bissau	39.6	23.0	30.7	34.4***	23.7**	21.4**	23.5**	25.0	29.0	23.5	22.0	20.4	30.75	22.61	25.39	26.61
Guyana	13.0	21.0	12.0	9.0	22.1*	18.0*	18.3	13.6	-	6.3	8.2	6.9	-	15.10	12.83	9.83
Haiti	47.0	65.0	59.0	47.0	37.4	26.8	27.5	17.2	19.5	13.0	13.2	11.8	34.63	34.93	33.23	25.33
Honduras	31.0	23.0	21.0	22.0	21.2*	20.6	25.4	16.0	10.0	5.6	4.5	4.1	20.73	16.40	16.97	14.03
Hungary	-	-	-	-	-	2.2	-	-	2.6	1.5	1.1	0.8	-	-	-	-
India	38.0	25.0	21.0	21.0	68.0*	61.0	45.4	47.5	17.7	12.2	10.8	8.7	41.23	32.73	25.73	25.73
Indonesia	26.0	9.0	6.0	6.0	45.7*	35.5	34.0	27.3	12.8	11.1	6.8	4.1	28.17	18.53	15.60	12.47
Iran, Islamic Rep.	9.0	4.0	3.0	4.0	14.4*	17.2**	10.9	9.5**	12.6	5.4	3.5	3.9	12.00	8.87	5.80	5.80
Iraq	-	-	-	-	14.5*	11.9	13.6**	15.9	8.3	7.1	12.2	12.5	-	-	-	-
Ireland	-	-	-	-	-	-	-	-	1.4	0.7	0.7	0.6	-	-	-	-
Israel	-	-	-	-	-	-	-	-	1.9	0.9	0.6	0.6	-	-	-	-
Italy	-	-	-	-	-	-	-	-	1.7	0.9	0.6	0.4	-	-	-	-
Jamaica	8.0	14.0	11.0	10.0	9.3	4.6	4.2	3.8	3.9	1.3	1.1	2.0	7.07	6.63	5.43	5.27
Japan	-	-	-	-	3.7	-	-	-	1.1	0.6	0.6	0.4	-	-	-	-
Jordan	6.0	4.0	7.0	7.0	9.4**	6.4	5.1	4.4	6.6	2.7	2.4	2.8	7.34	4.37	4.83	4.73
Kazakhstan	-	-	2.2	13.0***	-	-	8.3	4.2	-	4.9	4.4	7.3	-	-	4.96	8.17
Kenya	25.0	44.0	38.0	33.0	22.0	18.0	22.1	19.9	11.2	9.0	8.7	12.3	19.40	23.67	22.93	21.73
Korea, Dem. Rep. <sup>1</sup>	19.0	18.0	35.0	36.0	34.7**	25.2**	24.7**	19.5	4.3	3.2	3.0	5.5	19.35	15.48	20.91	20.33
Korea, Rep. <sup>2</sup>	-	2.0	2.0	1.0	-	-	-	-	1.8	0.9	0.6	0.5	-	-	-	-
Kuwait	4.0	23.0	5.0	5.0	10.1*	5.0*	1.7	4.8**	3.5	1.3	1.3	0.9	5.87	9.77	2.67	3.56
Kyrgyz Republic	-	-	15.2	6.0***	-	-	11.0	12.3**	-	5.8	4.8	6.8	-	-	10.34	8.36
Lao PDR	32.0	29.0	28.0	22.0	37.6*	34.0*	40.0	40.4	19.0	14.1	12.2	9.1	29.53	25.70	26.73	23.83
Latvia	-	-	4.8	4.0***	-	-	3.6**	3.0**	-	2.6	2.0	1.2	-	-	3.46	2.74

Country	Proportion of undernourished in the population (in %)				Prevalence of underweight in children under five (in %)				Under-five mortality rate				Global Hunger Index (GHI)			
	1979-81	1990-92	1995-97	2000-02	1977-82	1987-92	1993-98	1999-2003	1980	1992	1997	2003	1981	1992	1997	2003
Lebanon	8.0	4.0	3.0	3.0	14.0*	8.9*	3.0	3.8**	4.0	4.0	3.7	3.1	8.67	5.63	3.23	3.28
Lesotho	26.0	17.0	14.0	12.0	13.3	15.8	16.0	18.0	17.3	15.6	13.7	8.4	18.87	16.13	14.57	12.80
Liberia	22.0	34.0	42.0	46.0	20.8*	20.1*	26.5**	26.5	23.5	21.7	23.5	23.5	22.10	25.27	30.66	32.00
Libya	0.0	0.0	0.0	0.0	4.1*	4.0*	4.7	-	15.0	10.0	2.5	1.6	6.37	4.67	2.40	-
Lithuania	-	-	3.1	0.0***	-	-	2.8**	6.8**	-	2.0	1.5	1.1	-	-	2.47	2.64
Macedonia, FYR	-	-	12.0	11.0***	-	-	5.2**	5.7	-	-	2.3	1.1	-	-	6.50	5.93
Madagascar	18.0	35.0	40.0	37.0	30.1*	40.9	40.0	40.2**	21.6	16.4	15.8	12.6	23.23	30.77	31.93	29.92
Malawi	26.0	50.0	40.0	33.0	21.2	27.6	29.9	25.4	29.0	22.3	21.5	17.8	25.40	33.30	30.47	25.40
Malaysia	4.0	3.0	2.0	3.0	29.8*	25.6	20.1	19.0	4.2	1.7	1.1	0.7	12.67	10.10	7.73	7.57
Mali	59.0	29.0	32.0	29.0	34.3*	25.1	40.0	33.2	31.0	21.7	23.9	22.0	41.43	25.27	31.97	28.07
Mauretania	35.0	15.0	11.0	10.0	31.0	47.6	23.0	31.8	24.9	20.2	18.3	18.3	30.30	27.60	17.43	20.03
Mauritius	10.0	6.0	6.0	6.0	28.0*	17.0*	14.9	3.6**	4.2	2.2	2.3	1.8	14.07	8.40	7.73	3.80
Mexico	5.0	5.0	5.0	5.0	16.7*	14.2	9.5**	7.5	8.1	3.2	3.5	2.8	9.93	7.47	5.99	5.10
Moldova	-	-	10.1	11.0***	-	-	7.6**	4.8**	-	3.6	3.1	3.2	-	-	6.93	6.32
Mongolia	27.0	34.0	46.0	28.0	17.3**	12.3	13.0**	12.7	11.2	7.8	15.0	6.8	18.50	18.03	24.68	15.83
Morocco	10.0	6.0	6.0	7.0	16.6*	9.5	9.0	8.4**	14.5	5.9	7.2	3.9	13.70	7.13	7.40	6.42
Mozambique	54.0	66.0	58.0	47.0	43.8*	46.8*	26.1	23.7	26.9	28.2	20.8	15.8	41.57	47.00	34.97	28.83
Myanmar	19.0	10.0	7.0	6.0	42.0	36.7	28.2	31.8	14.6	11.1	11.4	10.7	25.20	19.27	15.53	16.17
Namibia	25.0	35.0	36.0	22.0	18.2**	26.2	23.5**	24.0	11.4	7.9	7.5	6.5	18.19	23.03	22.32	17.50
Nepal	46.0	20.0	26.0	17.0	66.2*	50.5*	46.9	48.3	17.7	12.8	10.4	8.2	43.30	27.77	27.77	24.50
Netherlands	-	-	-	-	0.7	-	-	-	1.1	0.8	0.6	0.5	-	-	-	-
New Zealand	-	-	-	-	-	-	-	-	1.6	0.9	0.7	0.6	-	-	-	-
Nicaragua	26.0	30.0	33.0	27.0	10.5	11.7**	12.2	9.6	14.3	7.2	5.7	3.8	16.93	16.30	16.97	13.47
Niger	32.0	41.0	42.0	34.0	49.0*	42.6	49.6	40.1	32.0	32.0	32.0	26.2	37.67	38.53	41.20	33.43
Nigeria	40.0	13.0	9.0	9.0	30.4*	35.3	35.0	28.7	19.6	19.1	18.7	19.8	30.00	22.47	20.90	19.17
Norway	-	-	-	-	-	-	-	-	1.1	0.8	0.4	0.4	-	-	-	-
Oman	-	-	-	-	24.9**	24.3	17.8	14.0**	9.5	2.9	1.8	1.2	-	-	-	-
Pakistan	31.0	24.0	19.0	20.0	54.7	40.2	38.2	35.0	15.1	13.7	13.6	10.3	33.60	25.97	23.60	21.77
Panama	22.0	21.0	23.0	26.0	15.7	11.0*	8.1	8.2**	3.1	2.0	2.0	2.4	13.60	11.33	11.03	12.21
Papua New Guinea	-	-	-	-	29.9	28.5**	26.5**	27.4**	9.5	9.5	11.2	9.3	-	-	-	-
Paraguay	13.0	18.0	13.0	14.0	7.0*	3.7	2.2**	-	6.1	3.4	3.3	2.9	8.70	8.37	6.16	-
Peru	28.0	42.0	19.0	13.0	16.7*	10.7	7.8	7.1	13.0	6.2	5.6	3.4	19.23	19.63	10.80	7.83
Philippines	27.0	26.0	23.0	22.0	33.2	33.4	31.8	27.1**	7.0	5.9	4.1	3.6	22.40	21.77	19.63	17.55
Poland	-	-	-	-	-	-	-	-	2.4	1.5	1.1	0.7	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	3.1	1.1	0.8	0.5	-	-	-	-
Qatar	-	-	-	-	-	-	5.5	3.7**	-	-	2.0	1.5	-	-	-	-
Romania	-	3.2	0.9	1.0***	5.9**	5.7	3.6**	3.2	3.6	2.9	2.6	2.0	-	3.92	2.36	2.07
Russian Federation	-	-	5.9	4.0***	-	-	3.0	2.7**	-	3.1	2.5	2.1	-	-	3.80	2.93
Rwanda	24.0	44.0	52.0	37.0	35.5*	29.4	27.3	24.3	22.2	14.1	17.0	20.3	27.23	29.17	32.10	27.20
Saudi-Arabia	3.0	4.0	4.0	3.0	14.9*	12.6*	15.4	10.7**	9.0	3.8	2.8	2.6	8.97	6.80	7.40	5.44
Senegal	19.0	23.0	25.0	24.0	19.4*	21.6	22.3	22.7	22.1	12.0	12.4	13.7	20.17	18.87	19.90	20.13
Serbia and Montenegro	-	-	3.2	11.0***	-	-	1.6	1.9	3.7	2.2	2.1	1.4	-	-	2.29	4.77
Sierra Leone	40.0	46.0	44.0	50.0	23.2	28.7	25.5**	27.2	30.1	28.4	31.6	28.4	31.10	34.37	33.70	35.20
Singapore	-	-	-	-	14.4	-	-	3.4	1.3	0.6	0.4	0.3	-	-	-	-
Slovak Republic	-	-	4.4	5.0***	-	-	6.1**	3.9**	-	1.8	1.1	0.8	-	-	3.87	3.22
Slovenia	-	-	-	-	-	-	-	-	-	-	0.6	0.4	-	-	-	-
Somalia	-	-	-	-	41.9*	38.8*	-	25.8	24.6	21.1	21.1	22.5	-	-	-	-
South Africa	5.5	5.8	7.3	5.5***	-	9.6**	8.2	10.9	9.1	6.9	6.5	6.6	-	7.42	7.32	7.66
Spain	-	-	-	-	-	-	-	-	1.6	0.9	0.5	0.4	-	-	-	-
Sri Lanka	22.0	28.0	26.0	22.0	47.5	37.3	37.7	26.4	5.2	1.9	1.9	1.5	24.90	22.40	21.87	16.63
Sudan	24.0	32.0	23.0	27.0	26.4*	33.7*	33.9	40.7	20.0	12.8	11.5	9.3	23.47	26.17	22.80	25.67
Suriname	-	13.0	10.0	11.0	-	-	15.2**	13.2	-	3.0	3.9	-	-	-	9.39	9.37
Swaziland	14.0	14.0	23.0	19.0	12.6*	8.8*	9.6**	10.3	-	10.7	9.4	15.3	-	11.17	14.00	14.87
Sweden	-	-	-	-	-	-	-	-	0.9	0.6	0.4	0.3	-	-	-	-
Switzerland	-	-	-	-	-	-	-	-	1.1	0.8	0.5	0.5	-	-	-	-
Syrian Arab Republic	3.0	5.0	4.0	4.0	16.0*	12.5*	12.9	6.9	7.3	3.9	3.3	1.8	8.77	7.13	6.73	4.23
Tajikistan	-	-	29.8	61.0***	-	-	22.2**	18.0**	-	8.3	7.6	11.8	-	-	19.86	30.25
Tanzania	23.0	37.0	50.0	44.0	23.8*	28.9	30.6	29.4	20.2	16.7	14.3	16.5	22.33	27.53	31.63	29.97
Thailand	28.0	28.0	20.0	20.0	36.0	22.2	17.6	14.5**	6.1	3.3	3.8	2.6	23.37	17.83	13.80	12.36
Timor-Leste	-	-	-	-	8.7***	-	-	45.8	-	-	-	12.4	-	-	-	22.29
Togo	31.0	33.0	25.0	26.0	23.2*	24.4	26.2	23.3**	17.5	13.5	12.5	14.0	23.90	23.63	21.23	21.10
Trinidad and Tobago	5.0	13.0	15.0	12.0	10.0*	6.7	6.5**	5.9	4.0	2.1	1.7	2.0	6.33	7.27	7.73	6.63
Tunisia	2.0	1.0	1.0	1.0	14.8*	10.3	9.0	4.0	10.2	3.6	3.3	2.4	9.00	4.97	4.43	2.47
Turkey	2.0	2.0	2.0	3.0	13.2*	10.5*	8.3	9.5**	14.1	8.4	4.5	3.9	9.77	6.97	4.93	5.45
Turkmenistan	-	-	14.6	9.0***	-	-	11.8**	12.0	-	8.9	7.8	10.2	-	-	11.40	10.40
Uganda	31.0	24.0	26.0	19.0	24.8*	23.0	25.5	22.9	18.1	18.5	13.7	14.0	24.63	21.83	21.73	18.63
Ukraine	-	-	6.3	3.0***	-	-	2.4**	0.9	-	2.5	2.4	2.0	-	-	3.71	1.97
United Arab Emirates	1.0	4.0	4.0	3.0	-	-	-	-	6.4	2.1	1.0	0.8	-	-	-	-
United Kingdom <sup>1</sup>	-	-	-	-	2.1	-	-	-	1.4	0.8	0.7	0.6	-	-	-	-
United States <sup>2</sup>	-	-	-	-	-	1.4	-	1.6	1.5	1.0	0.8	0.8	-	-	-	-
Uruguay	3.0	6.0	4.0	4.0	6.5*	7.4	4.4	2.8**	4.2	2.1	2.1	1.4	4.57	5.17	3.50	2.74
Uzbekistan	-	-	10.4	26.0***	-	-	18.8	7.9	-	6.6	6.0	6.9	-	-	11.74	13.60
Venezuela RB	4.0	11.0	16.0	17.0	10.2	5.1	5.3	4.4	4.2	2.4	2.5	2.1	6.13	6.17	7.93	7.83
Vietnam	33.0	31.0	23.0	19.0	53.1*	41.9	39.8	33.8	10.5	4.8	4.3	2.3	32.20	25.90	22.37	18.37
Yemen, Rep.	40.0	34.0	36.0	36.0	55.7	30.0	46.1	40.3**	21.0	13.7	10.0	11.3	38.90	25.90	30.70	29.19
Zambia	30.0	48.0	48.0	49.0	19.3*	25.2	23.5	28.1	16.0	20.3	20.2	18.2	21.77	31.17	30.57	31.77
Zimbabwe	30.0	45.0	47.0	44.0	23.5*	12.0	15.5	13.0	12.5	8.3	8.0	12.6	22.00	21.77	23.50	23.20

<sup>1</sup>North Korea, <sup>2</sup>South Korea, <sup>3</sup>USA, <sup>4</sup>UK and Northern Ireland, \*estimates of underweight prevalence in children were taken from UN ACC/SCN 1993, \*\*own estimates of underweight prevalence in children, \*\*\* proportion of undernourished for 1979-81, 1990-92, 1995-97 and 2000-02 is based on own estimates, source: IFPRI

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## F. | Bibliography for the GHI

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- Asfaw, Abay 2006. The Role of Food Price Policy in Determining the Prevalence of Obesity: Evidence from Egypt. *Review of Agricultural Economics* 28, No. 3, 305-312
- Bailey, K.; de Onis, M.; Blössner, M. (1998): Protein-Energy Malnutrition. In: Murray C. J. L.; Lopez, A. D. (eds.), *Malnutrition and the Burden of Disease: The Global Epidemiology of Protein-Energy Malnutrition, Anemias and Vitamin Deficiencies. The Global Burden of Disease and Injury Series Vol. 8*, Cambridge
- Berkman, Joanna (ed.) (2001): *Foreign Aid to End Hunger. Hunger 2001. Eleventh Annual Report on the State of World Hunger*. Bread for the World Institute, Washington DC
- Central Intelligence Agency (CIA) (2006): *The World Factbook 2006*. Central Intelligence Agency, Washington DC. Posted at [www.cia.gov/cia/publications/factbook/index.html](http://www.cia.gov/cia/publications/factbook/index.html)
- Cohen, Marc J. (2006): Implementing the Voluntary Guidelines: challenges and options. *Entwicklung & Ländlicher Raum* 40 (1): 21-23
- de Onis, Mercedes; Blössner, Monika (2003): The World Health Organization Global Database on Child Growth and Malnutrition: methodology and applications. *International Journal of Epidemiology* 32, 518-526
- DWHH (2006): Partner gegen den Welthunger unter [www.welthungerhilfe.de](http://www.welthungerhilfe.de)
- FAO (1996a): *Rome Declaration on World Food Security and World Food Summit Plan of Action*. FAO, Rome
- FAO (1996b): *The Sixth World Food Survey*. FAO, Rom
- FAO (1999): *The State of Food Insecurity in the World 1999*. FAO, Rome
- FAO (2001): *AIDS – a threat to rural Africa*. FAO Focus Paper Posted at [www.fao.org/Focus/E/aids/aids1-e.htm](http://www.fao.org/Focus/E/aids/aids1-e.htm)
- FAO (2002): *Afghanistan's women – the hidden strength of a war-torn land. News and Highlights*. FAO, Rome. Posted at <http://www.fao.org/news/2002/020105-e.htm>
- FAO (2003): *Proceedings of the International Scientific Symposium on the Measurement and Assessment of Food Deprivation and Undernutrition*. FAO, Rom
- FAO (2005): *The State of Food Insecurity in the World 2005*. FAO, Rom

- Feldbrügge, Torsten (2000): *Economic Aspects of Disaster Management in Developing Countries*. Peter Lang, Köln
- Gillespie, Stuart (2006): *AIDS, Poverty, and Hunger: An Overview*. In: Gillespie, Stuart (ed.), *AIDS, Poverty and Hunger – Challenges and Responses*. IFPRI, Washington DC
- Green, Reginald (1994): *The Course of the Four Horsemen: The Cost of War and its Aftermath in Sub-Saharan Africa*. In: Macrae, Joanna; Zwi, Anthony (eds.), *War and Hunger: Rethinking International Response in Complex Emergencies*. Zed, London
- Hazell, Peter B. R. (2003): *The Green Revolution*. In: Mokyr, J. (ed.), *Oxford Encyclopedia of Economic History*. Oxford, UK: Oxford University Press. Pp. 478-480
- Heidhues, Franz; von Braun, Joachim (2004): *Foreword*. In: Wiesmann, Doris, *An International Nutrition Index: Concept and Analyses at Country Levels*. Peter Lang, Frankfurt a. M.
- Messer, Ellen; Cohen, Marc J.; Marchione, Thomas (2001): *Conflict: a cause and effect of hunger*. Environmental Change and Security Project (ECSP) 7: 1-16. Woodrow Wilson Center for Scholars, Washington, DC
- Mollica, Richard F. (2000): *Invisible Wounds: Waging a New Kind of War*. *Scientific American* 282, No. 6, 54-57
- Rosegrant, Mark W.; Cline, Sarah A.; Li Weibo; Sulser, Timothy B.; Valmonte-Santos, Rowena A. (2005): *Looking Ahead: Long-term Prospects for Africa's Agricultural Development and Food Security*. 2020 Discussion Paper 41. IFPRI, Washington DC
- Rwelamira, J. K.; Kleynhans, T. E. (1996): *SADC agricultural potential assessment: Country profiles*. Development Paper 124, Development Bank of South Africa, University of Stellenbosch, Maitland
- Sedik, David; Wiesmann, Doris (2005): *Globalization and Food and Nutrition Security in the Russian Federation, Ukraine and Belarus*. In: Kracht, Uwe, Schulz, Manfred (eds.), *Food and Nutrition Security in the Process of Globalization and Urbanization*. Spektrum 84, Berlin Series on Society, Economy and Politics in Developing Countries. Lit Publisher, Münster
- Smith, Lisa C.; Haddad, Lawrence (2000): *Explaining Child Malnutrition in Developing Countries: a Cross-Country Analysis*. IFPRI Research Report No. 111. IFPRI, Washington, DC
- Smith, Lisa C.; Alderman, Harold; Aduayom, Dede (2006): *Food Insecurity in Sub-Saharan Africa: New Estimates from Household Expenditure Surveys*. IFPRI Research Report No. 146. IFPRI, Washington DC
- Streeten, Paul (1994): *Human Development: Means and Ends*. *AEA Papers and Pro-ceedings* 84 (2): 232-237
- Tomkins, Andrew; Watson, Fiona (1989): *Malnutrition and Infection – a Review*. UN ACC/SCN, Geneva
- Transparency International (2006): *Global Corruption Report 2006*. Pluto Press, London and Ann Arbor, USA
- UN ACC/SCN (1993): *Second Report on the World Nutrition Situation: Country Trends, Methods and Statistics*. Volume II, Geneva
- UNAIDS/WHO (2006): *Report on the Global HIV/AIDS epidemic – June 2006*. UNAIDS/WHO, New York, Geneva
- UNDP (2000), *Human Development Report 2000*. New York
- UNICEF (1990): *Strategy for Improved Nutrition of Children and Women in Developing Countries*. UNICEF, New York
- UNICEF (1995): *The State of the World's Children 1995*. UNICEF, New York
- UNICEF (1999): *The State of the World's Children 1999*. UNICEF, New York
- UNICEF (2005): *The State of the World's Children 2005*. UNICEF, New York
- Uppsala Conflict Data Program (UCDP) (2006): *Uppsala Conflict Database*. Department of Peace and Conflict Research, unter [www.pcr.uu.se/database/index.php](http://www.pcr.uu.se/database/index.php)
- von Braun, Joachim (1996): *Den Hunger beenden und Natur erhalten – Vorschau auf den Welternährungsgipfel*. *Spektrum der Wissenschaft*, No. 11, 76-82
- WHO (1997): *WHO Global Database on Child Growth and Malnutrition, Programme of Nutrition*. WHO, Geneva
- WHO (2006): *WHO Global Database on Child Growth and Malnutrition*. Updates unter [www.who.int/nutgrowthdb](http://www.who.int/nutgrowthdb)
- Wiesmann, Doris (2004): *An International Nutrition Index: Concept and Analyses at Country Levels*. Peter Lang, Frankfurt a. M.. Also: dissertation, University of Bonn, 2002
- Wiesmann, Doris (2006): *A Global Hunger Index: Measurement Concept, Ranking of Countries and Trends*. FCND (Food Consumption and Nutrition Division) Discussion Paper 212, IFPRI, Washington DC (forthcoming)
- Wilson, Sara E. (2000): *AIDS Mushrooms into a Development Crisis*. 2020 Vision News and Views, December. IFPRI, Washington DC
- Windfuhr, Michael (2006): *Das Recht auf Nahrung: ein neues Rechtinstrument verabschiedet*. *Entwicklung & Ländlicher Raum* 40 (1): 4-7
- World Bank (2000): *World Development Indicators on CD-ROM*, Development Data Group, Washington DC
- World Bank (2005): *World Development Indicators on CD-ROM*, Development Data Group, Washington DC
- World Bank (2006): *Repositioning Nutrition as Central to Development: A Strategy for Large-Scale Action*. *Directions in Development*. The World Bank, Washington DC



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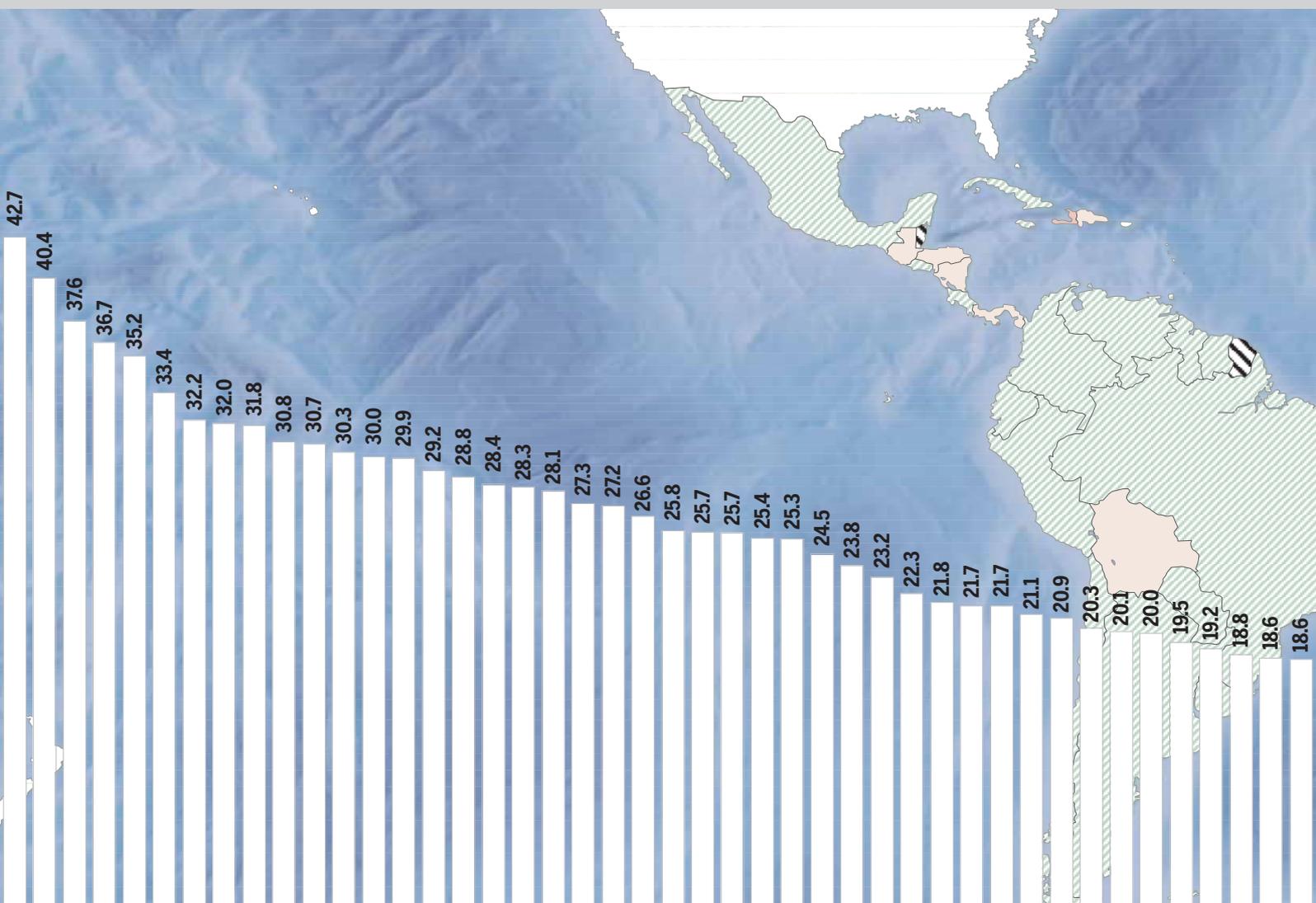
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