

# 7 Billion on the Brink

---

Who's really fighting the looming climate and hunger crisis?

**Embargoed until 13th October**



# Contents

---

04	<b>Glossary</b>	77	<b>Information on indicators, methodology and sources</b>
05	<b>Executive summary</b>	78	Total scores across indicators
05	A triple crisis	80	The vulnerability index
06	Recommendations	80	Indicator: Hunger
09	<b>Section 1 - Reality bites: How prepared are we for the triple crisis?</b>	83	Capacity and preparedness index
10	Are countries prepared?	83	Indicator: Legal framework
11	Crisis one: The climate crunch	84	Indicator: Sustainable agriculture
12	Crisis two: The resource crunch	85	Indicator: Social protection
15	Crisis Three: The food price crunch	87	Indicator: Gender equality
17	Ways forward and conclusions	89	Indicator: Climate adaption plans
18	What can we do to halt a deepening triple crisis?	92	<b>Endnotes</b>
19	Recommendations		
20 - 76	<b>Section 2 - HungerFREE scorecards</b>		

## Glossary

---

<b>AA</b>	ActionAid	<b>IMF</b>	International Monetary Fund
<b>ADP</b>	Agricultural Development Programme	<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>AIDS</b>	Acquired Immune Deficiency Syndrome	<b>MNREGA</b>	Mahatma Gandhi National Rural Employment Guarantee Act
<b>AU</b>	African Union	<b>NAPAs</b>	National Adaption Programmes of Action
<b>CAADP</b>	Comprehensive Africa Agriculture Development Programme	<b>NARP</b>	National Agricultural Response Programme
<b>CCAFS</b>	Research Program on Climate Change, Agriculture and Food Security	<b>NGO</b>	Non-Governmental Organisation
<b>CGIAR</b>	Consultative Group on International Agricultural Research	<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>COP</b>	United Nations Climate Change Conference of the Parties	<b>PARPA</b>	Poverty Reduction Strategy Paper
<b>CPI</b>	Consumer Prices Index	<b>PDS</b>	Public Distribution System
<b>DRC</b>	Democratic Republic of the Congo	<b>PEAP</b>	Poverty Eradication Action Plan
<b>FAO</b>	Food and Agriculture Organisation of the United Nations	<b>SISAN</b>	National System on Food and Nutritional Security
<b>FISP</b>	Farmer Input Support Programme	<b>SOFI</b>	State of Food Insecurity in the World
<b>GDP</b>	Gross Domestic Product	<b>UN</b>	United Nations
<b>GMO</b>	Genetically Modified Foods	<b>UNEP</b>	United Nations Environment Programme
<b>GNI</b>	Gross National Income	<b>US</b>	United States
<b>GOANA</b>	Great Offensive for Food and Abundance	<b>WB</b>	World Bank
<b>HDI</b>	Human Development Index	<b>WFP</b>	World Food Programme
<b>HIV</b>	Human Immunodeficiency Virus	<b>WHO</b>	World Health Organisation
<b>HNPSP</b>	Health, Nutrition and Population Sector Programme		
<b>IAASTD</b>	International Assessment of Agricultural Knowledge, Science and Technology for Development		

## Executive Summary

---

### A triple crisis

**Accelerating climate change, growing population and rising food prices pose a triple crisis that could lead to a collapse in global food systems. A predicted 30 per cent increase in world population by 2050, together with the severe impact of severe climate change on harvests, is widely forecast to set the scene for food scarcity in decades to come. This year's famine in East Africa provided a terrible preview of how such crises could play out in years to come, with severe drought, conflict over access to water and land, and high food prices interacting to push 13 million people into starvation.**

“Earth to run out of food by 2050?”, Time magazine’s December 2010 headline,<sup>1</sup> may have been an overstatement, but UN agencies, scientists and food policy experts concur that we are in serious trouble. There has been a flurry of conferences and reports calling for governments to act now. However, ActionAid’s new report is the first to show which of 28 developing countries are taking action against the climate/hunger crunch, and which are burying their heads in the sand. We examine the record of these 28 countries in two core areas: overall vulnerability to the climate/hunger crunch, and key policy measures that can reduce vulnerability. These are measured by our ‘Vulnerability’ and ‘Capacity /Preparedness’ indices (see Tables 1 and 2, for more information).

#### Crisis One: the climate crunch

The impact that climate change is predicted to have on farming is the first of three major threats to world food security. Over half a billion additional people in the tropics – 526 million people – could be at risk of hunger because of climate change by 2050, according to recent estimates by the Program on Climate Change, Agriculture and Food Security (CCAFS) used by ActionAid.

Scientists estimate that already global production of key staples, such as wheat and corn, has fallen by 3.8 per cent and 5.5 per cent respectively over the last three

decades, as a result of climate change. Crop yields from rain-fed agriculture in some southern African countries could fall by up to 50 per cent by 2020 because of climate change, and yields in central and south Asia could fall by 30 per cent by 2050.

Rich countries bear the overwhelming responsibility for the devastating impact that climate change is having on food production in poor countries. And their current actions are making things worse. A binding deal to limit global warming is nowhere in sight. Promised ‘fast start’ funding to cope with climate change is still only a trickle and aid funds for agriculture are still woefully inadequate, badly undermining poor countries’ chances of taking adequate steps to increase food production in time.

#### Crisis Two: the resource crunch

Pressure on ecosystem resources is the second part of the triple crisis. Land and water are being diverted away from the small-scale farmers who produce most of the food consumed in poor communities, and the natural resources needed to grow food are increasingly degraded. Since 1960, a third of the world’s farmland has been abandoned because it has been exhausted beyond use; about 10 million hectares are destroyed every year. The United Nations Food and Agriculture Organisation (FAO) says that in Africa alone 6.3 million hectares of degraded farmland has lost its fertility and water-holding capacity and needs to be regenerated to meet the demand for food from a population set to double there by 2050. The concurrent loss of locally-adapted and locally-available crops and plant varieties is of mounting concern, because it leaves rural communities less resilient and adaptive to changing weather patterns and conditions. Furthermore, it can take around 20 years to reverse land degradation, meaning that only long-term vision and action can halt these worrying trends.

#### Crisis Three: the food price crunch

Rising food prices – as a result of rapid population growth, stagnating yields and the conversion of cropland into biofuels production – is the third part of the crisis. High and volatile prices are already causing misery (with the real price of a typical

<sup>1</sup> Billion on the Brink. Who’s really fighting the looming climate and hunger crisis?

food basket up nearly 50 per cent over last year), and the Organisation for Economic Co-operation and Development (OECD) and FAO say there will be no let up. In real terms, commodity prices are projected to be 20 per cent higher for cereals and 30 per cent higher for meats from now until 2020 compared to 2000–2010. With poor people in developing countries spending anything between 50 to 80 per cent of their weekly household income on food, it is no surprise that the World Bank estimates that 44 million people fell into extreme poverty from June 2010-February 2011 because of high food prices.

### **New research findings**

ActionAid's research shows that 1.6 billion people – nearly a quarter of the world's population – live in countries that are highly vulnerable to climate-related food crises. They have very high underlying levels of chronic hunger and child malnutrition, coupled with rapid rates of land degradation that will make food production increasingly difficult as global warming intensifies. Only a few of these countries are putting adequate measures in place to assure future food security.

Our Hunger Scorecard, backed with in-depth surveys of the communities ActionAid works with, shows that these scenarios are no longer a distant nightmare. Across Asia, Africa and Latin America communities are recording higher food prices, incidences of land-grabbing for biofuels production or other purposes, and increased vulnerability to drought and floods. Every rural community surveyed reported that erratic and extreme weather is reducing their ability to feed themselves.

### **What needs to happen?**

There is no time to waste. Leaders must invest in making agriculture robust and resilient right now, enabling more food to be grown in a climate-stressed environment without further exhausting finite natural resources. It takes years to boost food production and make farming systems resilient. It cannot be done overnight.

A big part of the problem is getting rich countries to step up and take responsibility for their past and current emissions – the major cause of global warming. They must agree binding cuts to emissions and pay their climate debt by funding the costs of coping with the devastating impacts of global warming in poor countries, including collapsing food security.

Poor countries, however, do not have the luxury of waiting any longer to start doing

what they can themselves to protect their citizens from the possibility of future famine. It is inspiring that second and third places in this year's scorecard index measuring policy preparedness go to Malawi and Rwanda – two of the poorest countries in the world but nevertheless investing strongly in agriculture, planning well for climate change, and beginning to expand social welfare systems to cushion poor people from hunger shocks.

Greater investment in sustainable small-scale farming – which is climate resilient, renews ecosystems and reduces hunger and poverty – will be a central tool in tackling the triple crisis. Putting women smallholder farmers at the heart of these efforts will be essential to success, given that about half of the world's food is produced by smallholder farmers, the vast majority of whom are women.

## **Recommendations**

There are many things that leaders can do now to confront the food/climate/resource crisis. Recognising the scale, speed and urgency of these challenges is the first step. Learning lessons from what is already working in some countries is the next vital stepping stone.

### **1. Support sustainable small-scale farming techniques that are climate resilient**

- Improve women's access and control over land and other productive resources.
- Devote at least 10 per cent of the budget to agriculture and ensure the majority of this support is going towards staple crops on which poor communities rely, and towards the small farmers, especially women, who grow them.
- More widely, those G8 and G20 countries that pledged to support smallholder based agriculture and rural development in Asia, Africa and Latin America with US\$22 billion by 2012 should deliver on their promises.

### **2. Climate-proof farming and protect fragile natural resource base on which it depends**

- Expand support for sustainable, agro-ecological techniques that integrate water and soil conservation into farming systems. Such practices (including increased crop rotation, reduced use of chemical inputs, use of local seed varieties, water

harvesting and smarter irrigation techniques) have been proven to increase climate resilience and combat land degradation.

- Enact national legislation to protect women and other groups with insecure or customary tenure from land grabbing, and give them secure land ownership and access.
- The European Union and the US must eliminate biofuel targets and subsidies, which contribute to increasing food prices, resource crunches and land grabbing.
- All UN member states should enact binding regulations on cross-border land deals that threaten food security.
- National legislation must be enacted that protects women from land grabbing and gives them secure land ownership and access.

### 3. Build buffers against food price shocks, such as social protection programmes and national and regional food reserves

- Social protection is vital to ensuring that the poorest people can access food; governments must expand social protection schemes to ensure households do not fall into hunger.
- Governments must build better shock absorbers and greater resiliency into national and regional food systems by strengthening food reserves, in order to tackle food price spikes and emergencies.
- Many countries in Africa and beyond are currently bolstering their food reserves, and the G20 has committed to supporting a new pilot project for an emergency regional reserve in West Africa. They must expand this vision and support national buffer reserves.

### 4. Stop climate chaos

- Rich nations must agree to deeper cuts to their greenhouse gas emissions to keep temperatures from rising over 1.5°C. If they fail, the world could warm up by up to 5°C, with catastrophic consequences for food systems worldwide.
- Rich countries must set out plans for delivering the US\$100 billion a year they have promised by 2020 to enable developing countries to adapt their agricultural systems and climate-proof their economies.
- Poor countries must start ensuring that their adaptation plans effectively address agriculture, especially smallholder farmers.

### Table 1: Overall vulnerability index rankings

Countries are ranked from most to least vulnerable, ie most vulnerable at the top and least vulnerable at the bottom. For more information on methodology, see Section 3.

Country	Climate, food insecurity, vulnerability	Existing hunger	Overall vulnerability rank
Weight	50%	50%	
DR Congo	1	1	1
Burundi	3	2	2
South Africa	15	4	3
Haiti	12	6	4
Bangladesh	4	8	5
Zambia	2	10	6
India	24	3	7
Sierra Leone	5	9	8
Ethiopia	17	7	9
Rwanda	8	13	10
Liberia	7	13	11
Tanzania	10	14	12
Guatemala	9	17	13
Nepal	6	17	14
Pakistan	28	5	15
Mozambique	18	11	16
Cambodia	14	17	17
Lesotho	11	25	18
Vietnam	13	21	19
Kenya	19	19	20
Malawi	21	18	21
China	16	27	22
Brazil	20	25	23
Nigeria	26	20	24
Uganda	25	23	25
Senegal	23	26	26
The Gambia	27	23	27
Ghana	22	28	28

**Table 2: Overall capacity and preparedness index**

Countries are ranked from most to least prepared, ie most prepared at the top and least prepared at the bottom. For more information on how this index was compiled, see Section 3.

Country	Legal Commitment	Sustainable agriculture	Social protection	Gender equality	Climate change adaptation	Overall capacity and preparedness rank
Weight	10%	30%	20%	10%	30%	
Brazil	1	2	1	1	3	1
Malawi	4	1	12	13	1	2
Rwanda	23	7	20	15	2	3
Ethiopia	13	5	13	24	7	4
Tanzania	6	8	27	10	9	5
Nepal	10	11	24	14	4	6
Uganda	5	16	28	17	8	7
Bangladesh	15	9	9	25	12	8
Haiti	11	3	25	5	18	9
South Africa	3	22	3	7	13	10
China	27	13	5	20	14	11
Lesotho	25	21	6	6	3	12
Zambia	26	12	22	21	10	13
Burundi	16	4	18	8	21	14
Ghana	17	25	14	11	6	15
Liberia	18	23	15	23	5	16
Sierra Leone	19	10	21	28	25	17
India	7	20	2	27	17	18
Mozambique	9	15	10	18	23	19
Nigeria	14	19	16	22	11	20
Guatemala	2	26	4	4	26	21
Viet Nam	28	6	11	3	28	22
The Gambia	22	14	19	16	22	23
Kenya	8	18	7	12	19	24
Cambodia	20	27	23	2	15	25
Senegal	24	17	8	9	24	26
Democratic Republic of Congo	12	24	26	19	16	27
Pakistan	21	28	17	26	27	28



----->

Section 1 - **Reality bites: how prepared are we for the triple crisis?**

----->

## Reality Bites: how prepared are we for the triple crisis?

**The world today confronts three interlocking crises – climate change, resource scarcity and food price volatility – which all pose major threats to feeding the future. We can no longer treat these challenges to humanity in isolation. We must generate more energy without increasing greenhouse gas emissions or endangering food supplies, just as we must reverse climate change trends without reducing food production or putting energy out of reach of communities who need it for development.**

To step up national and international responses, we need also to assess where the greatest vulnerabilities lie, and how well countries and their donor partners are addressing them. ActionAid's 2011 Hunger Scorecard report surveys 28 developing countries to begin answering those questions. We examine the record of these countries in two core areas: overall vulnerability to the climate/hunger crunch, and key policy measures that can reduce vulnerability. These are measured by our Vulnerability and Capacity /Preparedness indicators (see Tables 1 and 2 above for more information). This enables us to determine the most appropriate strategies for tackling hunger and pinpoint the areas that will need the most attention – now and in the future.

The scorecard Vulnerability Index assesses countries' vulnerability to increasing hunger in the face of climate change. It uses current hunger levels and child malnutrition rates to assess underlying food insecurity. It then looks at pre-existing environmental and land degradation as a simple proxy for likely vulnerabilities of the agricultural sector in the present and in the future.

Our Capacity and Preparedness Index gauges policy interventions that can mitigate hunger and climate risks, such as increased support for agriculture, rural development and smallholder farmers, while also assessing countries' plans to adapt their agricultural sectors to increasing pressures from climate change. For more information on the indicators, see Section 3.

### Are countries prepared?

Perhaps unsurprisingly, seven out of 10 most vulnerable countries in our Vulnerability index are in Africa – Democratic Republic of Congo (DRC), Ethiopia, Rwanda, Sierra Leone, South Africa, Zambia, and Burundi. Two – India and Bangladesh – are large South Asian countries. Of these 10 most vulnerable countries, only Rwanda and Ethiopia score well on the Capacity and Preparedness index (ie they are relatively well prepared). The remaining 10 extremely vulnerable countries are dramatically underprepared.

These countries alone account for a total population of 1.6 billion people. This means that almost a quarter of the global population is living in countries we ranked as falling into a category of very high future vulnerability.<sup>2</sup>

Some countries in our survey already have severe levels of hunger, with negligible capacity to cope with future shocks. For instance, in the DRC, already 60 per cent of the population are chronically hungry, while one in three children is malnourished. Meanwhile, over 50 per cent of land, which could have been used for agriculture, is degraded, and the country's climate adaptation plans are wholly inadequate.<sup>3</sup> Taken together, this pre-existing vulnerability and lack of policy preparedness will have a devastating impact on already staggering hunger figures.

Other countries, already contending with growing food insecurity, could have to deal with deepening hunger scenarios if they do not dramatically reverse their current policies. Take Pakistan, where conflict, natural disasters and rising global food prices<sup>4</sup> have pushed 83 million people – almost half its population – into hunger.<sup>5</sup> Pakistan is already ranked as our fifth most hungry country. It could take years to get the agricultural sector back on track following the devastating floods that swamped one-fifth of the country last year.<sup>6</sup> The picture is foreboding, with flooding

happening again this year and Pakistan falling at the bottom of our scorecard rankings for climate and agriculture preparedness.

Other countries such as Vietnam, which have been spectacularly successful in reducing hunger and poverty in recent years, are in serious danger of being derailed by climate change. It is predicted that rising sea-levels could affect 5 per cent of Vietnam's land area, 11 per cent of its population and a whopping 78 per cent of its agriculture.<sup>7</sup> The Mekong Delta region is likely to suffer the most from climate change. When the sea level rises, one-third of the region's agricultural land will vanish, seriously affecting production.<sup>8</sup> At present, Vietnam's adaptation plans do not sufficiently reflect the urgency of the need to adapt its farming systems to a changing climate. It is for this reason that, in spite of good grades in areas such as agricultural investment and overall hunger numbers, the country is pulled down our scorecard rankings through a lack of policies to effectively adapt to the impacts of climate change.

Overall, many of those countries most likely to be climate and hunger hotspots by 2050 appear to be doing least to adapt to and confront the challenge. Our review of 28 countries shows that potential hunger hotspots such as South Africa, Burundi, Guatemala, Kenya, Lesotho and Sierra Leone are all ill-prepared.

These countries need rich countries to cut their emissions now, but their farmers also need urgent support from their governments and from the international community to fund investment in climate-resilient agriculture.

### **Crisis one: The climate crunch**

Projections of the likely impacts of climate change on agriculture by 2050 are getting more acute by the year.

Climate change is already having dramatic consequences for agriculture and international food security. Scientists estimate that global production of key staples such as wheat and corn fell by 3.8 per cent and 5.5 per cent, respectively, over the last three decades as a result of climate change.<sup>9</sup>

Increasing temperatures, leading to lower and erratic rainfall, warming and rising sea levels, melting glaciers, more frequent storms, typhoons, hurricanes and wildfires, plus droughts and run-away land degradation, are already a reality. Periodic surveys by ActionAid in 28 countries over 2011 indicate that climate impacts are disrupting farming practices in all countries surveyed.

The question is how much worse will it get? Most experts believe that thanks to a deadlock in international negotiations over emissions cuts, the window to limit temperature increases to 2°C has already closed. If leaders fail to implement binding emissions targets soon, the world could be on track to warm up by 4–5°C, with disastrous consequences for farmers and agriculture. Alarming, the chief economist at the International Energy Agency, Fatih Birol, says that global temperatures have not been 3°C higher than today for about 3 million years.<sup>10</sup>

The longer-term implications for agriculture are particularly daunting, as shifts in rainfall, temperature and relative humidity occur. The Intergovernmental Panel on Climate Change (IPCC) estimates that crop yields from rain-fed agriculture in some southern African countries could fall by up to 50 per cent by 2020 because of climate change. Other scientists project that yields in central and south Asia could fall by 30 per cent by 2050.<sup>11</sup>

The Consultative Group on International Agricultural Research (CGIAR) Research and the Program on Climate Change, Agriculture and Food Security (CCAFS) recently identified hunger hotspots in the tropics that may be highly vulnerable to climate change by 2050 due to shorter growing periods, less reliable growing periods, erratic rainfall and less predictable temperatures. Most regions in the tropics will experience a change in growing conditions that will require adaptation to current agricultural systems, says CCAFS. Shorter growing periods will hit heavily-cropped areas as diverse as Mexico, northeast Brazil, the African Sahel, Morocco, and parts of southern Africa and India.<sup>12</sup> Over half a billion additional people in the tropics – 526 million people – could be at increased risk of hunger because of climate change by 2050, according to recent estimates by CCAFS used by ActionAid.<sup>13</sup>

Reliable crop growing days (more than 90 reliable growing days per year) will drop to critical levels below which cropping might become too risky to pursue as a livelihood strategy in a large number of places, including West Africa, parts of East Africa, southern Africa, the Indo-Gangetic Plains and south India.

<sup>7</sup> Billion on the Brink. Who's really fighting the looming climate and hunger crisis?

While these projections contain considerable uncertainties, overall, CCAFS says that southern Africa has the largest area with multiple climate change threats – including Namibia, Angola, Zambia, Botswana, Mozambique and South Africa. Next are north-eastern Brazil, Mexico, Guyana, Nicaragua, and small areas in Tanzania, Ethiopia, the DRC, Uganda, India, Pakistan and the Middle East.<sup>14</sup>

With such alarming climate scenarios becoming starker by the day, it is little wonder that the World Bank estimates that developing countries will need US\$75–\$100 billion per year to mitigate and adapt their economies, natural resources and agricultural systems to rapidly intensifying climate change.<sup>15</sup>

Agriculture is a source of livelihoods for 86 per cent of rural people (or an estimated 2.5 billion people).<sup>16</sup> But do current climate adaptation plans focus on supporting and equipping those on the agricultural front lines – poor women and smallholder farmers?

Our review of existing vulnerability and of the National Adaptation Plans and other climate adaptation plans in the hunger scorecard shows that potential hunger hotspots such as Mozambique and Pakistan are dramatically underprepared for the challenges underway. Even South Africa is only moderately prepared – with little focus on women or smallholders in its adaptation plans – even though it is expected to be a climate/hunger hotspot by 2050.<sup>17</sup>

Our Hunger Scorecard shows that Bangladesh will be particularly hard hit by global warming, which threatens to overturn all of the good work the country has done in recent years to get hunger levels beneath 30 per cent.<sup>18</sup> Bangladesh is ranked in our top five most vulnerable countries to climate change and hunger, with devastating predictions for much of the country over the coming years.

### **Crisis two: The resource crunch**

The rapid depletion of natural resources needed to grow food is the second part of the triple crisis, leaving millions of the poorest people unable to produce enough food and, also, in many places, threatening large-scale commercial farming with stagnating yields, rising costs and sustainability challenges.

### **Box 1: The Horn of Africa crisis: A forecast of more to come?**

The worst drought in 60 years in the Horn of Africa and the ensuing famine has demonstrated how vulnerable rural people's food security has already become. An estimated 13.3 million people are affected in Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan and Uganda, following the failure of seasonal rains which has resulted in one of the driest years since 1950 and the worst harvests in nearly two decades.<sup>19, 20</sup>

This crisis has revealed how ill-equipped and un-prepared we are for future challenges. Fragile ecosystems continue to be overexploited, and rural producers such as farmers are already on their knees following the withdrawal of government and donor support in past decades. Promised climate adaptation funding is only a trickle.

This dire situation has been exacerbated by high local cereal prices and conflict over scarce water and pasturage for animals.<sup>21</sup> Local cereal prices have more than tripled since 2010 in some areas of Somalia. And recent surveys from 34 areas across southern part of the country show that the average acute malnutrition prevalence is 36.4 per cent, with an average of 15.8 per cent with severe acute malnutrition.<sup>22</sup>

*"Hunger is dehumanizing. It gets to a level where you do not know how you will survive and you will do anything for a simple kernel of corn."*

*"It is a traumatizing situation as a young child to be without food. Your stomach is so empty that even when you are thirsty and you take water it makes you dizzy. You get so nauseated your body wants to vomit, but you haven't eaten,"*

**Peter Kimeu, a small-scale farmer in Machakos, Kenya, on hunger and drought in Kenya, International Herald Tribune, 12 September 2011**

## Environmental constraints

The pursuit of high-input agricultural intensification is directly threatened by the depletion of many of the resources that have sustained it. Soil degradation and water shortages are putting increasing pressure on agricultural production.

Water depletion is a major concern and constraint. Agriculture already accounts for 70 per cent of all freshwater withdrawals from rivers and aquifers. In arid regions – for example, in the Punjab, Egypt, Libya and Australia – non-renewable fossil aquifers are increasingly being over-pumped and depleted, and cannot be replenished.<sup>23</sup> In many areas of China and India, groundwater levels are falling by one to three metres a year.<sup>24</sup> Up to a quarter of India's annual agricultural harvest is estimated to be at risk because of groundwater depletion.<sup>25</sup> Nevertheless, demand for water for agriculture could rise by over 30 per cent by 2030 and total global water demand could double by 2050 owing to pressures from industry and urbanisation.<sup>26</sup>

Biodiversity has been destroyed too, posing a key but less recognised constraint going forward. The last century has seen the greatest loss of biodiversity through habitat loss, for instance, from the conversion of diverse ecosystems to agriculture.<sup>27</sup> The switch to high input, monoculture, and intensive agriculture, and associated habitat loss, means the variety of plants and crops that poor communities cultivate has declined dramatically.

This loss of locally-adapted and locally-available crops and plant varieties is of mounting concern. It leaves rural communities less resilient and adaptive to changing weather patterns and conditions. Many of the traits and qualities from community and locally-bred crops and plants – such as tolerance to drought or heat, waterlogging, saline soils or early or late maturity – are precisely the qualities that smallholder communities will need increasingly in their armoury to confront what are predicted to be highly localised climate change impacts.

## Land degradation

Since 1960, a third of the world's farmland has been abandoned because it has been degraded beyond use, and about 10 million hectares are destroyed every year.<sup>28</sup> Of the 11.5 billion hectares of vegetated land on earth, it is estimated about 24 per cent has undergone human-induced soil degradation, in particular through erosion.<sup>29</sup>

Degraded areas include around 30 per cent of all forests, 20 per cent of cultivated areas and 10 per cent of grasslands. About 1.5 billion people depend on ecosystems that are undergoing degradation.<sup>30</sup>

In Africa alone, the United Nations Food and Agriculture Organisation (FAO) says that 6.3 million hectares of degraded farmland has lost its fertility and water-holding capacity and needs to be regenerated to meet the demand for food from a population set to double by 2050.<sup>31</sup> In China, a recent report revealed that agriculture is a larger source of pollution than industry, and the use of heavy nitrogen fertiliser has led to widespread and highly acidic soils.<sup>32</sup> Overall, the UN Environment Programme (UNEP) says that about 2 billion hectares of the world's agricultural land is degraded from deforestation, salinisation and poor farming practices.<sup>33</sup>

Climate-related soil erosion has intensified, too, with two huge dust bowls emerging recently – one in north-west China and western Mongolia, the other in central Africa.<sup>34</sup> Indeed, one study projects that by 2080 land with severe climate or soil constraints in sub-Saharan Africa will increase by 26 million to 61 million hectares, or 9–20 per cent of the region's arable land.<sup>35</sup>

The Hunger Scorecard recognises the long-term impacts that land degradation has on countries' abilities to turn back the tide on environmental devastation to what was once arable soil. Bringing depleted or degraded soils back to life can take anything in the region of 20 years of interventions to replenish soils – in most cases, this is time we do not have.<sup>36</sup>

Some countries in the Hunger Scorecard, such as Rwanda, are attempting to respond to land degradation issues. Landlocked and mountainous, with a high population density and staggering rates of deforestation and soil erosion, the country has a hard battle ahead to continue to boost farm production.<sup>37</sup> Rwanda has lost half its forest cover since 1990, including all remaining primary forest. Trees have been cleared for agriculture and settlements, triggering periodic floods and heavy rains that destroy crops.<sup>38</sup> However, recognising the severity of the problem, Rwanda's government announced in February 2011 that it would undertake a countrywide restoration of its degraded soil, water, land and forest resources over the next 25 years. This is a welcome step in a country with such poor land degradation.<sup>39</sup>

Other countries have a much bleaker outlook. For instance India, already home to around one-quarter of the world's hungry,<sup>40</sup> has seen monsoon failure adversely affect the soil, leaving land barren. In fact, half of India's land is now classified as desertified.<sup>41</sup> Since India's land supports 16 per cent of the world's population and 18 per cent of its livestock, these pressures alone play a major role in promoting desertification.<sup>42</sup> India must develop climate and environmentally-responsive agricultural practices to halt further degradation.<sup>43</sup>

### Land grabs and biofuels

At the same time, poor rural communities are rapidly losing control over land, water and forests. This is partly due to urbanisation, but is also fuelled by governments' zeal to promote private sector development and foreign investment, and companies' rush to control and extract increasingly valuable resources such as minerals, oil, timber, water and land.

The FAO estimates that land lost to non-agricultural purposes could be almost 90 million hectares by 2050, and warns that rising competition for land is a growing concern.<sup>44</sup>

Intense and unprecedented demand for land for biofuels has been added to this mix. Biofuel mandates in rich countries – such as the EU target to generate 10 per cent of transport fuel from renewable sources by 2020 – are stoking demand for biofuels. It is now estimated that 18 to 44 million hectares of land could be converted for biofuels by 2030.<sup>45</sup>

Compared to an average expansion of global agricultural land which is less than 4 million hectares per year before 2008, an enormous 50 to 80 million hectares of land in middle- to low-income countries has been leased or bought up cheaply by foreign investors in secretive deals over the last five years.<sup>46</sup> About a fifth of these deals are for biofuels projects, whilst others are for export agriculture, mining or tourism.<sup>47</sup>

Poor tribal communities in the Dakatcha woodlands in southern Kenya, for example, are currently campaigning with ActionAid to scrap a proposed Italian-owned 50,000 hectare biofuels plantation, which threatens the livelihoods of 20,000 Watha and Giriama people, plus large swathes of endangered forest and thousands of rare plants and animals.<sup>48</sup>

### Box 2: Seven billion... and counting...

On 31 October 2011, the world's population will hit a key milestone of 7 billion people. By 2050 the global total will be 30 per cent higher than now, hitting 9.3 billion. This means 78 million more people to feed each year – 214,000 additional mouths every day.<sup>53</sup>

Much of this increase is projected to come from high-fertility countries – 39 in Africa, nine in Asia, six in Oceania and four in Latin America.<sup>54</sup> Significantly, the vast majority of the population growth by 2020 (86 per cent) is set to take place in large urban centres and megacities in poor countries.<sup>55</sup>

By 2050 there will be only one European country among the 20 most populous nations – the Russian Federation – and India will have become the most populous country, with 400 million people more than China.<sup>56</sup>

Asia's population, currently 4.2 billion, is expected to peak around 5.2 billion in 2052. Africa's is expected to more than triple by 2100, from 1 billion in 2011, to 2 billion by 2050, and reaching 3.6 billion in 2100.<sup>57</sup>

Africa's population is expected to account for almost 24 per cent of the world population in 2050 – up from 15 per cent at present – and by the end of the 21st century 10 out of the 20 most populous countries will be in Africa – Nigeria, Tanzania, the DRC, Uganda, Kenya, Ethiopia, Zambia, Niger, Malawi and Sudan. Nigeria, by then, will be the fourth most populous country in the world.<sup>58</sup>

However, people born in the developing world will use a much tinier share of the world's food, water, energy and carbon space over their lifetimes than those born in rich countries. The ecological footprint of an average person in a high-income country is currently about six times bigger than that of someone in a low-income country. To cite just one example, according to the UN population agency, each U.S. citizen consumes an average of 260 lbs. of meat per year, about 40 times more than the average Bangladeshi. To produce just one pound of feedlot beef requires about 2,400 gallons of water and 7 pounds of grain. So the problem is not overpopulation in poor countries: the problem is rampant overconsumption by the rich world, driving climate change and resource scarcity, which in turn makes it difficult or impossible for poor countries to accommodate the rates of population growth that are normal for their stage of development.

Besides the unacceptable loss of livelihoods, ActionAid argues that the jatropha grown on the proposed biofuel plantation would produce up to six times more greenhouse gas emissions than the fossil fuels they are meant to replace.<sup>49</sup>

“My people have lived here for generations,” says Joshua Kahindi Pekeshe, a tribal elder in the forest community of Dakatcha in Kenya. “If the plantation goes ahead, we will become squatters on our own land. We will lose our homes and farms, and the only school our children have. Why should we pay this high price to meet Europe’s energy needs?”<sup>50</sup>

Roughly two-thirds of all of these recent land grabs have been in sub-Saharan Africa,<sup>51</sup> and thousands of poor women and local people with weak, scant or non-existent land rights have invariably lost out. There are widespread reports of unfair encroachment and sometimes violent clearance of land, lack of prior and informed consent, intimidation, physical attacks, meagre compensation and non-materialisation of promised jobs and social benefits.<sup>52</sup>

Not all land deals benefit foreign interests. In Guatemala and India, for example, local companies are also major drivers of land grabs.

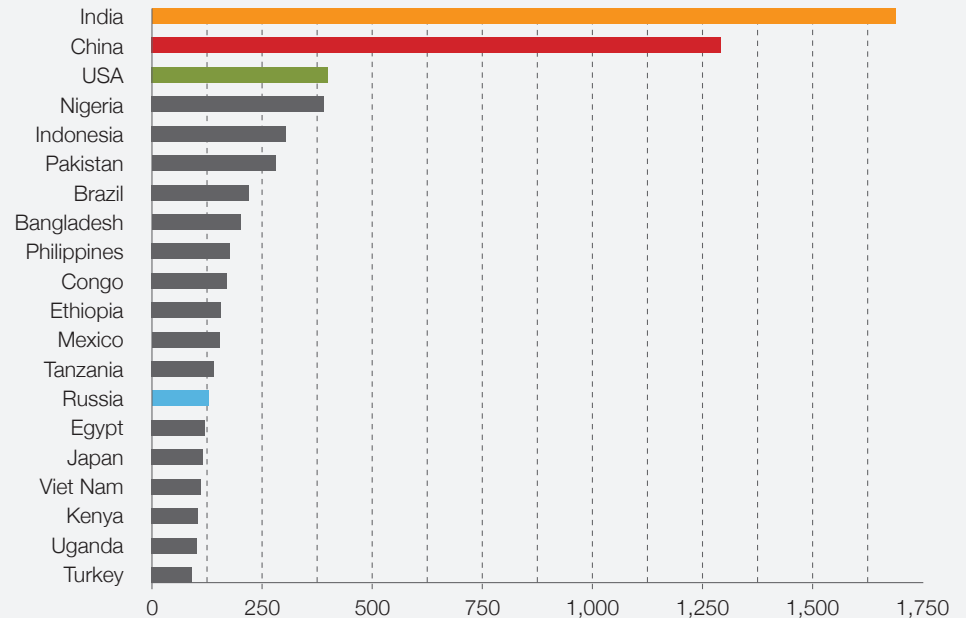
### **Crisis Three: The food price crunch**

A new era of high food prices, caused by rising demand for food and stagnating yields, is the third and final part of our triple crisis. High and volatile prices are already causing misery right now, and the Organisation for Economic Co-operation and Development (OECD) and FAO say there will be no let up. In real terms, commodity prices are projected to be 20 per cent higher for cereals and 30 per cent higher for meats from now until 2020 compared to 2000–2010.<sup>59</sup>

Demand for food, feed, fibre and biofuels is increasing, and considerably more food and crops will need to be produced by 2050. Total cereal demand is projected to grow by 70 per cent – or by 1,305 million tonnes – by 2050,<sup>60</sup> and demand for animal feed will increase by 553 million tonnes, or a staggering 42 per cent of the total cereal demand increase. Much more meat will be consumed, with consumption

**Graph 1. Population of the 20 most populous countries in 2050 (millions)**

From: *World Population Prospects: The 2010 Revision*, visit [www.unpopulation.org](http://www.unpopulation.org)



predicted to increase from 37.4 kg/person/year in 2000 to over 52 kg/person/year by 2050. To meet this demand, the global population of bovine animals is projected to increase from 1.5 billion animals in 2000 to 2.6 billion in 2050, and poultry numbers will more than double.<sup>61</sup>

The FAO also notes that the rate of growth in agricultural productivity is expected to slow by 1.5 per cent between now and 2030 and fall to 0.9 per cent between 2030 and 2050, compared with 2.3 per cent per year since 1961.<sup>62</sup>

### **High and volatile prices**

Poor people have been worst hit by this demand-squeeze. Local prices surged in

many poor countries in 2011: sorghum is up 300 per cent in Baidoa in Somalia; corn has jumped nearly 250 per cent in Kampala in Uganda; red beans are 125 per cent higher in Honduras; wheat is up 60 per cent in Herat in Afghanistan; and rice is 55 per cent more expensive in Dong Thap in Vietnam than it was a year ago.<sup>63</sup>

High global commodity prices – corn (up 84 per cent over the year to July), sugar (62 per cent), wheat (55 per cent), soybean oil (47 per cent) and crude oil (45 per cent) – have invariably stoked domestic food inflation, although with differing transmission rates and often with a time lag of three to six months.<sup>64</sup>

As a consequence, FAO's Food Price Index hit a record high of 238 points in February 2011 and has hovered at a few points from its peak since then.<sup>65</sup> Indeed, FAO says the cost of a typical food basket around the world has risen by 48 per cent in real terms over the year to June 2011.<sup>66</sup> Relative to the last food price crisis in 2007–2008, the World Bank estimated that in February 2011 world food prices were only 3 per cent below their 2008 peak. In some places, for some items, they even exceeded their 2008 levels.<sup>67</sup> With poor people in poor countries spending 50 to 80 per cent of their weekly household income on food, it is no surprise that the World Bank estimates that 44 million people fell into extreme poverty in low to middle-income countries this year because of high food prices (24 million net food producers escaped poverty by gaining from higher prices, they say).<sup>68</sup>

With extreme poverty closely linked to higher hunger and malnutrition rates, the World Bank warns that food prices are at “dangerous levels” and estimates that a further 10–34 million poor people could fall into extreme poverty (ie below the poverty line of \$1.25 a day) if the World Bank's Food Price Index continues to rise by 10 to 30 per cent.<sup>69</sup> The Asian Development Bank further warns that 64 million more people could fall into poverty in Asia if food prices continue to rise there by 10 per cent, a scenario they say that cannot be ignored.<sup>70</sup>

So why are food prices so dangerously high and volatile? Academics, researchers and analysts have identified the following main factors.<sup>71, 72</sup>

### **Food and energy**

An unprecedented convergence between agriculture and energy markets means that i) food commodity prices are more closely linked to crude oil prices than ever before because rising amounts of energy are being used for food production, fertiliser, storage and transport, and ii) demand for biofuels from agricultural crops – largely corn, sugar cane, soybean, jatropha and vegetable oils – will also likely increase dramatically unless government mandates are abolished.

A record 40 per cent of the US corn crop was diverted in 2011 into biofuels. Global ethanol production is expected to grow to 150 billion litres in 2020, an increase of 70 per cent from last year, and biodiesel production is projected to expand by almost 140 per cent over the same period, from 18 to 42 billion litres.<sup>73</sup>

Rising consumption of biofuels is one of the major factors pushing up total demand for food crops. In addition, a growing and more affluent global population needs more food to eat: more grains, but also more meat and dairy products, which in turn require grains in the form of animal feed. Wealthy industrialised countries still account for the biggest food intake per capita, and are by far the largest consumers of meat, as noted elsewhere in this report. However, there is some evidence that the “nutrition transition” that OECD countries experienced decades ago – a transition towards a higher-calorie diet heavier in animal protein, sugar and fat – is now accelerating in other parts of the world, notably in East Asia. Global demand for food is rising at a time when yields are stagnant or increasingly only slightly – in part due to the climate and environmental stresses highlighted in this report – so upward pressures on prices are likely to remain strong.<sup>74</sup>

### **Macroeconomic volatility**

A 10 per cent slide in the US dollar in late 2010 against pegged and other currencies has contributed to higher global prices for dollar-denominated food commodities.<sup>75</sup> So-called ‘quantitative easing’ and exceptionally low interest rate policies – such as in the USA, EU, China, UK and Japan – are associated with commodity price rallies, and may be fuelling high levels of food commodity market speculation, too. According to the OECD and FAO, most researchers agree that high levels of speculative activity



in futures markets may amplify price movements in the short term, although evidence is inconclusive on the longer-term effects on volatility.<sup>76</sup>

### Extreme and unpredictable weather

Unpredictable weather is the most frequent and significant factor causing price volatility. Poor harvests caused by extreme or unpredictable weather have been more significant in the 2011 food crisis than during the crisis in 2008. Price increases are now more consistent with market fundamentals and low stocks-to-use ratios. Recent weather shocks in wheat and barley have been buffeted by large stocks and past supply increases. Corn stocks were drawn down when US yields dropped in 2010 (global maize stocks are expected to hit near record lows of 13.9 per cent next year), and soybean stocks remained tight as Chinese demand has surged. Rice stocks are adequate, so rice prices have not increased.<sup>77</sup>

### Resource pressures

Retreat from polluted and degraded land, expansion into more marginal lands, higher input costs (such as for fertilisers and phosphorus), slower technology uptake, and limits to double-cropping and water irrigation, are limiting production rates. High oil prices – which recently dipped below US\$100 a barrel – have historically been associated with rising global food prices due to higher costs for oil-based fertiliser, processing and transport.

### Ways forward and conclusions

What does the reality of increasing food prices and the resource/climate crises look like for poor people? ActionAid's cross-country survey among communities revealed that poor families are already eating less nutritious food – cutting out vegetables, milk and meat – and in many places eat only one meal a day.

Some people reported eating wild fruits in Tanzania because of a scarcity of local foods caused by drought. Poor people in Kenya have sold their cattle at very low prices because of unusually dry weather. Others have migrated or sent young children out to work.<sup>78</sup>

A relatively short period of hunger and malnutrition can have long-lasting or permanently debilitating effects, especially for pregnant and lactating women and children under two. Malnourishment in the first two years of life leaves a child more vulnerable to infection and impaired cognitive development, meaning they will do less well in school, earn less as adults, and contribute less to the economy.<sup>79</sup>

After an all-too-brief pause of about a year or so, global hunger is on the rise again. In January this year the FAO warned that global food prices exceeded the 2008 peak during the so-called food price crisis that sparked food protests across Asia, Africa and Latin America.<sup>80</sup> Although prices stabilised in the spring, they were still just off record highs in September.<sup>81</sup> The UN Special Rapporteur on the Right to Food, Oliver De Schutter, says, "We will see more price spikes in the future, due to a growing discrepancy between supply and demand, the impacts of climate disruption on agricultural production, and the merger of the energy and food markets." In short, he concludes, "The food crisis is here to stay."<sup>82</sup>

### Box 3: Why women farmers?

Smallholder farmers produce 80 per cent of food in Africa and around half of food worldwide. In poor countries, 48–79 per cent of these smallholders are women, yet they are the ones most likely to go hungry.<sup>83</sup> This is because food and agricultural policies in many poor countries often neglect the needs of smallholders, and invariably ignore the needs and constraints that women face. Gender discrimination means that women own only 1 per cent of the land in Africa, and receive only 7 per cent of extension services and 1 per cent of all agricultural credit.<sup>84</sup>

If poor women in rural areas had the same access to education, training, technology, financial services and markets as men, the FAO says agricultural production could be increased by 2.5 to 4 per cent in developing countries and the number of hungry people cut by 100 to 150 million – or 12–17 per cent of the total worldwide.<sup>85</sup>

## What can we do to halt a deepening triple crisis?

Some countries are showing that not everything is doom and gloom. A growing number of Asian, African and Latin American governments surveyed in this report have clearly – and laudably – increased support for their agriculture, rural development and, in particular, smallholder farming sectors. In doing so, they are helping to drastically reduce hunger and poverty in their countries. Hence, these countries score well in terms of their current policy capacity in the Hunger scorecard. Some of these countries are also preparing their agricultural sector well to withstand the looming climate crisis. They show a pathway to reducing poverty, while protecting our planet.

Brazil is leader of the pack in the Hunger scorecard again this year. It has announced US\$10 billion of support for smallholder farmers who have benefited from land reform committed in 2011.<sup>86</sup> The government has also extended its genuinely women-focused Bolsa Familia social protection safety net to 12.4 million poor families and enshrined the right to food into its constitution.<sup>87</sup> Just as importantly, it has instated a robust policy of ensuring the country's agriculture is climate ready, with a national plan dedicated to the agricultural sector.

Rwanda is also investing in smallholders, having upped its agriculture budget to US\$112 million and boosted its allocation from a low of 5 per cent a few years ago to 10 per cent.<sup>88</sup> Meanwhile, it is setting out ambitious 25-year plans to reverse endemic land degradation and forest depletion.<sup>89</sup>

Malawi has enacted new policies aimed at coping with recurrent floods and drought through better environmental management. Malawi is promoting the uptake of organic fertilisers by smallholder farmers and is building up its food reserves. The government has drafted a National Adaptation Programme of Action to assist rural communities in coping with climate change.<sup>90</sup>

Other countries just beginning to make progress in reducing hunger are revealing the fragility of gains, highlighting the need to build more resilience and disaster preparedness. In Ethiopia, the number of food insecure people has decreased impressively from 5.2 to 3.2 million in the past year,<sup>91</sup> but recent drought and rising food prices highlight the need to build more resilience and disaster preparedness into its food supply.

These countries are beginning to show the way. But our vision must expand significantly if, by 2050, we are to feed 3 billion more people in a climate-stressed, resource-depleted world. An estimated 13–15 per cent of all global emissions leading to climate change – such as carbon dioxide, nitrous oxide and methane – are due to agriculture. This rises to 30 per cent if land use changes, such as deforestation, are included.<sup>92</sup>

Given that we must scale-up productivity to meet growing demands for food from burgeoning population growth how are we going to scale-up production whilst also using less energy, creating fewer emissions, and be more sustainable in its use of water resources? It must actively help rebuild and renew depleted soils, and have a particular focus on the needs of widely-neglected women, who comprise between 48 per cent to 79 per cent of small farmers in poor countries.<sup>93</sup>

Governments have pledged to reinvest massively in agriculture, and after three decades of neglect this is welcome news. But *how* it is invested is also critical to weathering the triple crisis and supporting pro-poor, environmentally sustainable development.

There are already solutions out there. Major studies show that ecological agriculture is highly productive in poor countries – boosting crop yields by an average of 79 per cent in a survey of 286 projects on small farms covering 37 million hectares in 57 countries worldwide, and by an average of 128 per cent in East Africa and 116 per cent across Africa overall. These sustainable farming approaches also address food insecurity, gender inequality and climate change issues.<sup>94, 95</sup>

The United Nations Environment Programme (UNEP) – like other key UN organisations,<sup>96</sup> experts<sup>97</sup> and international assessments such as the five-year, multi-stakeholder International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD)<sup>98</sup> – says we will be able to feed an extra 3 billion by 2050, but to do so, we need a historic shift towards resource-conserving, low carbon, sustainable agriculture and agro-ecology farming.<sup>99</sup>

IAASTD recommends building on the marginalised agricultural knowledge and skills of women in particular, and calls for a recognition of the multifunctional role that agriculture plays in local and wider economies.<sup>100</sup>

Greater investment in sustainable small-scale farming, the majority of it done by women, can renew ecosystems and significantly reduce hunger and poverty. Putting women smallholder farmers at the heart of these efforts will be essential to success. Half the world's food is produced by smallholder farmers.

## Recommendations

There are many things that leaders can do now to confront the food/climate/resource crisis. Recognising the scale, speed and urgency of these challenges is the first step. Learning lessons from what is already working in some countries is the next vital stepping stone.

### 1. Support sustainable small-scale farming techniques that are climate resilient

- Improve women's access and control over land and other productive resources.
- Devote at least 10 per cent of the budget to agriculture and ensure the majority of this support is going towards staple crops on which poor communities rely, and towards the small farmers, especially women, who grow them.
- More widely, those G8 and G20 countries that pledged to support smallholder based agriculture and rural development in Asia, Africa and Latin America with US\$22 billion by 2012 should deliver on their promises.

### 2. Climate-proof farming and protect fragile natural resource base on which it depends

- Expand support for sustainable, agro-ecological techniques that integrate water and soil conservation into farming systems. Such practices (including increased crop rotation, reduced use of chemical inputs, use of local seed varieties, water harvesting and smarter irrigation techniques) have been proven to increase climate resilience and combat land degradation.
- Enact national legislation to protect women and other groups with insecure or customary tenure from land grabbing, and give them secure land ownership and access.

- The European Union and the US must eliminate biofuel targets and subsidies, which contribute to increasing food prices, resource crunches and land grabbing.
- All UN member states should enact binding regulations on cross-border land deals that threaten food security.
- National legislation must be enacted that protects women from land grabbing and gives them secure land ownership and access.

### 3. Build buffers against food price shocks, such as social protection programmes and national and regional food reserves

- Social protection is vital to ensuring that the poorest people can access food, governments must expand social protection schemes to ensure households don't fall into hunger.
- Governments must build better shock absorbers and greater resiliency into national and regional food systems by strengthening food reserves, in order to tackle food price spikes and emergencies.
- Many countries in Africa and beyond are currently bolstering their food reserves, and the G20 has committed to supporting a new pilot project for an emergency regional reserve in West Africa. They must expand this vision and support national buffer reserves.

### 4. Stop climate chaos

- Rich nations must agree to deeper cuts to their green house gas emissions to keep temperatures from rising over 1.5°C. If they fail, the world could warm up by up to 5°C, with catastrophic consequences for food systems worldwide
- Rich countries must set out plans for delivering the US\$100 billion a year they have promised by 2020 to enable developing countries to adapt their agricultural systems and climate-proof their economies.
- Poor countries must start ensuring that their adaptation plans effectively address agriculture, especially smallholder farmers.



Section 2 - **HungerFREE** scorecards: a country-by-country breakdown



## HungerFREE Scorecard

### Country: **Bangladesh**

Leader: **Prime Minister Sheikh Hasina Wazed**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **8/28**

Indicator	Grade	Comment
Vulnerability Index		
Hunger	D	High hunger levels. Hunger increasing
Climate food insecurity	C	High climate vulnerability
Capacity and Preparedness Index		
Legal framework	D	No right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	D	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	B	Moderate climate adaptation plans



### Remarks:

Bangladesh continues to make strides in reducing hunger in the country, with the number of undernourished people dropping to 27 per cent as of January 2011.<sup>101</sup> These gains are severely threatened, however, by the impacts of climate change and skyrocketing food prices. Bangladesh is ranked in our top five most vulnerable countries to climate change and hunger, with devastating predictions for much of Bangladesh over the coming years. And while the government has some good adaptation plans in place, this is unlikely to prove sufficient to deal with the looming climate crisis and the dire predictions this will have in Bangladesh. As such, Bangladesh is ranked as the fourth most vulnerable country in the scorecard 'vulnerability' index.

As of April 2011, rice and wheat prices in Bangladesh were 42 per cent higher than they were a year ago.<sup>102</sup> With nearly half of Bangladesh's 135 million people already living below the poverty line, higher food prices will have a severe impact on poor people's ability to buy enough food.

Only 7.65 per cent of the national budget is devoted to agriculture and more resources are needed to help boost agriculture.<sup>103</sup> Estimates suggest that Bangladesh will need to produce 30 million more tonnes of rice each year to achieve self-sufficiency in food production.<sup>104</sup> To meet this goal, Bangladesh introduced an "Input Distribution Card" to nine million small-holder farmers to obtain cash subsidies for electricity and fuel for irrigation, and fertiliser at fixed prices.<sup>105</sup> Despite these initiatives, it's predicted that rice production will fall by 3.9 per cent each year due to a more erratic monsoon season caused by climate change.<sup>106</sup>

## Bangladesh scorecard continued

---

Bangladesh faces serious water-related challenges due to climate change, including scarcity of fresh water, increased incidents of flooding and river bank erosion, frequent and prolonged drought, as well as wider areas affected by salinity. The country's early warning system for floods, cyclones and storm surges is considered state-of-the-art, and the government is expanding community-based disaster preparedness. Still, more than 80,000 ha, which is approximately one per cent of arable land, is lost every year to climate change and urbanisation.<sup>107</sup>

Overall coverage of safety nets in Bangladesh is low. However, the government has recently increased spending on safety net programs, as evidenced by the creation of an Employment Generation Program.<sup>108</sup> While the discontinuation of the Micro-Nutrient Supplementation Programme could be seen as a step backwards,<sup>109</sup> the second phase of the Health, Nutrition and Population Sector Programme (HNPSP) is a good sign of attempts to provide social security nets for the population.<sup>110</sup> A new school feeding programme, launched in 2011 for some 73,000 urban working children – 60 per cent of whom are girls – is expected to improve both education and nutrition rates.<sup>111</sup>

While women play a central role in agriculture, social norms and customs limit their mobility, and in turn, their opportunities, leaving many to act as landless farmers who depend on casual labour and other irregular sources of income.<sup>112</sup>

## HungerFREE Scorecard

### Country: **Brazil**

Leader: **President Dilma Rousseff**

Overall 'preparedness' grade: **A (A-E)**

Overall 'preparedness' rank: **1/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low high hunger levels
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	A	Right to food legislation enacted
Sustainable agriculture	A	High agriculture budget
Social protection	B	High social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	A	Good climate adaptation plans



### Remarks:

Brazil continues to prove that hunger can be beaten. The country's 'Zero Hunger' strategy, involving 53 initiatives spread across 11 ministries,<sup>113</sup> has achieved many feats since it began in 2003, including reducing child malnutrition by 73 per cent between 2002 and 2008, as well as reducing child deaths by 45 per cent.<sup>114</sup> In February 2010, the right to food was inserted into the Constitution, strengthening the government's commitment to ensuring no Brazilians go hungry.<sup>115</sup> Additionally, the National System on Food and Nutritional Security (SISAN) aims to promote the right to adequate food.<sup>116</sup>

In July 2011, Brazil announced that it will invest an additional US\$10 billion in small farmers who have received land from the agrarian reform programme, including a minimum price policy and harvest purchase guarantees.<sup>117</sup> Resources allocated to providing credit have increased to US\$8 billion.<sup>118</sup> Brazil's Bolsa Familia Programme has provided social protection and access to health and education to 12.4 million families with a per capita income below US\$80.<sup>119</sup>

However, attention must be paid to land ownership, as Brazil is home to one of the most uneven distributions of land in the world.<sup>120</sup> Around 3.5 per cent of landowners hold 56 per cent of arable land, while the poorest 40 per cent own barely one per cent. Similarly, large landowners obtain more than 43 per cent of all agricultural credit, while farmers with fewer than 100 ha (88 per cent of the total number of all rural farms) captured only 30 per cent.<sup>121</sup>

## Brazil scorecard continued

---

Climate change predictions are dismal and hold the potential to derail the impressive gains made in the country's agriculture sector, with predictions of decreasing yields. The impact of this will be felt globally, as Brazil is the leading exporter of coffee, beef, soybeans, orange juice, and other farm products.<sup>122</sup> In community surveys carried out by ActionAid, it was reported that severe drought is affecting the production of food in the northeastern part of Brazil, with families producing less food. Overall, approximately 55 per cent of Brazilian households reported that they are eating lower quality food.

Brazil's National Plan on Climate Change focuses on curbing deforestation; reducing electricity consumption; improving annual increases in the use of sugarcane ethanol and setting minimum targets for ethanol content in diesel.<sup>123</sup> Achieving these goals, however, will depend on generating the necessary funds – not just domestically, through initiatives such as the Amazon Fund, but also internationally.<sup>124</sup> Presently, Brazil's contribution to global pollution levels stems almost entirely from destruction of the rainforest, as 75 per cent of Brazil's contribution to global greenhouse emissions is a result of deforestation.<sup>125</sup>



## HungerFREE Scorecard

### Country: **Burundi**

Leader: **Pierre Nkurunziza**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **14/28**

Indicator	Grade	Comment
Vulnerability Index		
Hunger	E	Very high hunger levels. Hunger increasing
Climate food insecurity	C	High climate vulnerability
Capacity and Preparedness Index		
Legal framework	E	No right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	D	Poor climate adaptation plans



### Remarks:

In Burundi, where 90 per cent of the population are farmers, food production has stagnated at pre-1993 levels.<sup>126</sup> Conflict, combined with extreme poverty, a fragile political process and recurrent climatic shocks, has had a very negative impact on Burundi.<sup>127</sup> Nearly half of the population suffers from chronic malnourishment, with as little as 19 per cent of the population being food secure.<sup>128</sup> In addition, Burundi is one of the countries in our scorecard found to be most vulnerable to hunger and climate change, which could lead to a grim future of increasing hunger levels.

Families are spending upward of 70 per cent of their incomes getting enough to eat due to the latest food price increases.<sup>129</sup> The price of beans alone has increased by 48 per cent,<sup>130</sup> while the price of rice has risen by 41 per cent.<sup>131</sup>

Acute food insecurity, climate hazards and limited access to land and basic services affect a large portion of the population. In recent years, the country has registered an unusually high number of natural disasters, which contributed to the displacement of communities, the destruction of livelihoods and the further deterioration of food and nutrition security. With the second-highest population density in Africa, Burundi faces three major environmental problems: degradation and exhaustion of soils, degradation of forestry resources and human environmental degradation.<sup>132</sup>

Burundi has developed projects to improve seasonal early warning climate forecasts and protect buffer zones in the Lake Tanganyika floodplain and

## Burundi scorecard continued

---

around the lakes of Bugesera.<sup>133</sup> The National Adaptation Programme of Action, however, will likely only be acted upon with the assistance of interested donors, since Burundi has very few finances to devote to adaptation and few institutions capable of leading on climate change adaptation.<sup>134</sup> All Burundian communities interviewed by ActionAid are experiencing a shortage of rainfall, or occasional flooding, which is affecting crop yields by up to 50 per cent in the central Ruyigi area of Burundi. Also in the southern Rutan area, 70 per cent of households reported eating only one meal per day, due to a reduction in crop production and a corresponding increase in food prices.

In 2009, Burundi signed onto the CAADP<sup>135</sup> and although its agricultural budget has not as yet reached the 10 per cent commitment, government officials have indicated that progressive increments should put Burundi on track to reach the target by 2012.<sup>136</sup>

The free school meal programme in Burundi has had good effects.<sup>137</sup> However, its sustainability is subject to question. While it has an impact on the attendance and retention of pupils at school, it doesn't solve the structural question of food scarcity in the community or households.

Burundi's conflicts have claimed more men than women, leaving widows and unmarried women to take on a greater agricultural burden. Inheritance customs routinely deny women the right to claim land and have forced many widows, orphans and women displaced by conflict or natural disasters to surrender their family farms to surviving brothers-in-law.

## HungerFREE Scorecard

### Country: **Cambodia**

Leader: **Prime Minister Hun Sen**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **25/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	Medium hunger levels. Hunger increasing
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	D	Low agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	D	Poor climate adaptation plans



### Remarks:

**Nearly one in five Cambodians don't get enough to eat.<sup>138</sup> Forty per cent of Cambodian children are malnourished;<sup>139</sup> more than half of children under the age of five are underweight; 56 per cent are stunted due to chronic malnutrition and 13 per cent show signs of wasting, from severe and rapid weight loss.<sup>140</sup>**

Household-level food security remains a serious challenge due to high rates of poverty, frequent flooding and droughts, low levels of irrigation and poor storage facilities, among other factors. As a result, there are significant problems in accessing food – and even those who manage to eat sufficient calories have poor rates of dietary diversification and nutrition.<sup>141</sup>

The international price of rice, which has remained low compared to other basic grains, has protected Cambodia from the worst of global food price increases, allowing food prices to remain fairly stable, although food inflation increased slightly by 3.6 per cent compared to a year earlier.<sup>142</sup>

While 2011 is expected to bring a bumper rice crop, climate change presents serious threats to Cambodia's future rice production. Flooding and droughts are increasingly common; in fact, from 2005 to 2010, rice crop loss was attributed mainly to floods (70 per cent), followed by drought (20 per cent) and pests and disease (10 per cent).<sup>143</sup>

In northern Cambodia, severe drought has caused food shortages for three months, resulting in a 50 to 60 per cent loss in productivity. In surveys carried out by ActionAid in affected communities, approximately

## Cambodia scorecard continued

---

70 per cent of the households reported eating only two meals per day, as a result of the drought. Meanwhile, Cambodia is doing far, far too little to 'climate prepare' their agriculture and other food security policies, falling to the bottom five of our scorecard measuring countries with preparedness policies in place.

The Cambodian government has developed two strategies that stress the need to improve agricultural productivity through the expansion of irrigation and the management of water resources to reduce vulnerability to natural disasters.<sup>144</sup>

Land ownership remains a thorny issue in Cambodia. It is estimated that even today – nearly 40 years after the Khmer Rouge came to power – 85 per cent of Cambodians do not own land titles, leaving them especially vulnerable to corporate land grabs.<sup>145</sup> In addition, three out of five families in rural Cambodia do not have enough land to meet their food needs.<sup>146</sup>

More than two million Cambodians live in a household headed by a woman and although women are involved in every stage of food production, from sowing to harvesting to storage to marketing to food preparation, their labour is undervalued and virtually never seen as "work."<sup>147</sup> Many women were forced to take up men's traditional farming duties during the war, such as land preparation, irrigation and threshing, and most still find themselves carrying the dual responsibility of farming and managing a household.

## HungerFREE Scorecard

### Country: **China**

Leader: **Hu Jintao**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **11/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low hunger levels
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	D	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	C	Moderate climate adaptation plans



### Remarks:

**In recent years, the percentage of undernourished people in China has dropped from 15 to 10 per cent.<sup>148</sup> By investing heavily in smallholder and poor farmers, as well as implementing policies of equitable land distribution, the Chinese government was able to pull 58 million people out of hunger between 1990 and 2011.<sup>149</sup>**

Given the size of China's population, however, even the smallest double-digit percentage can mask a huge number: as of June 2010, 127 million Chinese were undernourished and hungry.<sup>150</sup>

The Chinese government has introduced a number of pro-poor policies, including providing support to migrants, as well as increasing existing pension and unemployment benefits.<sup>151</sup> China's Outline for Poverty Alleviation and Development of China's Rural Areas (2000-2010), which placed emphasis on investment in agriculture and rural farmers<sup>152</sup> and increased spending on health and education, have significantly reduced levels of poverty in numerous regions.<sup>153</sup>

The 12th Five Year Plan, outlining government priorities from 2011 until 2015, calls for ramping up social protections,<sup>154</sup> increasing incomes, reducing poverty and increasing living standards, including ensuring adequate food intake.<sup>155</sup>

However, China's increasing demand for food, fuel and animal feed means it is increasingly vulnerable to global food price spikes.<sup>156</sup> During the last half of 2010, rice prices rose by nine per cent in China.<sup>157</sup> Floods in June

## China scorecard continued

---

2011 also caused significant crop losses, resulting in food prices jumping by 40 per cent in affected regions.<sup>158</sup> In addition, drought has affected approximately seven million hectares of arable land, causing prices of 50 staple foods to rise significantly. The cost of some vegetables increased by up to 16 per cent.<sup>159</sup>

Climate change remains a problem for China. It is estimated that the effects of climate change will mean that China will no longer be self-sufficient in food production as early as 2030.<sup>160</sup> China plans to tackle this by investing nearly US\$3 billion in developing Genetically Modified crops and agricultural technologies between 2008 and 2020, which is a concern given the potential negative impacts GM crops can have.<sup>161</sup>

In surveys carried out by ActionAid in communities across China, many communities reported feeling the impacts of climate change, with some areas being severely affected by droughts or flooding. 2010 was an especially bad year in eastern and southwestern Chinese provinces, with drought affecting rice harvests. The resulting rise in the cost of food has also affected people in southern China, with the price of sugar cane increasing by 50 per cent.

## HungerFREE Scorecard

### Country: **Democratic Republic of Congo**

Leader: **Joseph Kabila**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **27/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	E	Very high hunger levels. Hunger increasing
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	D	No right to food legislation
Sustainable agriculture	D	Low agriculture budget
Social protection	E	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	D	Moderate climate adaptation plans



### Remarks:

Hunger levels continued to rise in the Democratic Republic of Congo, reaching 69 per cent in 2010,<sup>162</sup> largely due to on-going instability and a lack of political leadership in a country plagued by violence. As a result, three-quarters of people living in DRC face chronic hunger.<sup>163</sup> DRC ranks as the country most vulnerable to changing climate and increasing hunger levels in our scorecard rankings. Worse, there appear to be no plans to reduce this heightened level of vulnerability, nor policies in place to tackle climate change.

Although civil conflicts have officially ceased, in reality, nearly two million people remain uprooted from their homes and families<sup>164</sup> and violence – particularly rape – persists.<sup>165</sup> DRC still hosts some 180,000 refugees<sup>167</sup> and is saddled with “extremely alarming” levels of poverty. Nearly half the population will not live to see age 40.<sup>167</sup>

Much more must be done to reform its land tenure system. Dangerous feuds can erupt when smallholders and marginalised groups fleeing violence bump up against land used by others. Many farmers return home only to find their land occupied. Since all land in the DRC is owned by the state, farmers have little incentive to invest their own income in improving the land.

More funding for agriculture must be found in order to jump-start the rural economy and improve food security.<sup>168</sup> Agriculture has not been a government priority and is therefore not given sufficient resources or support,

## Democratic Republic of Congo scorecard continued

---

with less than five per cent of the national budget going to agriculture. This is unacceptably low, especially given the good amount of land available and its untapped potential.<sup>169</sup> At present, only two per cent of the country's available 10 million ha of arable land are being farmed.<sup>170</sup>

More than 60 per cent of the vast DRC landmass is covered in forest, with almost two-thirds classified as rainforest. DRC is custodian to the world's second largest area of tropical rainforest.<sup>171</sup> Since as many as 40 million people depend to some degree on DRC's forests, the country must defend them.<sup>172</sup>

In western DRC, an ActionAid survey has revealed that communities there are experiencing longer dry seasons, resulting in poor harvests. This, coupled with floods in the rainy season, has heavily impacted crop production. In the southeastern region of Kibumba, where agriculture remains the main source of income, communities are reporting severe weather-related effects to their crops. In the capital, Kinshasa, three-quarters of families interviewed by ActionAid reported eating only one unbalanced meal a day - usually in the evening - with children, women and the elderly most severely affected by food shortages.



## HungerFREE Scorecard

### Country: **Ethiopia**

Leader: **President Meles Zenawi**

Overall 'preparedness' grade: **B (A-E)**

Overall 'preparedness' rank: **4/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
<b>Hunger</b>	D	High hunger levels. Hunger increasing
<b>Climate food insecurity</b>	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
<b>Legal framework</b>	D	No right to food legislation
<b>Sustainable agriculture</b>	A	High agriculture budget
<b>Social protection</b>	E	Low social protection
<b>Gender equality</b>	B	Moderate gender guidelines
<b>Climate adaptation plans</b>	B	Moderate climate adaptation plans



### Remarks:

**The number of food insecure people decreased from 5.2 to 3.2 million in the past year,<sup>173</sup> however, recent drought and rising food prices reveal the fragility of Ethiopia's gains and highlight the need to build more resilience and disaster preparedness into the country's food supply. That being said, the Ethiopian government does have fairly ambitious climate adaptation plans which seek to address changing weather patterns on the country's agriculture.**

Global food price increases have pushed the cost of a basic food basket in Ethiopia up by approximately 10 per cent,<sup>174</sup> while annual food inflation increased by 41 per cent in the first half of 2011,<sup>175</sup> highlighting the precariousness of gains made against hunger.

Agriculture is the foundation of the Ethiopian economy, employing 80 per cent of the country's 77 million people, constituting more than half of the country's GDP and generating more than 85 per cent of the country's foreign exchange earnings.<sup>176</sup> As a result, Ethiopia cannot ignore the impacts of climate change, with more investment needed in adaptation plans for agriculture, forest management, and diversified energy resources.<sup>177</sup>

Recurring droughts have left poor farming families without food crops, causing periodic famine. The situation recently worsened because of sharp increases in the prices of food and fertilizers on world markets, which made it more difficult for poor households in Ethiopia to secure adequate food supplies.<sup>178</sup> Ethiopia imposed an export ban on maize in March 2011, which will affect neighbouring trading countries throughout

## Ethiopia scorecard continued

---

the Horn of Africa.<sup>179</sup> In the Ofla community, in Northern Ethiopia, ActionAid estimates that climatic conditions damaged over 1 thousand hectare owned by 2700 farmers with estimated crop losses ranging from 30-100 per cent across the area.

More than half of the country's 12 million small-scale farmers farm one hectare or less of land.<sup>180</sup> Despite land reform laws enacted in 1997 which sought to improve women's access to and ownership of land,<sup>181</sup> many Ethiopian women only gain access to land through marriage.<sup>182</sup> Also, men's plots are on average 56 per cent larger than those farmed by women.<sup>183</sup>

Rural Ethiopian women spend considerable time fetching water, growing food, getting healthcare for their children, and reaching markets.<sup>184</sup> As climate change dries up water sources and reduces farm yields, women are

forced to work longer and harder for less. Despite the role that Ethiopian women play in society, the wider perception is that agriculture work is 'women's work' and therefore not important.<sup>185</sup>

Ethiopia has recently made huge gains in rural road investment and food security programmes.<sup>186</sup> As well, the government continues to pursue a goal of increasing the availability of improved seeds, fertilizers, and extension services for small-scale farmers. While there is some evidence to suggest that the process has led to improvements in both agricultural output and yields, more still needs to be done.<sup>187</sup>

The government of Ethiopia in the year 2009 enacted the Charities and Societies Proclamation which bars International NGOs from participating in advocacy, human rights and conflict resolution activities.

## HungerFREE Scorecard

### Country: **The Gambia**

Leader: **President Yahya Jammeh**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **23/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low hunger levels
Climate food insecurity	A	Low climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	B	Medium agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans

**Vulnerability index**

- Extremely vulnerable
- Seriously vulnerable
- Moderately vulnerable

### Remarks:

Although harvests have improved slightly in The Gambia in recent years, the country's weak agriculture sector desperately needs investment. The majority of Gambians work in agriculture, but a lack of government investment in irrigation, inputs and land reform has stagnated production, forcing the country to import half the food it needs,<sup>188</sup> spending \$40 million each year on rice alone, and leaving it vulnerable to spikes in global food prices.

Since 1970, The Gambia's population has soared from 200,000 to 1.8 million, but agricultural production has not kept pace. In 35 years, spending on food imports has grown from \$20 million to \$140 million, yet exports have stagnated at 1970s levels.<sup>189</sup> In 2010/2011, 120,000 metric tonnes of rice and 15,000 metric tonnes of flour were imported, with about 30 per cent re-exported to neighbouring countries.<sup>190</sup>

Nearly one in five Gambians are undernourished.<sup>191</sup> In children under five, six per cent show signs of wasting, while 22 per cent are stunted due to chronic malnutrition. One in five newborns are born underweight; more than 20 per cent of children under five are underweight.<sup>192</sup>

The Gambia remains susceptible to volatility in global food prices; in 2010, inflation of basic food commodities stood at 8.1 per cent and this is expected to increase further with the removal of fuel subsidies. Fuel prices increased by 15 per cent in 2011, while depreciation of the Gambian Dalasi in July 2010 further reduced the average Gambian's ability to purchase imported food, including staples such as rice.<sup>193</sup>

## The Gambia scorecard continued

---

In recent years, The Gambia has overhauled its government departments focusing on agriculture, introducing a National Agricultural Development Agency and adopting an agriculture and natural resources policy. Protecting forests, replenishing the land and building irrigation technology is long overdue, as the country suffers serious land degradation caused by continuous cropping and bush fires<sup>194</sup> and, as a low-lying coastal country, is vulnerable to the rising sea levels, increased salination and heavy rainfalls triggered by climate change.

Erratic rainfall patterns in at least two regions of The Gambia have affected crop yields by an estimated 25 per cent. Surveys conducted by ActionAid in those regions shows a quarter of households are eating only two meals a day. The same two regions have also experienced a loss in farm production due to soil erosion, deforestation, poor farming techniques and land degradation.

In order to see meaningful increases in its rice production, The Gambia must focus its agricultural investments on women farmers, who are the traditional growers of rice. Since only a small proportion of women have titles to property, as well as credit, extension and inputs, only a small proportion is motivated to invest in their farms. Women also tend to have little support for inputs, such as credits, water, seeds and tools.

## HungerFREE Scorecard

### Country: Ghana

Leader: **President John Atta Mills**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **15/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low hunger levels
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	D	Low agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	B	Moderate climate adaptation plans



### Remarks:

The number of people going hungry in Ghana has decreased significantly in the past 15 years, falling from 34 per cent to eight per cent,<sup>195</sup> a reflection of Ghana's long-term commitment to agriculture. School feeding programmes reach one million children, while a national fertiliser subsidy project encourages farmers to rehabilitate their exhausted soil.<sup>196</sup>

However, with food prices hitting new highs and climate change squeezing northern farmers, Ghana will need to do more to protect farmers, especially women farmers who produce the bulk of food crops, from land-grabbing biofuel companies and agro-forestry companies.<sup>197</sup> Unfortunately, Ghana has tarnished its previously bright record on tackling hunger by not having sufficient plans in place to deal with climate change and its impact on food production and agriculture.

Agriculture's contribution to Ghana's GDP fell from 39 to 35 per cent between 2008 and 2009<sup>198</sup> due to a combination of factors that reduce farmers' incentives to invest and produce, such as poor roads and a lack of technological change, access to markets and proper irrigation.<sup>199</sup> Ghana's land tenure system, a confusing and frequently volatile method of communal land concessions governed largely by traditional leaders, is increasingly vulnerable to exploitative land grabs. A Norwegian biofuels company, for example, recently claimed and deforested large tracts of land near Tamale, in the Northern Region, with the intention of creating "the largest jatropha plantation in the world".<sup>200</sup>

## Ghana scorecard continued

---

The Ghanaian government is currently developing a national strategy to determine the cost of adaptation.<sup>201</sup> This process must be accelerated, for climate change is already impacting Ghana's remote northern regions, where nine in 10 people live in poverty.<sup>202</sup> Northern Ghana suffered severe droughts in 2007, then 2008's high food prices stretched already depleted family budgets. 2009 brought the effects of the global economic downturn, leading to a decline in agricultural exports and a reduction in international remittances. This combination of factors worsened poverty, hunger and malnutrition among the most vulnerable.<sup>203</sup> In north-western Ghana, communities are reporting to ActionAid that drought and the increasing cost of food has left them eating less.

In 2010, it was estimated that Ghana lost a whopping 135,395 hectares of forest each year.<sup>204</sup> Land degradation is seen as an increasing problem, due to the over-use of inorganic chemicals and rampant bush fires, as well as tree felling and over-grazing by cattle, all of which leads to decreased yields and less food for livestock.

## HungerFREE Scorecard

### Country: **Guatemala**

Leader: **President Álvaro Colom Caballeros**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **21/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	Medium hunger levels
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	A	Right to food legislation enacted
Sustainable agriculture	D	High agriculture budget
Social protection	D	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans



### Remarks:

**Although the state has pledged since 2005 to “see to it that the food and the nutrition of the population meet the minimum health requirements,”<sup>205</sup> hunger continues to stalk Guatemala’s young, indigenous and rural populations.**

Guatemala has the fourth highest rate of chronic malnutrition in the world and the highest in Latin America and the Caribbean.<sup>206</sup> Currently, half of children under the age of five are considered chronically undernourished, which can affect their physical and mental development.<sup>207</sup> At least 15,000 cases of chronic and acute malnutrition were identified between January and April 2011.<sup>208</sup>

While social protection schemes like “My Family is Moving Forward” can break cycles of poverty by promoting education and health services,<sup>209</sup> Guatemala’s government must reverse its trend of reduced assistance for poor farmers.<sup>210</sup>

Guatemala must also break its reliance on food imports, balance its historically uneven landownership policies, introduce legislation and funding for integral rural development and stop the cycle of recurrent emergencies, whose frequency do not allow farmers enough time to rebuild. Investing in small-scale farmers, particularly women, will give them a better chance to withstand shocks, such as double-digit increases in the price of maize and beans<sup>211</sup> and the cycle of drought, heavy rain and pest infestations that triggered an April 2011 “nutrition risk alert” in nine provinces in the country’s interior.<sup>212</sup>

## Guatemala scorecard continued

---

Staple food prices hit an all-time high in 2011, pushing the cost of the basic food basket up by two per cent in only four months.<sup>213</sup> The government responded by raising the country's minimum wage to enable more workers to afford the cost of basic food needs, but this is merely a stopgap measure, as the wage hike doesn't yet cover the full cost of basic food needs.<sup>214</sup>

Guatemala has not submitted a National Adaptation Programme of Action to address climate change, even though it is recording widespread desertification in its interior. To combat desertification and drought, the government has established a new unit<sup>215</sup> to conduct research, promote better local knowledge for land management and identify ways to draw investment in sustainable land management.

ActionAid surveys in the north-central district of Alta Verapaz have demonstrated that land being used for biofuels production is central to a decrease in food crop production. In the south-western coastal area of Costa Sur Occidente, large 'plantation-style' banana and rubber farms are squeezing land available to small-scale farmers.



## HungerFREE Scorecard

### Country: **Haiti**

Leader: **President Joseph Michel Martelly**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank:

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	D	High hunger levels. Hunger increasing
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	D	Constitutional guarantee, but no right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	D	Poor climate adaptation plans



### Remarks:

Still reeling from the devastating 2010 earthquake, Haiti continues to rely on food imports and foreign aid, leaving it vulnerable to food price fluctuations and shortages.<sup>216</sup> Forty-five per cent of Haiti's population, or 4.4 million people, live in extreme poverty and face chronic food shortages.<sup>217</sup> Haiti is extremely vulnerable to climate change and ranks fourth from the bottom in our scorecard. Given the likely impact of increased erratic weather patterns on agriculture, the country should be doing significantly more to prepare itself for the looming climate crisis.

Haiti is struggling to rebuild its agricultural sector with an ambitious US\$700 million plan focusing on reforestation, protection of waterways, rebuilding and reinforcing collapsed riverbanks and damaged irrigation channels and rehabilitating 600 kilometres of feeder roads.<sup>218</sup> Currently, half of all food is imported,<sup>219</sup> including as much as 80 per cent of the rice Haitians consume.<sup>220</sup> More than 1.5 million Haitian children are fed only through school programmes run by the Haitian government and relief agencies.<sup>221</sup> The government is encouraging the planting of nutritious sweet potatoes in all 10 of Haiti's administrative departments and the building of storage facilities to stock food and grain to prepare the country for future hurricanes.<sup>222</sup>

Haiti lies in the Caribbean's hurricane belt. Every two to three years, cyclones, storms or tropical depressions blow in, seriously affecting ports, harbours, farms and coastal communities, with the damage and loss to the agricultural sector sometimes totalling as much as US\$200 million.

## Haiti scorecard continued

---

Cholera, which first appeared in 2010 and has so far killed more than 6,000 people and sickened a further 420,000 people, continues to take a disastrous toll on the country's recovery.

Flooding and soil erosion are massive problems in Haiti, where only three per cent of the once lushly forested country still has tree cover. Up to a third of Haiti's land has lost so much topsoil that it is no longer arable, or barely so.<sup>223</sup> As a consequence, Haiti's national adaptation plan concentrates on land rehabilitation and vegetation restoration, water resources, as well as coastal restoration.<sup>224</sup> Adaptation measures are being implemented in the coastal/marine ecosystems, water resources and food security sectors.

## HungerFREE Scorecard

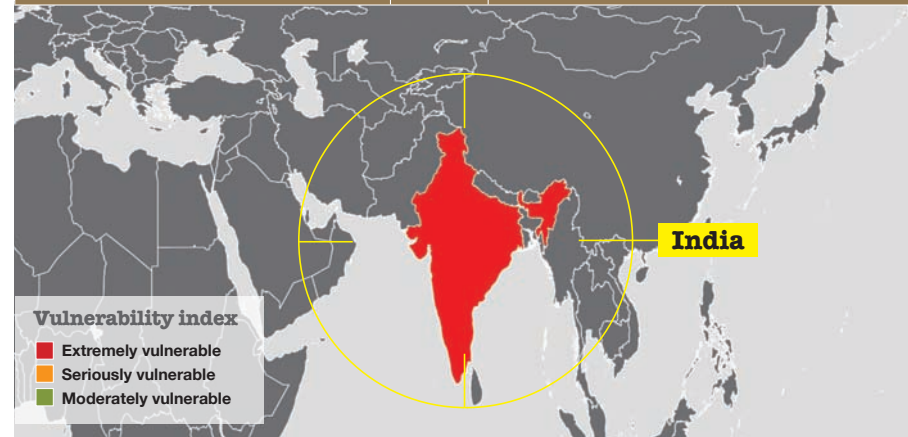
### Country: **India**

Leader: **Prime Minister Manmohan Singh**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **18/28**

Indicator	Grade	Comment
Vulnerability Index		
Hunger	E	Very high hunger levels. Hunger increasing
Climate food insecurity	A	Low climate vulnerability
Capacity and Preparedness Index		
Legal framework	D	Low right to food legislation, but in progress
Sustainable agriculture	D	Low agriculture budget
Social protection	C	Medium social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	D	Poor climate adaptation plans



### Remarks:

With one-quarter of the world's hungry living within its borders, even slight improvements to India's hunger levels could dramatically reduce global poverty and hunger. India is home to one-third of the world's undernourished children,<sup>225</sup> with 43 per cent of Indian children underweight and nearly half of those suffering malnutrition and stunted growth.<sup>226</sup> And the future could look even bleaker, with India ranked as our seventh most vulnerable country in the climate and hunger vulnerability scorecard.

After decades of neglect and the dismantling of key social safety nets, India's most recent budget signals that the government may finally be recognising the role agriculture plays in the development of the country.<sup>227</sup> However, much more effort will be needed in order to counter-balance the negative impact that declining soil productivity and changing weather patterns will have on agriculture.

The price of protein has skyrocketed 31 per cent since 2010.<sup>228</sup> Indians protested spiralling food prices<sup>229</sup> when the price of lentils, rice and vegetables surged 11.5 per cent in mid-2011.<sup>230</sup> Though Indians living below the official poverty line count on the Public Distribution System (PDS) to provide food grains at affordable prices and safeguard against scarcity,<sup>231</sup> the scheme continues to leave out millions who need it the most. A radical revamp of the scheme is needed to ensure greater efficiency.<sup>232</sup> A draft bill designed by the newly-resurrected National Advisory Council calls for a much-needed overhaul of the food distribution system.<sup>233</sup>

## India scorecard continued

---

India must clamp down on corruption, however, if its renewed interest in agriculture is to have any impact. The National Rural Employment Guarantee Act, for example, was meant to provide 100 days of employment to every household, with women accounting for a minimum of 30 per cent of beneficiaries.<sup>234</sup> The Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) has had limited success due to social discrimination and injustice, creating a situation of variable access to the scheme for women, dalits, Muslims and persons with disability.

Since 1999, the failure of the monsoon has adversely affected the soil, leaving land barren. In fact, half of India's land is now classified as desertified.<sup>235</sup> Since India's land supports 16 per cent of the world's population and 18 per cent of its livestock, these pressures alone play a major role in promoting desertification.<sup>236</sup> India must develop climate-resilient crops, expand weather insurance mechanisms and promote better agricultural practices.<sup>237</sup>

Cycles of debt and crop losses have contributed to scores of male farmer suicides in the past decade,<sup>238</sup> leaving widows to cope with managing households and providing enough food to feed their families. India is witnessing a feminisation of the agricultural workforce as men migrate to off-farm work, yet women's role in agriculture continues to be undervalued. The low socioeconomic status of women in India means they are likely to eat last and least.<sup>239</sup>

## HungerFREE Scorecard

### Country: **Kenya**

Leader: **Mwai Kibaki**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **24/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	High hunger levels. Hunger increasing
Climate food insecurity	B	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	D	High constitutional guarantee, but no right to food legislation
Sustainable agriculture	D	Low agriculture budget
Social protection	D	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	D	Poor climate adaptation plans



### Remarks:

Hunger statistics in Kenya are headed in the wrong direction and with much of the government's attention focused on the immediate impact of a regional drought and famine, long-term investments that could better protect Kenyans against global food price hikes and the impacts of climate change are suffering. Kenya must do much, much more to address the country's deep lying vulnerability to climate change and the anticipated corresponding rise in hunger levels. At present, Kenya is ranked as fifth from the bottom in our scorecard measuring hunger and preparedness for climate change.

Some 11.2 million people in Kenya are malnourished.<sup>240</sup> The number of severely malnourished children admitted to hospital increased 78 per cent in 2011, and malnutrition rates among children below the age of five years have risen dramatically with reports of up to 37 per cent in some northern districts - more than double the emergency threshold of 15 per cent.<sup>241</sup> Up to 3.5 million people are in need of humanitarian assistance due to the drought.<sup>242</sup>

The cost of the basic food basket in Kenya has crept up as annual mean inflation reached 14.45 per cent.<sup>243</sup> Worse, the sharp upward trend in maize prices has eroded the purchasing power of net food buyers and pastoralist households.<sup>244</sup>

Kenya is a CAADP signatory and although it insists it is meeting its 10 per cent spending target, FAO analysis suggests the country devotes only 4.8

## Kenya scorecard continued

---

per cent of the national budget directly on agriculture.<sup>245</sup> To halt future crises, Kenya must devote much more to agriculture.

The National Land Policy passed in 2009 would legally guarantee women's right to land,<sup>246</sup> but government concern over the drought and subsequent famine has delayed the policy's implementation. This must be fast-tracked, as the blueprint has been hailed as an opportunity to ensure sustainable and long-term redress for Kenya's long-standing land woes.<sup>247</sup>

Massive deforestation in Aberderas, Mt. Kenya and Mau forests remains a political issue. Once covered by thick vegetation, mismanagement of these forests and large-scale clearing for farming has led to deforestation and will negatively impact crop yields beyond the confines of the immediate surrounding areas.<sup>248</sup>

Kenya passed a new Constitution in 2010 that guarantees the right to

food.<sup>249</sup> Social protection has remained a key concern for the government; irrespective of the drop in GDP, government expenditure on social services has steadily increased. The Hunger Safety Net Programme operates in the arid part of northern Kenya and touches 300,000 households.<sup>250</sup> However, while Kenya offers social protection programmes to orphans, vulnerable children, the elderly, school children and communities facing chronic hunger, many of the programmes have been criticized for being poorly implemented.<sup>251</sup>

Across Kenya, communities have been experiencing chronic drought. An ActionAid survey in the eastern Sericho region found that up to 70 per cent of crops failed due to drought, with similar impacts felt in the southeast region of Marafa. This has resulted in a 50 to 70 per cent drop in income for those dependent on agriculture and livestock. Up to 60 per cent of households reported eating only one meal a day.

## HungerFREE Scorecard

### Country: **Lesotho**

Leader: **Prime Minister Pakalitha Mosisili**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **12/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low hunger levels. Hunger increasing
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	D	High agriculture budget
Social protection	D	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	A	Good climate adaptation plans



### Remarks:

**Lesotho must dramatically scale up spending in the agricultural sector to repair its soil, invest in women farmers and assist farmers in purchasing seeds and fertilisers if it is to break its reliance on food imports.<sup>252</sup>**

Food production in Lesotho has dropped dramatically in the past three decades, as many small-scale farmers simply cannot afford to buy quality seeds or fertilisers. Harvests drop every year,<sup>253</sup> and as a result, Lesotho is forced to import as much as 70 per cent of its food.<sup>254</sup>

Only two per cent of the national budget is spent on agriculture.<sup>255</sup> This lack of investment, as well as the decline in agricultural production and the degradation of natural resources are among the principal causes of poverty in Lesotho.<sup>256</sup> The country also has one of the highest HIV and AIDS rates in the world, with one in four people believed to be HIV-positive.<sup>257</sup>

The agricultural sector accounts for about 17 per cent of GDP and is the primary source of income, or an important supplementary source, for more than half of rural Lesotho's population.<sup>258</sup> As a consequence, climate change can have devastating consequences for the vast number of communities that depend on the land for their livelihoods.<sup>259</sup> Lesotho's National Adaptation Programme of Action concentrates on improving the resilience of livestock, sustainable crops and water supply.<sup>260</sup> However, the country also suffers from severe land degradation due to overgrazing, flash floods and topsoil erosion.<sup>261</sup> Only 10 per cent of its 30,000-sq km of mountainous terrain is classified as arable and the majority of small-scale

## Lesotho scorecard continued

---

farmers live on what they can produce from cultivating an average of less than 1.5 ha of land.<sup>262</sup>

Women are treated fairly poorly in Lesotho, and are considered the legal minors of men, in accordance with customary law, limiting their right to inherit or own land.<sup>263</sup> They also have difficulty securing the cash they need to feed and provide for their families since access to land is largely determined by customary law.<sup>264</sup>

Lesotho offers monthly cash transfers to seniors over 65,<sup>265</sup> as well as monthly cash transfers to the disabled, orphans and children and the chronically ill.<sup>266</sup> It has a food security policy, passed in 2005, which defines food security as ensuring the availability of food, access and stability of food supply, as well as the effective use of food.<sup>267</sup>



## HungerFREE Scorecard

### Country: **Liberia**

Leader: **President Ellen Johnson-Sirleaf**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **16/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
<b>Hunger</b>	<b>C</b>	Medium hunger levels. Hunger increasing
<b>Climate food insecurity</b>	<b>C</b>	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
<b>Legal framework</b>	<b>E</b>	No right to food legislation
<b>Sustainable agriculture</b>	<b>D</b>	Low agriculture budget
<b>Social protection</b>	<b>E</b>	Low social protection
<b>Gender equality</b>	<b>B</b>	Moderate gender guidelines
<b>Climate adaptation plans</b>	<b>B</b>	Moderate climate adaptation plans



### Remarks:

Still recovering from its brutal civil war, **64 per cent of Liberians live below the poverty line and the country remains ranked in the bottom five of the UN Human Development Index at 176th of 179 countries.**<sup>268</sup> However, agricultural production has steadily increased since the war ended in 2003. Yields are still well below the regional average and food insecurity is high; productivity has been marred by a lack of quality inputs and investment, especially among small-scale farmers.<sup>269</sup>

Rice production plummeted 76 per cent between 1987 and 2005<sup>270</sup> and today Liberia still produces only about 40 per cent of its rice needs – relying on expensive imports to feed its population,<sup>271</sup> which leaves it exposed to global price fluctuations. In fact, Liberia experienced dramatic rice price increases of up to 32 per cent between 2010 and 2011.<sup>272</sup> In addition, Liberia received an influx of refugees from neighbouring Ivory Coast in 2011, which substantially increased its food needs, and further exacerbated its food insecurity.<sup>273</sup>

Liberia began boosting its rice production in 2009, with the government initiating projects to transform swampland to make way for rice, recognising that it is in the country's interest to use some 560,000 ha of unused swampland.<sup>274</sup>

Liberia has experienced lower yields and higher degrees of vulnerability and uncertainty caused by reduced soil moisture, changes in rainfall patterns, increased flooding, and increased salinity.<sup>275</sup> Although home

## Liberia scorecard continued

---

to plentiful and diverse natural resources, Liberia is susceptible to climate change. Contributing factors include shifting cultivation, unsustainable logging, unregulated coastal mining, high levels of charcoal production and fire wood collection and decreasing river flows due to high evaporation rates.<sup>276</sup>

Liberia must reduce its vulnerability to increasing climatic variability, which it plans to do by focusing on integrated cropping/livestock farming, the cultivation of soybeans and lowland rice and the rearing of small ruminants.<sup>277</sup>

A Poverty Reduction Strategy launched in 2008 aims to expand peace and security while delivering basic social services to the population.<sup>278</sup> Although in theory Liberia's Poverty Reduction Strategy is strong, it should be complemented by social protection policies that ensure extremely poor households are not bypassed.<sup>279</sup>

## HungerFREE Scorecard

### Country: **Malawi**

Leader: **President Bingu wa Mutharika**

Overall 'preparedness' grade: **B (A-E)**

Overall 'preparedness' rank: **2/28**

Indicator	Grade	Comment
Vulnerability Index		
Hunger	C	Medium hunger levels
Climate food insecurity	B	Medium climate vulnerability
Capacity and Preparedness Index		
Legal framework	C	Right to food legislation in progress
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	A	Good climate adaptation plans

**Vulnerability index**

- Extremely vulnerable
- Seriously vulnerable
- Moderately vulnerable

### Remarks:

**Malawi has rightly been heralded as a success, proving that sustained double-digit budgetary spending on agriculture can halve hunger and dramatically reduce child malnutrition rates. Not only has Malawi managed to dramatically reduce hunger, it is also preparing for a more volatile future caused by climate change. These measures taken together make Malawi the second top scorer on our index of climate preparedness.**

Malawi is beginning to spell out policy measures to protect natural resources and promote better farming. The country's climate adaptation plan is solid, but, like other poor countries, they will need significant help from the international community to ensure these plans become a reality.

It is extremely important that Malawi enact new policies aimed at being sensitive to the environment and climate change, as recurrent floods and droughts are a major concern for Malawi. In the past, erratic rains have resulted in acute crop failure, food insecurity and malnutrition, especially among vulnerable rural communities. Floods have also amplified water pollution and increased incidences of malaria, cholera and diarrhoea. It is against this backdrop that the Government of Malawi created its National Adaptation Programme of Action to assist rural communities in coping with climate change.<sup>280</sup>

Malawi loses nearly 520 sq km of forest annually, a deforestation rate of 2.8 per cent that the Southern Africa Development Community says is one of the highest in sub-Saharan Africa.<sup>281</sup> Many people in both urban

## Malawi scorecard continued

---

and rural areas continue to destroy trees for charcoal, fuel wood and timber, despite government warnings.<sup>282</sup>

The country intends to implement an Agricultural Development Programme (ADP) to accelerate agricultural growth. While significant analysis has gone into the design phase of the ADP, Malawi still faces many numerous challenges and questions in formulating a strategy to implement it.<sup>283</sup>

Malawi is also slowly moving away from safety nets and more towards a sustainable programme of social protection that assists poor households in dealing with risks and shocks.<sup>284</sup> However, very few long-term developmental programs are fully funded.<sup>285</sup>

Typically, the most vulnerable households have less than one hectare of land to cultivate, is headed by a woman and household members have little or no education.<sup>286</sup> Malawi can no longer afford to ignore what women farmers, strengthened by legally-enforced land rights and proper tools and education, could accomplish in meeting the country's food needs, as women make up 70 per cent of the agricultural labour force and yet have little resources.<sup>287</sup> Households headed by women have fewer assets, limited access to productive inputs and land, a greater burden of dependants, limited opportunities for off-farm employment and longer periods of food insecurity.<sup>288</sup>

Women's access to bank loans has improved in recent years thanks to the development of specific micro-credit programmes, which have been encouraged by the government, but rural women still struggle.<sup>289</sup>

## HungerFREE Scorecard

### Country: **Mozambique**

Leader: **President Armando Emilio Guebuza**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **19/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	High hunger levels. Hunger increasing
Climate food insecurity	B	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	D	Low right to food legislation, but in progress
Sustainable agriculture	B	Medium agriculture budget
Social protection	E	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans



### Remarks:

**Mozambique is regarded as one of the countries most at risk from the erratic weather caused by climate change, with its geography leaving it vulnerable to floods, drought, erosion and tropical storms that can rapidly undo what little progress has been made in the fight against hunger.**

A third of Mozambican households face perpetual hunger; 54.7 per cent of the population live below the national poverty line and nearly two-thirds of rural children live in absolute poverty.<sup>2910</sup> Forty-four per cent of children are considered stunted due to chronic malnutrition,<sup>291</sup> while 38 per cent of the overall population are considered undernourished.<sup>292</sup>

Dependent on imports of staples such as wheat, rice, maize and cassava, Mozambique continues to be hit hard by global food price spikes. Food inflation had ballooned by 21 per cent as of January 2011.<sup>293</sup>

In 2010, the government launched the third phase of its Poverty Reduction Strategy Paper (PARPA), which focuses on improving governance, development, agricultural outputs, and productivity and job creation in small and medium-sized enterprises. Although the second phase of PARPA emphasized the state's role in providing basic social services, the funds devoted to safety nets were simply not sufficient.

Many Mozambicans live along the country's coast, leaving them vulnerable to rising sea levels, wide-scale flooding and the loss of arable land due to increased salination. Extreme weather, such as drought, flooding and

## Mozambique scorecard continued

---

tropical cyclones, are also more likely to hit Mozambique, as evidenced by eight successive years of severe drought and four major floods within an eight-year period.<sup>294</sup> Mozambique is endeavouring to strengthen its early warning system, assist farmers in dealing with climate change and improve river water management.<sup>295</sup>

Although women hold 40 per cent of Mozambique's parliamentary positions, and the country's Constitution includes clauses promoting and protecting women,<sup>296</sup> women farmers continued to be denied land tenure. Under customary law, women acquire access to land and a house through their fathers, brothers or husbands. Widows are fourth in line for inheritance and divorce generally means that a woman loses all access to the resources of her husband's household and, traditionally, even access to her children. A 1997 act gives women the right to hold land titles, but due to poor implementation, the use of this act is abysmally low.<sup>297</sup>

## HungerFREE Scorecard

### Country: **Nepal**

Leader: **Prime Minister Dr. Babu Ram Bhattarai**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **6/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	Medium hunger levels.
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	D	High constitutional guarantee, but no right to food legislation
Sustainable agriculture	E	High agriculture budget
Social protection	D	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	A	Good climate adaptation plans



### Remarks:

**Some 4.5 million people in Nepal are considered undernourished; 39 per cent of children are underweight and nearly half are stunted due to chronic malnutrition.<sup>298</sup> More than 80 per cent of people live in rural areas, surviving on subsistence farming, and yet nearly 40 per cent of the national budget goes to importing food.**

Such heavy reliance on global food stocks makes Nepal exceptionally vulnerable to food price shocks. Combined with double-digit inflation, the price of vegetables in the capital has doubled in the past year alone. Staples such as rice cost 30 per cent more than in 2008 and lentils 20 per cent more.<sup>299</sup>

Nepal made modest increases in agricultural spending, setting aside nearly eight per cent of its national budget for agriculture in 2011/2012. In a move that would provide relief to farmers, subsidies on fertilisers have increased to Rs 3 billion.<sup>300</sup> A new government three-year development plan aims to bump up food crop production by 25 per cent, pulse production by 40 per cent and fruit production by 10 per cent.<sup>301</sup> However, ongoing political turmoil has left the country unable to set long-range strategies for reducing hunger and increasing food production, let alone tackle the challenges presented by climate change.

Although efforts at land reform have been made, there has been little success at equalising highly-skewed land holdings, reducing significant levels of landlessness, improving land tenure, or eliminating exploitative tenancy relationships. A Land Reform Commission convened by the Nepalese

## Nepal scorecard continued

---

government is in the process of revising legal and policy frameworks.<sup>302</sup>

A landlocked country with limited resources and mountainous topography, Nepal is home to the one of the most important water resources in Asia. Annual glacial melt from the Himalayas account for as much as 70 per cent of the summer flow in the Ganges and as much as 60 per cent of the flow in Asia's other major river systems.<sup>303</sup> However, Nepal's high altitude glaciers are retreating at a rate faster than the world average<sup>304</sup> and in the long-term this could result in massive freshwater shortages. Perennial rivers could change into seasonal streams causing freshwater scarcity in the dry months.<sup>305</sup> The farming poor, reliant on rain-fed agriculture and occupying land that is most at risk to flood and landslides, would suffer most from the drying up of local water sources.<sup>306</sup> In the Western Baitadi area of Nepal, where ActionAid carried out community surveys, it was found that severe flooding and extended dry seasons has resulted in a 20 per cent loss in crops.

Nearly 85 per cent of Nepal's female workforce is engaged in agricultural production, yet most of their labour is unpaid.<sup>307</sup> Seasonal migration of men and boys in search of paid work is growing, leaving women, girls and the elderly to manage family farms and struggle with food shortages.



## HungerFREE Scorecard

### Country: **Nigeria**

Leader: **President Goodluck Jonathan**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **20/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
<b>Hunger</b>	<b>C</b>	Medium hunger levels
<b>Climate food insecurity</b>	<b>A</b>	Low climate vulnerability
<b>Capacity and Preparedness Index</b>		
<b>Legal framework</b>	<b>D</b>	No right to food legislation
<b>Sustainable agriculture</b>	<b>D</b>	Low agriculture budget
<b>Social protection</b>	<b>E</b>	Low social protection
<b>Gender equality</b>	<b>B</b>	Moderate gender guidelines
<b>Climate adaptation plans</b>	<b>B</b>	Moderate climate adaptation plans

**Vulnerability index**

- Extremely vulnerable
- Seriously vulnerable
- Moderately vulnerable

### Remarks:

**With more than 12 million undernourished people, nearly a third of children underweight and 38 per cent of children showing signs of chronic malnutrition,<sup>308</sup> the evidence is clear that Nigeria must increase its spending on agriculture and ramp up production on the more than half of arable land that lies fallow<sup>309</sup> if it is to withstand soaring food prices and the coming economic losses attributed to climate change.**

Agriculture and water resources received a paltry 3.5 per cent of Nigeria's 2011 budget, a decline from the meagre 5.44 per cent it received in 2010.<sup>310</sup> This measly allocation will not scratch the surface of the improvements and inputs needed.

Despite appallingly low government investment, Nigeria's agricultural sector performed well, growing six per cent in 2010, which has been attributed to good weather conditions that boosted crop production.<sup>311</sup> Nigeria is still one of the largest food importers in the world, however, with spending on food imports reaching US\$628 billion from 2007 to 2010.<sup>312</sup> In 2011, the Consumer Price Index in Nigeria went up by 1.20 per cent in one month,<sup>313</sup> causing inflation to rise to 12.1 per cent from 11.8 per cent a month earlier.<sup>314</sup>

It is estimated that for areas with heavy soil erosion and a dependence on rain-fed agriculture, climate change could cause declines in agricultural yields of up to 50 per cent between 2000 and 2020. Extreme weather events such as thunderstorms, heavy winds and floods are already known

## Nigeria scorecard continued

---

to devastate farmland, leading to crop failure. Meanwhile, the tsetse fly has expanded its range northward in response to climate change, posing a threat to livestock in drier northern areas.<sup>315</sup>

Nigeria's National Adaptation Strategy and Plan of Action on climate change will take direction from communities thought to be most at risk; it will build on existing coping strategies and predictive climate scenarios to assess future vulnerability and long-term policy requirements.<sup>316</sup>

Since each state in Nigeria can set its own legislation, the combination of religious, customary and civil law makes it very difficult to ensure equality for women. Violence against women is widespread and common, as the country's penal code grants husbands the right to beat their wives, provided that it does not result in serious injury. Furthermore, there is only one state in the country that protects women from violence.<sup>317</sup>

## HungerFREE Scorecard

### Country: **Pakistan**

Leader: **Yousaf Raza Gillani**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **28/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	E	Very high hunger levels. Hunger increasing
Climate food insecurity	A	Low climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	D	Low agriculture budget
Social protection	E	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans



### Remarks:

**Conflict, natural disasters and rising global food prices<sup>318</sup> have pushed 83 million people in Pakistan – almost half its population – into hunger.<sup>319</sup> And following devastating floods that swamped one-fifth of the country,<sup>320</sup> it may take years before the agricultural sector gets back on track. Moreover, Pakistan scores very badly in terms of preparedness for adapting to climate change, falling at the bottom of our scorecard.**

Agricultural growth in Pakistan decreased to 1.2 per cent in 2010-11, largely because of crop losses caused by the floods. As a consequence, food imports soared, growing by 75 per cent in the first half of 2011.<sup>321</sup>

Despite Pakistan's food insecurity, the 2010/2011 budget allocation was only Rs.10873.7 million for the Food and Agriculture Division.<sup>322</sup> This is far too low, especially when coupled with Pakistan's increasing vulnerability to climate change. The future could look very grim for Pakistan unless more urgent measures are taken to revitalise agriculture and adapt to climate change.

The escalation in fighting between government forces and armed groups in Pakistan's North West Frontier Province and Federally Administered Tribal Areas has forced more than two million people from their homes with extensive damage to crops and livelihoods extensive.<sup>323</sup>

Over the past five years, erratic weather patterns have also destroyed many homes and farms.<sup>324</sup> In an ActionAid survey carried out across

## Pakistan scorecard continued

---

communities in Pakistan, all regions surveyed reported suffering from extreme weather conditions. Droughts and floods, for example, have decreased crop harvests by up to 50 per cent in the last three years in parts of the southern Punjab province.

One-quarter of Pakistan's natural forest cover has been lost over the past two decades. Illegal logging and clearing of forested lands for agriculture are mainly to blame for a deforestation rate of two per cent a year – one of the highest in the world.<sup>325</sup> To combat deforestation, Pakistan's Ministry of Environment recently launched a 15-year plan to conserve and replant the country's forests.<sup>326</sup>

Pakistan must urgently scale up its National Social Protection Strategy, which calls for social assistance reform, cash transfers and a relatively large allocation (of Rs 15 billion) for employment schemes.

Women have the right to own land, but data suggest that the share of female land ownership is very low.<sup>327</sup> Discriminatory traditions and attitudes have crippled laudable initiatives such as Sindh Province's commitment to distribute land to 80,000 poor and landless peasants – especially women. For example, some flood-affected women have returned from displaced person camps only to find squatters occupying their land.<sup>328</sup>

## HungerFREE Scorecard

### Country: **Rwanda**

Leader: **President Paul Kagame**

Overall 'preparedness' grade: **B (A-E)**

Overall 'preparedness' rank: **3/28**

Indicator	Grade	Comment
Vulnerability Index		
Hunger	C	Medium hunger levels
Climate food insecurity	C	High climate vulnerability
Capacity and Preparedness Index		
Legal framework	E	No right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	A	Good climate adaptation plans

**Vulnerability index**

- Extremely vulnerable
- Seriously vulnerable
- Moderately vulnerable

### Remarks:

Rwanda was the first country in Africa to sign on to the Comprehensive Africa Agricultural Development Programme (CAADP), and has demonstrated clear political will to decrease endemic levels of hunger and malnutrition. In addition to doubling government spending on agriculture over the last few years, from a low of five per cent in previous years,<sup>329</sup> Rwanda's government committed an extra US\$5 million in the agriculture sector in 2011.<sup>330</sup>

Newspaper reports show the agricultural sector grew 10.4 per cent in 2010, which was attributed to good weather and a government programme to boost the use of fertilisers.<sup>331</sup> There are also plans to launch a national school meal programme,<sup>332</sup> a welcome initiative given the historically high levels of child malnutrition.<sup>333</sup>

With extra resources now available for the agriculture sector, the government must channel more support to women farmers. Women constitute around 70 per cent of Rwanda's agricultural workforce, head about one-third of all households and perform 80 per cent of the sowing, 65 per cent of food processing, 61 per cent of hoeing and 72 per cent of the storage and transportation of produce. Yet they receive significantly less income and support than men.<sup>334</sup>

Landlocked and mountainous, with a high population density and staggering rates of deforestation and soil erosion, Rwanda has a hard battle ahead to continue to boost farm production.<sup>335</sup> Rwanda has lost half of its forest cover since 1990, including all remaining primary forest. Trees have

## Rwanda scorecard continued

---

been cleared for agriculture and settlements, triggering periodic floods and heavy rains that destroy crops.<sup>336</sup> Recognising the severity of the problem, Rwanda's government announced in February 2011 that it would undertake a countrywide restoration of its degraded soil, water, land and forest resources over the next 25 years. This is a welcome step in a country with such poor land degradation.<sup>337</sup>

Rwanda's national climate adaptation plan also includes projects to protect ecosystems, water resources and create early warning systems for disaster preparedness.<sup>338</sup> These new initiatives to tackle land degradation and plan for climate adaptation have helped earn Rwanda a high-ranking third place score in our grading of preparedness for tackling hunger and climate change.

In the western Gitesi district, communities surveyed by ActionAid reported that hailstorms, heavy rains and landslides are increasing in the rainy season. Other areas of Rwanda, such as the southern province of Nyanza, also reported severe drought, which has contributed to as much as a 50 per cent loss in local food production. As a result, communities report eating fewer meals or smaller portions per day.

## HungerFREE Scorecard

### Country: **Senegal**

Leader: **Abdoulaye Wade**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **26/28**

Indicator	Grade	Comment
Vulnerability Index		
Hunger	B	Low hunger levels
Climate food insecurity	B	Medium climate vulnerability
Capacity and Preparedness Index		
Legal framework	E	No right to food legislation
Sustainable agriculture	B	Medium agriculture budget
Social protection	D	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans



### Remarks:

**Senegal's ambitious plans to reach food self-sufficiency by 2015, and recent efforts to provide farmers with subsidised seeds and fertilisers, have made modest gains in the amount of food grown in the country. But 15 per cent of rural households and nearly nine per cent of urban dwellers still do not have enough to eat<sup>339</sup> – and the country is still overly reliant on food imports, leaving it at the mercy of global food prices.**

More than half of the country's food requirements are imported annually, including 800,000 metric tonnes of rice and 300,000 metric tonnes of wheat. High food prices in recent years have exacerbated problems of access to food with food inflation between 2010-2011 reaching almost 12 per cent.<sup>340</sup>

In March 2010, the government announced a new food security and child nutrition programme known as NESAs, which aims to improve the nutritional condition of children under five, as well as pregnant and nursing women, by providing services that would cushion them against the impact of food price hikes and sudden drops in agricultural harvests.<sup>341</sup>

This builds on the Great Offensive for Food and Abundance (GOANA), which aims to make Senegal self-sufficient in food production by 2015 by doubling rice production and improving maize and manioc farming using irrigation, cultivation of unused land near the Senegal River and heavily subsidised fertilisers, seeds and pesticides.<sup>342</sup>

## Senegal scorecard continued

---

The once fertile river valleys in Senegal are on the front lines of the country's fight against desertification. Rivers are drying up, grazing land for cattle is scarce, and increasingly dry soil is hard to farm.<sup>343</sup> Senegal also loses about 350,000 ha of its forests annually to fires that are frequently started to clear land for farming.<sup>344</sup> Senegal has experienced a 25 per cent drop in soil fertility since the 1970s.<sup>345</sup> Compounding the damage is the intensive agriculture practices many adopt in order to force higher yields from exhausted soil.<sup>346</sup>

Senegal's NAPA focuses on protecting coastal regions and reversing deforestation, but is considered disappointing as it does not concentrate on agriculture or recognise that creative adaptation techniques will need to be found to feed its population in the context of climate change.<sup>347</sup> Senegal's utter lack of policies to prepare or cope with the coming agricultural and environmental impacts of climate change has caused it to land third from the bottom of our HungerFREE rankings.

In Senegal, the southeastern area of Missirah has been adversely affected by severe flooding, with up to 97 ha of bananas destroyed during the 2010 floods. Interviews with affected communities show this has exacerbated the hunger in the area and decreased farmers' income. High food prices have resulted in up to 20 per cent of families in the Missirah area using baobab leaves to supplement their diet.



## HungerFREE Scorecard

### Country: **Sierra Leone**

Leader: **President Ernest Bai Koroma**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **17/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	Medium hunger levels
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans



### Remarks:

**In recent years, Sierra Leone has significantly increased spending towards the agriculture sector,<sup>348</sup> a welcome move in a country still struggling with endemic poverty and hunger, for which boosting agriculture must be a central pillar of development plans.<sup>349</sup>**

Since its decade-long civil war ended in 2002, Sierra Leone has dramatically increased its arable land to nearly 1.8 million hectares.<sup>350</sup> In 2010, the government launched a National Agricultural Response Programme (NARP) to strengthen farmer field schools and improve links to markets,<sup>351</sup> building on the 2006 introduction of a similar programme meant to bolster marketing and crop storage in the capital Freetown and peri-urban centres.<sup>352</sup>

Sixty per cent of the population survives on small-scale farming. And while hunger rates have fallen by nearly 10 per cent since the end of the war, more than one-third of people are still considered undernourished, and one in every five children under the age of five is considered under weight.<sup>353</sup>

Inflation, depreciation of the local currency and dependency on rice imports has pushed food prices higher than many can afford. In order to mitigate the impact of high food prices, the government adjusted taxes and placed a ban on the export of rice and palm oil to protect local supply.<sup>354</sup> This year's bumper rice crop and the ban on rice exports are expected to continue to reduce inflation, which peaked at 18 per cent in September 2010.<sup>355</sup>

## Sierra Leone scorecard continued

---

Sierra Leone's strategy for dealing with climate change focuses on soil management, irrigation and seed selection, and places heavy emphasis on restoring and improving meteorological and climatic data collection and analysis.<sup>356</sup> With the rural economy almost entirely dependent on rain-fed agriculture, households are poorly placed to cope with climate change.<sup>357</sup> And while the government is beginning to put in place plans for climate adaptation, much more needs to be done to halt the climate challenges Sierra Leone is already facing, which include the risk of flooding, salinity and damage to its marine habitat from the rising tides of the warming Atlantic Ocean.

Although Sierra Leone and Liberia have agreed to protect the highly valued Gola rainforest reserve from mining concessions, and to encourage sustainable management by forest communities, much of the forest territory in Sierra Leone is vulnerable to a high rate of degradation and under considerable pressure from "slash and burn" clearance for agriculture, cattle ranching and mining interests.<sup>358</sup>

## HungerFREE Scorecard

### Country: **South Africa**

Leader: **President Jacob Zuma**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **10/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	E	Very high hunger levels. Hunger increasing
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	C	Right to food legislation in progress
Sustainable agriculture	D	Low agriculture budget
Social protection	C	Medium social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	C	Moderate climate adaptation plans



### Remarks:

**Relatively wealthy South Africa is the only country in the region to be considered self-sufficient in food production, yet recent statistics reveal that millions of South Africans remain food insecure,<sup>359</sup> with 32 per cent of South African children suffering from hunger, highlighting a serious lack of affordable food within the country.<sup>360</sup>**

A quarter of children under five suffer from moderate to severe stunting, the result of chronic malnourishment. Twelve per cent of children under five are considered to be moderately to severely underweight and three per cent of children show signs of moderate to severe wasting. A third of children under the age of six suffer from vitamin A deficiency; one in five suffers from anaemia.<sup>361</sup> This is unacceptable in a middle-income 'emerging' country and stems from the worst levels of inequality in the world, which leave large parts of the population in appalling poverty.

South Africa's commercial farms grow fruits and wine for export, yet many of their female workers rarely have enough to eat and are often relegated to working part-time or seasonally.<sup>362</sup>

The former "homeland" areas from the apartheid era are amongst the most severely degraded in the country. As a result of the unjust distribution of land, agricultural land in the former homelands has been overgrazed and over-cropped for decades and in many cases is now degraded almost beyond repair.<sup>363</sup>

The government's commitment to supporting poor rural farmers can be

## South Africa scorecard continued

---

seen through its increased funding for smallholder farmers; for example, nearly 1,000 farmers have received micro-loans through the Farmer Support Programme.<sup>364</sup> In addition, an estimated 15 million people have benefited from a cash transfer programme. South Africa also has numerous non-contributory schemes, including the National School Nutrition Plan.<sup>365</sup>

Meanwhile, South Africa comes in as the most third most vulnerable country on the HungerFREE vulnerability index, meaning they are likely to be severely affected by the impacts of climate change and increasing land degradation on food security.

Heavy rains that hit crops in 2011 forced the prices of vegetables up by 2.1 per cent between April 2010 and April 2011. Food inflation increased by 4.8 per cent in the same period.<sup>366</sup> In ActionAid surveys carried out in the Ngqushwa in the Eastern Cape and Thulamela in Limpopo, rural communities in South Africa, it was reported that severe water logging had led to a significant decrease in crop yields. Most regions surveyed in South Africa cited a huge loss of the top fertile soil, mainly due to poor farming practices.

## HungerFREE Scorecard

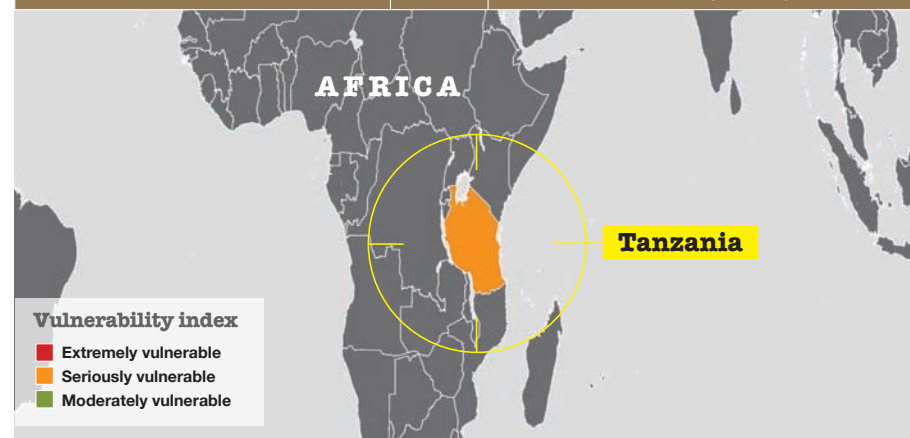
### Country: **Tanzania**

Leader: **President Jakaya Kikwete**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **5/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	High hunger levels. Hunger increasing
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	D	Low right to food legislation, but in progress
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	B	Moderate climate adaptation plans



### Remarks:

**With more than 40 per cent of Tanzania's population living with chronic food shortages and nearly as many children under the age of five classified as chronically malnourished,<sup>367</sup> Tanzania must carefully balance the temptation of projected profits from biofuel plantations against the critical need to improve the country's food security.**

About 2.5 million ha of Tanzania's land has been identified as 'suitable' for investment projects and by 2009 almost 640,000 ha had been allocated for biofuel production.<sup>368</sup> These investments must be carefully weighed against their impacts on food security and human rights.

Tanzania plans to raise incomes and alleviate poverty by 2025 using a Rural Financial Services Programme that hinges on a rural micro-finance policy.<sup>369</sup> Loans will need to be hefty enough to allow farmers to invest in new farming equipment: currently about 70 per cent of Tanzania's crops are cultivated by hoe, 20 per cent by ox plough and only 10 per cent by tractor.<sup>370</sup> Further investments should also be made available via the Kilimo Kwana (Agriculture First) policy that is meant to modernise Tanzania's agricultural sector.

Agriculture spending continues to receive modest year-over-year increases, reaching 7.7 per cent of the country's 2010/2011 budget.<sup>371</sup>

In May 2011, the Ministry of Education and Vocational Training tabled a bill that would make school feeding programmes mandatory across the

## Tanzania scorecard continued

---

country.<sup>372</sup> While laudable in its recognition that no child should miss class on grounds of lack of food, legislation is not enough. Parliamentarians must ensure school budgets can sufficiently cover the cost of nutritious foods.

In 2011, Tanzania experienced double-digit food inflation, placing it at 10 per cent. The Consumer Price Index (CPI) also rose by roughly 10 per cent.<sup>373</sup> In May 2011, maize was trading at 40 to 50 per cent above prices seen in the previous year. In response, the government introduced a short-term ban on cereal exports to boost national stocks and contain inflation.<sup>374</sup>

This rampant food inflation, alongside decreasing crop yields in some parts of Tanzania, has left some communities eating less. For example, ActionAid surveys conducted in the central region around Singida found crop harvests have steadily decreased, while food prices have steadily increased. The lack of food in the Singida area has resulted in 85 per cent of households cutting back on food, with adults eating once, children generally receiving two small meals and women eating the least.

## HungerFREE Scorecard

### Country: **Uganda**

Leader: **President Yoweri Museveni**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **7/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low hunger levels
Climate food insecurity	A	Low climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	C	Right to food legislation in progress
Sustainable agriculture	B	Medium agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	B	Moderate climate adaptation plans

**Vulnerability index**

- Extremely vulnerable
- Seriously vulnerable
- Moderately vulnerable

### Remarks:

**Already off-track for meeting Millennium Development Goal targets on poverty and hunger, a regional drought and famine will likely further destabilise Uganda's food security and create greater inequalities in food access.**

While the World Food Programme claims there is not a lack of food in Uganda, its distribution and affordability has created pockets of severe hunger, particularly in the northeastern Karamoja region, where frequent natural disasters, violence, environmental degradation and extreme poverty have eroded people's ability to cope with crises. More than half of all children under five in Karamoja and the southwest are stunted. Across the country, the stunting rate is above 38 per cent.<sup>375</sup>

2011's drought is driving food prices higher in Uganda, where the price of cassava flour prices increased by 25 per cent, beans by 37 per cent, and maize flour by 41 per cent.<sup>376</sup> In Uganda, most households are significant net food buyers both in rural (61 per cent) and urban (92 per cent) areas as opposed to net food sellers.<sup>377</sup> The situation has been worsened by unregulated regional trade in staple foods in raw form by middlemen who exploit farmers at harvest time.

The National Development Plan replaced Uganda's Poverty Eradication Action Plan (PEAP) in 2011.<sup>378</sup> This four-year plan will broaden the country's development strategy from poverty reduction to structural transformation for growth and increased living standards.<sup>379</sup>

## Uganda scorecard continued

---

Characteristically low for the last two decades, government budgetary allocation to agriculture was less than five per cent in the 2011/12 national budget,<sup>380</sup> which is hardly enough to revamp the performance of Uganda's weak agricultural sector. Growth has steadily declined from 7.9 per cent in 2000/2001 to 0.9 per cent in 2010/2011 (although it did show signs of recovery in 2008/2009, with a 2.6 per cent growth rate). The government must therefore increase its budget allocation to agriculture in order to fulfil the Maputo Declaration and reduce chronic hunger.

Uganda has already lost two-thirds of its forests in the last 20 years and could lose all of its forested land by 2050.<sup>381</sup> Experts fear more than 80 per cent of Uganda's land will dry up into unusable desert in less than 100 years if the current climate challenges are not addressed.<sup>382</sup>



## HungerFREE Scorecard

### Country: **Vietnam**

Leader: **Prime Minister Nguyễn Tấn Dũng**

Overall 'preparedness' grade: **D (A-E)**

Overall 'preparedness' rank: **22/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	B	Low hunger levels
Climate food insecurity	B	Medium climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	A	High agriculture budget
Social protection	E	Low social protection
Gender equality	A	Good gender guidelines
Climate adaptation plans	E	Poor climate adaptation plans



### Remarks:

**Vietnam remains a success story, coming out of a decade of record growth with impressive poverty reduction figures and recently joining the ranks of middle-income countries.<sup>383</sup>**

A sustained commitment starting from the mid-1980s to agricultural investment and progressive policies set the agricultural sector booming. Since then, the sector has experienced high growth, transforming the country from a food importer to one of the world's major exporters. However, the government must take care not to de-prioritise agriculture in premature celebration of the success of its policies.<sup>384</sup>

Strategies followed by the government have relied heavily on chemical fertiliser use, with large amounts of fertilisers available to farmers at a subsidised rate. The overuse of fertiliser is leading to soil degradation and more must be done to preserve land.

Vietnam's successes are also in serious danger of being derailed by climate change. Predicted rises in the ocean would affect five per cent of Vietnam's land area, 11 per cent of its population and a whopping 78 per cent of its agriculture.<sup>385</sup> The Mekong Delta region is likely to suffer the most from climate change. When the sea-level rises, one-third of the region's agricultural land will vanish, seriously affecting production.<sup>386</sup>

At present, Vietnam's adaptation plans do not sufficiently reflect the urgency of the need to adapt to changing climates. For instance, in the northern coastal province of Quang Ninh, the combined effect of droughts

## Vietnam scorecard continued

---

and floods are already seriously affecting local food security. In interviews carried out by ActionAid in the region, it was reported that yields are decreasing by 100 kg and even lower.

It has been estimated that food prices have doubled in Vietnam since 2005 and that the cumulative effect of inflation has been approximately 80 per cent since 2005.<sup>387</sup> Food price inflation hit 17 per cent in February 2011<sup>388</sup> and in an effort to alleviate the problem, public sector wages have increased by 14 per cent.<sup>389</sup>

Meanwhile, more must be done to ensure women have equal access to land. Women account for only 10 to 12 per cent of the 12 million farmers allotted land. Land-use right certificates are usually issued in the husband's name, leaving women insecure in their land tenure and unable to take advantage of land equity.<sup>390</sup>

## HungerFREE Scorecard

### Country: **Zambia**

Leader: **President Michael C. Sata**

Overall 'preparedness' grade: **C (A-E)**

Overall 'preparedness' rank: **13/28**

Indicator	Grade	Comment
<b>Vulnerability Index</b>		
Hunger	C	Medium hunger levels. Hunger increasing
Climate food insecurity	C	High climate vulnerability
<b>Capacity and Preparedness Index</b>		
Legal framework	E	No right to food legislation
Sustainable agriculture	B	Medium agriculture budget
Social protection	E	Low social protection
Gender equality	B	Moderate gender guidelines
Climate adaptation plans	B	Moderate climate adaptation plans

**Vulnerability index**

- Extremely vulnerable
- Seriously vulnerable
- Moderately vulnerable

### Remarks:

**Zambia's recent impressive economic growth has thus far failed to translate into significant poverty reduction. Today, 59 per cent of its population live below the poverty line and 37 per cent are considered to be living in extreme poverty.<sup>391</sup> Zambia faces chronic malnutrition, with 43 per cent of its 13 million people not getting enough to eat.<sup>392</sup> Some 45 per cent of children under the age of five are stunted due to chronic malnutrition.<sup>393</sup>**

Several decades of government neglect to agriculture have left small-scale farmers struggling without effective extension services or access to fertilisers and seed stock. Lack of access to financial services, transport and markets has further stagnated the country's agricultural productivity.<sup>394</sup>

Although a signatory to the CAADP, the 2011 budget will see only 6.7 per cent spent on the agricultural sector. The government has formulated a national nutritional policy but not enough is being done to implement its provisions. The new president, sworn in at the end of September 2011, could do much to improve small-scale agriculture and ensure that more equitable pro-poor growth works for the vast majority of Zambians involved in agriculture.

A Farmer Input Support Programme (FISP) continues to distribute up to 84,000 tonnes of fertiliser each year, while the subsidy level increased up to 60 per cent.<sup>395</sup> The programme, initially named the Fertiliser Support Programme, was to provide the poorest small-scale farmers with free inputs.<sup>396</sup> This programme has led to some tangible benefits for the

## Zambia scorecard continued

---

smallholder farmers who are able to access support. For instance, in interviews carried out by ActionAid with communities in the Lukulu district in the Western Province, a slight increase in household income was reported as a result of government agriculture support to subsidised inputs such as fertiliser and seeds.

Climate change and soil erosion are major concerns, with Zambia ranking as the sixth most vulnerable country in the scorecard vulnerability index. Degradation of forests in the Copperbelt is widespread, resulting in serious soil erosion.<sup>397</sup> Between 1990 and 2005, Zambia lost 13.6 per cent of its forest cover, or around 6.6 million ha.<sup>398</sup>

A woman heads one in five farming households. Migration patterns have left women alone on family farms while men seek paid jobs in urban centres – what is sometimes referred to as the ‘feminisation’ of agriculture – yet these same women are routinely denied legal rights to the land, affecting their ability to develop and manage the farms they’re left to run. While the Constitution forbids laws that discriminate based on gender or sex, it excludes customary laws governing land tenure, which traditionally deny women the right to own land. The 2006 Draft Land Policy designed by the Ministry of Lands prescribes that 30 per cent of land should be made available to women, yet the policy to date has not been finalised. Much more must be done in the future to ensure that women, who make up around 70 per cent of the agricultural workforce, are able to access government support.<sup>399</sup>

## Information on indicators, methodology and sources

---

### **This report evaluates 28 developing countries in their efforts to eradicate hunger and confront climate change.**

Other international rankings focus only on the scale or magnitude of hunger. The HungerFREE Scorecard is different in that it also assesses the concrete steps that governments are taking, through their policy actions, towards tackling hunger and ensuring food security. The HungerFREE Scorecard has been produced by ActionAid in 2009 and 2010. This year we have brought in a new climate angle. This decision was taken due to the increasingly dire predictions of the likely impacts of climate change on agriculture. With a climate deal on emission reductions no closer to being agreed by rich countries, it is increasingly clear that the world is going to need to adapt to changing climates and the impact this is likely to have on the agriculture sector and countries ability to ensure future food security.

Our survey of countries' fall into two categories, the first looks at overall vulnerability to hunger and the second on the capacity and preparedness of the countries to address this through their policy responses.

The scorecard 'Vulnerability Index' assesses the countries' vulnerability to hunger. It takes current hunger numbers and child malnutrition rates as a 'baseline' from which to judge how far a country has come already or how far they have to go in future in tackling hunger. It then looks at pre-existing environmental and land degradation as an indicator, demonstrating likely vulnerabilities of the agriculture sector from climate change in the present and future. Given that land resources are likely to be subjected to increased pressures as a result of climate change, efforts to maximise the amount of useable land are likely to support a country to be prepared for future climatic changes. The flipside of this, is that countries with high levels of pre-existing land which is degraded and no longer arable, will be severely impacted in the future with increasing climate stresses.

Those countries that are most vulnerable are those with very high underlying levels of chronic hunger and child malnutrition, coupled with rapid rates of deforestation and/or desertification that will make food production increasingly difficult as global warming intensifies.

Every country has its own context, of course. Some have endured civil conflict; others have been confronted with rampant HIV & AIDS pandemics, or natural disasters. Some may be fighting back from serious handicaps, while others with solid foundations may be failing to build on them. With the inclusion of climate change issues in the 2011 Scorecard, it was recognised that all developing countries have varying climates and therefore vulnerabilities, all exacerbated by different factors. Hence, we have designed our hunger Scorecard to give credit for effort in their policies for tackling hunger, as well as adding a new element which looks at effort in trying to support adaptation to climate change in agriculture.

This is measured through the "Capacity and Preparedness Index", which gauges policy interventions that combat hunger, such as increased support for agriculture, rural development, and smallholder farmers. This year we have added an indicator assessing countries' capacity to adapt their agricultural sector to increasing pressures from climate change.

Our policy indicators for tackling hunger are based on the actions that the UN has identified as most critical to reverse growing global hunger, through recommendations in the Comprehensive Framework for Action (CFA) on the Global Food Crisis, which were first drafted in 2008 and consequently updated in 2010, available here: [www.fao.org/fileadmin/user\\_upload/ISFP/UCFA\\_Final.pdf](http://www.fao.org/fileadmin/user_upload/ISFP/UCFA_Final.pdf). The recommendations given within the CFA are also reflected in numerous other UN agreements and guidelines.

The 2011 Scorecard also recognises the difficulties that are involved for developing countries in creating climate adaptation plans, and most importantly financing and implementing the plans. The climate change indicators are drawn from data from the UNFCCC (UN Framework Convention on Climate Change) data and the UN Food and Agriculture Organisation. The data was chosen to focus on actions that will best support small-scale farmers in adapting to climate change. Although, it should be noted that it is very difficult to find cross-country data that measures the threats of climate change to agriculture, with clear links to small-scale farmers.

### Total scores across indicators

The total scorings across the two Indexes are explained below, along with general assumptions in reaching the total grades. This is followed by a much more detailed breakdown of each indicator, data sources and the methodology employed to calculate the scores.

#### Vulnerability index

The first index, the “*Vulnerability index*” includes two indicators:

- Existing levels of hunger (50%);
- Climate vulnerability of the country (50%)

To compute the total scores for vulnerability, we have assigned a weighting of 50 per cent to hunger and a weighting of 50 per cent to climate vulnerability.

#### Capacity and preparedness index

The second index, the “*Capacity and Preparedness index*”, includes five indicators which measure policy responses to hunger and climate and the weighting given to each indicator in the total scores:

- Legal framework (10%);
- Social protection (20%);
- Sustainable agriculture (30%);
- The country’s commitment to gender equality and women’s rights (10%);
- Climate adaptation plans and responsiveness to agriculture and especially smallholder farmers (30%).

### Table 3: Overall vulnerability index

Countries are ranked according to most vulnerable, i.e. the most vulnerable country is at the top, and the least vulnerable country is at the bottom.

Country	Climate food insecurity vulnerability	Existing hunger	Overall vulnerability rank
<b>Weight</b>	<b>50%</b>	<b>50%</b>	
<b>DR Congo</b>	1	1	1
<b>Burundi</b>	3	2	2
<b>South Africa</b>	15	4	3
<b>Haiti</b>	12	6	4
<b>Bangladesh</b>	4	8	5
<b>Zambia</b>	2	10	6
<b>India</b>	24	3	7
<b>Sierra Leone</b>	5	9	8
<b>Ethiopia</b>	17	7	9
<b>Rwanda</b>	8	13	10
<b>Liberia</b>	7	13	11
<b>Tanzania</b>	10	14	12
<b>Guatemala</b>	9	17	13
<b>Nepal</b>	6	17	14
<b>Pakistan</b>	28	5	15
<b>Mozambique</b>	18	11	16
<b>Cambodia</b>	14	17	17
<b>Lesotho</b>	11	25	18
<b>Viet Nam</b>	13	21	19
<b>Kenya</b>	19	19	20
<b>Malawi</b>	21	18	21
<b>China</b>	16	27	22
<b>Brazil</b>	20	25	23
<b>Nigeria</b>	26	20	24
<b>Uganda</b>	25	23	25
<b>Senegal</b>	23	26	26
<b>The Gambia</b>	27	23	27
<b>Ghana</b>	22	28	28

**Table 4: Overall capacity and preparedness index**

Countries are ranked according to the most prepared, i.e. most prepared is at the top and least prepared is at the bottom.

Country	Legal Commitment	Sustainable agriculture	Social protection	Gender equality	Climate change adaptation	Overall capacity and preparedness rank
Weight	10%	30%	20%	10%	30%	
Brazil	1	2	1	1	3	1
Malawi	4	1	12	13	1	2
Rwanda	23	7	20	15	2	3
Ethiopia	13	5	13	24	7	4
Tanzania	6	8	27	10	9	5
Nepal	10	11	24	14	4	6
Uganda	5	16	28	17	8	7
Bangladesh	15	9	9	25	12	8
Haiti	11	3	25	5	18	9
South Africa	3	22	3	7	13	10
China	27	13	5	20	14	11
Lesotho	25	21	6	6	3	12
Zambia	26	12	22	21	10	13
Burundi	16	4	18	8	21	14
Ghana	17	25	14	11	6	15
Liberia	18	23	15	23	5	16
Sierra Leone	19	10	21	28	25	17
India	7	20	2	27	17	18
Mozambique	9	15	10	18	23	19
Nigeria	14	19	16	22	11	20
Guatemala	2	26	4	4	26	21
Viet Nam	28	6	11	3	28	22
The Gambia	22	14	19	16	22	23
Kenya	8	18	7	12	19	24
Cambodia	20	27	23	2	15	25
Senegal	24	17	8	9	24	26
Democratic Republic of Congo	12	24	26	19	16	27
Pakistan	21	28	17	26	27	28

The weightings were decided relative to the overall impact that a policy intervention would have in responding to hunger and climate change and supporting the poorest and most vulnerable to adapt to and access sufficient food. For instance, social protection measures are vital for the poorest to be able to access enough nutritious food, while whether enough government support is reaching smallholders can be partly gauged by the level of budget allocation. Agriculture budgets have been chosen as they demonstrate government activity and commitment towards agriculture and eradicating hunger.

The 28 developing countries included in the Scorecard participate in ActionAid's HungerFREE campaign, meaning that ActionAid staff and partners in these countries supply us with first-hand information about the policies and programmes of their governments towards ending hunger and adapting to climate change. Another important consideration in the choice of countries was the availability of reliable comparative data across various indicators.

Overall, we set a tougher standard for some 'wealthier' developing countries, in social protection, such as Brazil, China, India and South Africa, than for low-income countries – as they can afford it more.

The grading scale for all the indicators is the following:

**A:** 81% – 100%

**B:** 61% - 80%

**C:** 41% - 60%

**D:** 21% - 40%

**E:** 0 % - 20%

Due to the paucity of data in some instances, we had to make a number of assumptions in the methodology for the calculations, grading and ranking used in this report.

This next section describes the data gaps, assumptions and calculations in detail to provide full transparency.

## The vulnerability index

### Indicator: hunger

Have countries progressed towards the elimination of the scale and intensity of hunger?

#### Data analysis

Hunger is measured as:

The prevalence of underweight in children under 5 years; (WHO data from the period 2001-2008); and the proportion of the population that are chronically undernourished (FAO data from 2005–07).

#### General assumptions:

- This scorecard evaluates countries not only on the initiatives that they undertake towards the elimination of hunger, but also the scale and intensity of undernourishment.
- To estimate the scale of hunger for among national populations as a whole we have used the FAO's most recent country-by-country estimates of undernourishment as a percentage of the population (reflecting the share of the population with insufficient dietary energy intake over a three-year period from 2005 – 2007)
- We are aware that this data is out of date; however, at the time of writing the scorecard this is the latest available data from FAO, which enables a country-by-country comparable overview from a credible source. At the national level, governments, academic organisations and civil society bodies also set their own minimum dietary thresholds but these are not comparable across countries.
- According to the FAO, undernourishment refers to the condition of people whose dietary energy consumption is continuously below a minimum dietary energy requirement for maintaining a healthy life and carrying out light physical activity with an acceptable minimum body-weight for attained-height. It is worth noting that the FAO's hunger thresholds have recently been reduced to 1600-2000 kilocalories per person per day, which takes millions of people out of hunger at a single stroke.
- The second set of estimates used to evaluate the extent of hunger is the prevalence in countries of underweight children under the age of five made available by World Health Organisation (WHO) Child Growth Standards. These indicate the proportion of children suffering from weight loss and/or reduced growth.



- To score countries based on the scale of hunger, we have chosen to take a simple average of two sources of data: estimates of undernourishment as a percentage of the population (FAO) and the prevalence of underweight children under the age of five (WHO).
- While this might imply an element of double-counting, we have chosen to find an average of the two sets of data for a number of reasons:
  1. The FAO data are an average over the period 2005-2007; while the WHO data on children is not an average, but for the latest available year in the period 2001-2008;
  2. The FAO data are based on macro estimates of population projections, food availability and inequality in food distribution benchmarked against varying hunger thresholds which are unique for each year and country in the world, while the WHO data are based on extensive national primary surveys; and
  3. Since children are the most vulnerable to undernourishment with potentially irreversible life-long impacts, the measure of child undernourishment, in conjunction with that of the entire population, ensures their vulnerability is not subsumed in population averages.
- To ensure that we are setting reasonable standards for all countries, we have assigned each to one of three categories (based on July 2009 GNI per capita): low-income; lower-middle income; and upper-middle income. These are World Bank categories, and are defined by GNI per capita:
  - Below \$995 = low-income
  - \$996 - \$3,945 = lower-middle income
  - \$3,946 - \$12,195 = upper-middle income
  - \$12,196 or more = high income
- The sub-indicator scale of hunger has a weight of 75 per cent on the Scorecard, while the intensity of hunger has a weight of 25 per cent. The former describes the entire population (with an added emphasis on children who are the most vulnerable), while the latter analyses the intensity of hunger amongst those who are already undernourished or food-deprived.

#### Sub-indicator: Scale of hunger

- First, to score countries based on the scale of hunger, we have chosen to take a simple average of two sources of data:

The most recent estimate of undernourishment as a percentage of the population (FAO) and the most recent prevalence of underweight children under the age of five (WHO).

Then we divided the selected countries into three categories – low income lower-middle income and upper middle income – based on the World Bank classification, and calculated the average, minimum and maximum for each sets of countries.

Then, a two-pronged formula has been used to determine scores based on the standard bell curve methodology of normal distribution to evaluate each set of countries based on their deviation from their respective average. If the scale of hunger is more than the respective average (the more the hunger, the lower the score) of each set of countries, then the formula used to assign a percentage score between 0 – 50 is:

$$\frac{50 - ([\text{Country} - \text{Average}] \times 50)}{\text{Maximum} - \text{Average}}$$

If the scale of hunger is less than the respective average of each set of countries, then the formula used to assign a percentage score between 50-100 is:

$$\frac{100 - ([\text{Country} - \text{Minimum}] \times 50)}{\text{Average} - \text{Minimum}}$$

However, in all cases, it is assumed that a country which has achieved zero hunger will be awarded 100 marks. Therefore, since the minimum in all cases is assumed to be zero, the formula can also be written as:

$$\frac{100 - ([\text{Country} - 0] \times 50)}{(\text{Average} - 0)}$$

Hence, although South Africa has similar hunger levels as China, South Africa, as a middle income country, will receive a substantially lower percentage scores than China, which is a lower-middle income country. Also, Vietnam, as a low-income country, receives a higher percentage score than Guatemala, a lower middle income country with similar levels of achievement.

**Table 5: Existing Hunger**

Countries are ranked according to the most hungry, i.e. the hungriest country is at the top and the least hungry country is at the bottom.

Country	Prevalence of underweight in children under 5 years	Hungry population (as a percent of national population)	Food deficit of undernourished population	Food deficit of undernourished population	Scores for hunger	Grade for hunger	Overall country rank for hunger
Year	2000-2006	2005-07	2007				
Measure	percent	percent	(kcal/person/day)				
Weight	75%			25%			
DR Congo	28.2	69	430	Acute	3	E	1
Burundi	38.9	62	360	Intense	5	E	2
India	43.5	21	260	High	11	E	3
South Africa	12	5	210	High	13	E	4
Pakistan	31.3	26	280	High	19	E	5
Haiti	18.9	57	430	Acute	21	D	6
Ethiopia	34.6	41	310	Intense	28	D	7
Bangladesh	41.3	27	290	High	36	D	8
Sierra Leone	21.3	35	390	Intense	41	C	9
Zambia	14.9	43	330	Intense	43	C	10
Mozambique	21.2	38	280	High	44	C	11
Rwanda	18	34	330	Intense	47	C	12
Liberia	20.4	33	310	Intense	47	C	13
Tanzania	16.7	34	280	High	51	C	14
Guatemala	17.7	21	210	High	53	C	15
Nepal	38.8	16	190	Moderate	53	C	16
Cambodia	28.8	22	250	High	53	C	17
Malawi	15.5	28	290	High	55	C	18
Kenya	16.5	31	220	High	56	C	19
Nigeria	26.7	6	190	Moderate	60	C	20
Viet Nam	20.2	11	280	High	63	B	21
Uganda	16.4	21	190	Moderate	64	B	22
The Gambia	15.8	19	240	High	64	B	23
Brazil	2.2	6	220	High	66	B	24
Lesotho	16.6	14	110	Moderate	66	B	25
Senegal	14.5	17	170	Moderate	69	B	26
China	6.8	10	250	High	71	B	27
Ghana	14.3	5	160	Moderate	78	B	28

### Sub-indicator: Intensity of hunger

- The intensity of food deprivation measured by the FAO indicates how much food-deprived people fall short of minimum food needs in terms of dietary energy. It is measured as the difference between the minimum dietary energy and the average dietary energy intake of the undernourished population (food-deprived). The intensity of food deprivation is low when it is less than 200 kilocalories per person per day and high when it is higher than 300 kilocalories per person per day. The greater the food deficit, the greater the susceptibility to health risks related to undernourishment such as anaemia or even blindness.
- To classify countries based on the extent of the deprivation, the following assumptions have been used based on the extent of the food deficit of the undernourished population (kcal/person/day):

Food deficit

- >400 = "Acute",
- >300 = "Intense",
- >200 = "High",
- <200 = "Moderate"

Assuming that the maximum food deficit is 450 kcal/person/day, to compute scores for this indicator, the following formula has been used:

$$\frac{100 - [\text{Food deficit of the undernourished population (kcal/person/day)} \times 100]}{4.5}$$

### Total scores for hunger

To compile total scores for this indicator, the following weights were used: 37.5 per cent for the average of rates of 2005-7 proportion undernourished and most recent child underweight rates; and 25 per cent for the intensity of hunger.

### Data sources

- Scale of hunger: Average data for the proportion of undernourished in total population was obtained from FAO: [http://www.fao.org/fileadmin/templates/ess/documents/food\\_security\\_statistics/PrevalenceUndernourishment\\_en.xls](http://www.fao.org/fileadmin/templates/ess/documents/food_security_statistics/PrevalenceUndernourishment_en.xls)
- Intensity of hunger: Data for the year 2005-7 have been obtained from website

of the FAO statistics division: [fao.org/fileadmin/templates/ess/documents/food\\_security\\_statistics/Depth\\_Hunger\\_en.xls](http://www.fao.org/fileadmin/templates/ess/documents/food_security_statistics/Depth_Hunger_en.xls)

- Prevalence of underweight children under the age of five estimates have been obtained from WHO Statistical Information System (WHOSIS): <http://www.who.int/whosis/en/>
- Income classifications were from the World Bank (July 2010 according to 2009 GNI per capita). See: <http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.XLS>

### Indicator: Climate food security vulnerability

The 2011 HungerFREE Scorecard measures climate vulnerability through the proportion of land degraded and the population affected by land degradation. Land degradation is defined as 'the reduction in quality (fertility) of land due to any change or disturbance to the land caused by one or more combination of human-induced processes'. 'Desertification' refers to land degradation in arid/semi-arid countries. Deforestation is a major problem in countries with tropical forests.

The percentage of the population that is affected by degradation also indicates the vulnerability of poor people to reach food security and maintain livelihoods. In countries that suffer from large scale land degradation caused by human-induced climate change and environmental damage, poor communities face increased food insecurity and hunger levels. For smallholder farmers, the impact of land degradation is intensified. This affects the food security of countries, particularly those which depend heavily on smallholder farmers for food provision. This indicator thus seeks to measure the degree of vulnerability that our 28 developing countries face due to land degradation resulting from climate change.

The extent to which countries are tackling land degradation, including both reducing its drivers and restoring degraded land, can be used as an indicator for climate change impacts on vulnerability – given that land resources are likely to be subjected to increased pressures as a result of climate change. Efforts to maximise the amount of useable land are likely to better prepare a country for future climatic changes.

**Table 6: Climate food security vulnerability**

Countries are ranked according to vulnerability, i.e. the most vulnerable country is at the top, and the least vulnerable country is at the bottom.

Country	Land degradation - area (%)	Land degradation - population (%)	Grade for land degradation	Overall country rank for land degradation
Year	2008			
Weight	50	50		
DR Congo	57.43	53.49	C	1
Zambia	60.41	50.07	C	2
Burundi	48.56	52.09	C	3
Bangladesh	47.52	49.12	C	4
Sierra Leone	50.04	39.33	C	5
Nepal	38.85	48.93	C	6
Liberia	45.34	38.12	C	7
Rwanda	43.3	39.11	C	8
Guatemala	51.32	30.46	C	9
Tanzania	40.87	39.48	C	10
Lesotho	34.08	44.49	C	11
Haiti	42.6	34.56	B	12
Viet Nam	40.67	35.27	B	13
Cambodia	43.06	24.03	B	14
South Africa	28.82	38.14	B	15
China	22.86	34.71	B	16
Ethiopia	26.33	29.1	B	17
Mozambique	28.26	26.36	B	18
Kenya	18.02	35.59	B	19
Brazil	22.11	26.67	B	20
Malawi	26.05	19.89	B	21
Ghana	21.11	20.95	B	22
Senegal	17.66	20.49	B	23
India	18.02	16.5	A	24
Uganda	17.58	15.04	A	25
Nigeria	9.9	13.33	A	26
The Gambia	12.35	1.93	A	27
Pakistan	2.57	3.58	A	28

- **Sub-indicator: Percentage of land affected by degradation.** Data from ISRIC were used to find out the amount of degraded land. The score for this indicator is the percentage of degraded land itself.
- **Sub-indicator: Percentage of population affected by land degradation.** Similarly for this indicator also we used data from ISRIC, showing the percentage of the population affected by land degradation. Here also the score is the per cent itself.

### Total scores for climate vulnerability

To measure the overall score of climate vulnerability, the average of the individual scores (percentages) of the indicators were calculated. Then, the final score is determined by subtracting this average from 100. An average of the two percentages was used. The overall developing country score for this indicator is 100 minus the average of the two percentages.

### Data sources

- FAO and World Soil Association, 2008, *Global assessment of land degradation and improvement*, [http://www.isric.nl/ISRIC/webdocs/docs/report%202008\\_01\\_glada%20international\\_rev\\_nov%202008.pdf](http://www.isric.nl/ISRIC/webdocs/docs/report%202008_01_glada%20international_rev_nov%202008.pdf)

## Capacity and preparedness index

### Indicator: Legal framework

The HungerFREE Scorecard evaluates each country's right to food legal framework, placing most value on legislation guaranteeing the right to food. Important to note is that the measure only considers whether legislation is in place – rather than the quality of the legislation or how well it is being implemented.

### Data analysis

- In the case of constitutional provisions, we have identified constitutions which contain explicit provisions on the right to food as a separate and stand-alone right (regardless of whether or not these are justifiable).
- Legal guarantees refer to national laws. We have not examined which countries provide legal protection through the direct applicability of international human rights treaties.

**Table 7: Legal framework**

Country	Constitutional guarantee	Legislative guarantee	Grade for legal framework	Overall country rank for legal framework
Year	2006 and after	Latest		
Weight	33%	67%		
Brazil	High	Yes	A	1
Guatemala	Medium High	Yes	A	2
South Africa	High	In Progress	C	3
Malawi	Medium High	In Progress	C	4
Uganda	Medium High	In Progress	C	5
Tanzania	Medium Low	In Progress	D	6
India	Medium Low	In Progress	D	7
Kenya	High	No	D	8
Mozambique	Low	In Progress	D	9
Nepal	High	No	D	10
Haiti	High	No	D	11
DR Congo	Medium High	No	D	12
Ethiopia	Medium High	No	D	13
Nigeria	Medium High	No	D	14
Bangladesh	Medium High	No	D	15
Burundi	Medium Low	No	E	16
Ghana	Medium Low	No	E	17
Liberia	Medium Low	No	E	18
Sierra Leone	Medium Low	No	E	19
Cambodia	Medium low	No	E	20
Pakistan	Medium low	No	E	21
The Gambia	Low	No	E	22
Rwanda	Low	No	E	23
Senegal	Low	No	E	24
Lesotho	Very Low	No	E	25
Zambia	Very Low	No	E	26
China	Very Low	No	E	27
Viet Nam	Very Low	No	E	28

**Sub-indicator: Constitutional guarantees**

- The constitutional guarantees are being graded from high to low.
- High: Constitutions containing explicit provisions as a separate and stand-alone right.
- Medium-high: Constitutions which make an explicit mention of the right to food, but not as a separate and stand-alone right.
- Medium-low: Constitutions which protect the right to food implicitly, through broader provisions dealing with the right to an adequate standard of living, as well as through provisions on either social security or worker's rights, or both cumulatively, providing a high degree of protection of the right to food. The protection thus afforded may be in one or several sections of the constitution.
- Low: Constitutions which either protect the right to adequate standard of living, or social security and worker's rights. It also includes those which provide for direct applicability of the UN's International Covenant on Economic, Social and Cultural Rights.
- Very low: These constitutions protect only the right to social security or the right to minimum wage or other provisions, such as protection of the rights of the child, promotion of agriculture, food safety, etc.

To compute the scores for this indicator (in percentage) the formula used is "High" = 100, "Medium-high" = 67, "Medium-low" = 50, "Low" = 33, "Very low" = 17, "No data" = 0

**Sub-indicator: Legislative guarantees**

The classification of countries and their scores based on the existence of legal framework to the right to food is simple: either "Yes" = 100, "In Progress" = 33 or "No" = 0.

**Total scores for legal framework.**

To compile total scores for this indicator, constitutional guarantee is given a weight of 33.3 per cent and legislative guarantee 66.7 per cent. Data on the constitutional guarantee is not available for all countries and we believe that legislative guarantees provide a more credible framework for defining and monitoring entitlements. Second, international experience suggests that the effort of adopting a special law to protect the right to food security is greater than for including the right in a constitution.

### Data sources

- The methodology for the classification of countries is a modified version based on the original created by Vidar, 2006, 'State Recognition of the Right to Food, at the National Level', Research Paper No. 2006/61, UNU-WIDER.
- Grading of constitutional guarantees was derived from the survey and evaluation of 57 countries conducted by Vidar, 2006, 'State Recognition of the Right to Food, at the National Level', Research Paper No. 2006/61, UNU-WIDER, along with updated data provided (personal communication with Margret Vidar 14 September 2009). These data were vetted and updated by ActionAid country programmes where possible.
- In the case of Nepal, the evaluation is based on the provisions in the country's interim constitution.
- FAO's right to food link on the right to food in national constitutions is also used in many cases: <http://www.fao.org/docrep/W9990E/w9990e12.htm>
- The information on the status of legislative guarantees was largely derived from the FAO's 2006 report, The Right to Food in Practice: Implementation at the National Level (Rome: Food and Agriculture Organisation of the United Nations), along with updates available from ActionAid country programmes, newspaper articles, research papers and government websites available in the public domain.

### Indicator: Sustainable agriculture

Investment in agriculture has tremendous potential to reduce poverty, especially in rural areas. It can also be a significant driver for economic growth. Due to the proof of benefits of agricultural investment, the Scorecard measures the percentage of the government budget that is spent on agriculture, demonstrating the government's political commitment to reducing rural hunger.

### Data analysis

- In 2001, African Union member states committed themselves to a new programme to revitalise agriculture and reduce hunger – the Comprehensive Africa Agricultural Development Programme (CAADP). This included a commitment to spend 10 per cent of their national budgets on agriculture by. Although there are technical arguments to favour the ratio of agriculture spending to GDP as a more appropriate benchmark, we have chosen to stick with the budgetary yardstick

**Table 8: Sustainable agriculture**

Country	Agriculture budgets	Grade for agriculture budgets	Overall country Rank for agriculture budgets
Malawi	High	A	1
Brazil	High	A	2
Haiti	High	A	3
Burundi	High	A	4
Ethiopia	High	A	5
Viet Nam	High	A	6
Rwanda	High	A	7
Tanzania	High	A	8
Bangladesh	High	A	9
Sierra Leone	High	A	10
Nepal	High	A	11
China	High	A	12
Zambia	Medium	B	13
The Gambia	Medium	B	14
Mozambique	Medium	B	15
Uganda	Medium	B	16
Senegal	Medium	B	17
Kenya	Low	D	18
Nigeria	Low	D	19
India	Low	D	20
Lesotho	Low	D	21
South Africa	Low	D	22
Liberia	Low	D	23
DR Congo	Low	D	24
Ghana	Low	D	25
Guatemala	Low	D	26
Cambodia	Low	D	27
Pakistan	Low	D	28

because it is backed by a political commitment. We have extended this to evaluate countries in Asia and Latin America too, due to the proof of its success in combating hunger.

### Total scores for sustainable agriculture

The total score for the agriculture budget is on the basis of our putting a country in the groups of High, medium and low.

High: if the agriculture budget is above 7% - the country scores 100

Medium: if the agriculture budget is between 3.5%-7% - the country scores 66.7

Low: if the agriculture budget is below 3.5 – the country scores 33.3

### Data sources

- Agriculture budget: Where possible, budget figures have been based on official budget documents or declarations. In some cases, secondary sources on budget figures have been used. We have also received updated information from ActionAid colleagues for the 2010-11 budget cycle where available.

### Indicator: Social protection

Social protection, guaranteed in Article 22 of the Universal Declaration of Human Rights, is the right of every man, woman and child. Social protection measures are critical for ensuring that people can realise their right to food. Where good social protection policies and schemes have been set up with wide coverage, they have had a huge impact on hunger reduction. Brazil, Mexico and China are good examples of this. Social protection can take the form of a range of specific entitlements – for instance, pensions, child support, free school meals, employment guarantees – and goes beyond provisional safety-net solutions to creation and maintenance of structural supports.

### Data analysis

- While ideally we would have preferred to analyse budget contributions to social protection in developing countries, due to the lack of comparative cross-country data, and the cross-cutting nature of these investments across ministries and departments, it proved to be too difficult to aggregate the budgets and simultaneously ensure cross-country comparability. In future years we hope this

information gap will be filled with the availability of international datasets.

- Bearing in mind that only 20 per cent of the world's population has access to formal social protection we selected for this HungerFREE Scorecard the most universally relevant and easily measurable categories of social protection which would have a direct or indirect bearing on food security. However, it is important to note that we do not see these as stand-alone inputs or an exhaustive list; to combat the inter-generational cycle of malnutrition, a wider package of social assistance programmes may be needed.
- The six sub-indicators which comprise loose sub-categories of social protection are:
  - Young child Feeding and Nutrition;
  - Free School Meals;
  - Minimum Employment/Living Standards Guarantee;
  - Maternity Nutrition/Entitlements;
  - Subsidised Food Rations/Vouchers/Community Kitchens; and
  - Old Age Social Pensions.
- To evaluate performance in each of these sub-indicators, based on extensive research of resources in the public domain and cross-checks and inputs from ActionAid country programmes, we have used a non-proportionate four-point grading scale:

High = coverage of 75 per cent and more of the eligible population

Medium = coverage of 50 – 74 per cent

Low = coverage of 15 – 49 per cent

No/Negligible = coverage of 0 – 14 per cent

However, the classification of individual countries is often subjective due to an acute paucity of data on the scale, reach and efficacy of these social protection initiatives.

- Coverage rates for young children, school children, and elderly were calculated based on UN statistics on age-group numbers and primary enrolment data. Coverage rates for employment guarantees were estimated partly based on population figures for ages 15-59 multiplied by the average of the national poverty line rate and the portion of the population living on less than \$1.25 in Purchasing Power Parity terms.

**Table 9: Social protection**

Country	Young child feeding/nutrition	Free school meals	Minimum employment/living standards guarantee	Maternity nutrition/entitlements	Subsidised food rations/vouchers/community kitchens	Old age social pensions	Grade for social protection	Overall country Rank for social protection
<b>Weight</b>	<b>16.7%</b>	<b>16.7%</b>	<b>16.7%</b>	<b>16.7%</b>	<b>16.7%</b>	<b>16.7%</b>		
<b>Brazil</b>	Medium	High	High	Medium	High	High	B	<b>1</b>
<b>India</b>	Medium	High	Medium	Medium	Low	Medium	C	<b>2</b>
<b>South Africa</b>	High	Medium	Low	Low	Low	High	C	<b>3</b>
<b>Guatemala</b>	Low	High	No	Low	Low	Low	D	<b>4</b>
<b>China</b>	No	Medium	Low	Low	No	Medium	D	<b>5</b>
<b>Lesotho</b>	No	Medium	No	No	No	High	D	<b>6</b>
<b>Kenya</b>	Low	Medium	Low	No	No	low	D	<b>7</b>
<b>Senegal</b>	Low	Low	Low	Low	Low	No	D	<b>8</b>
<b>Bangladesh</b>	Low	No	Low	Low	Low	Low	D	<b>9</b>
<b>Mozambique</b>	No	Low	Low	Low	Low	No	E	<b>10</b>
<b>Viet Nam</b>	No	No	Low	Medium	No	Low	E	<b>11</b>
<b>Malawi</b>	Low	Low	Low	No	No	No	E	<b>12</b>
<b>Ethiopia</b>	No	No	Low	No	Low	No	E	<b>13</b>
<b>Ghana</b>	No	Low	No	No	Low	No	E	<b>14</b>
<b>Liberia</b>	No	Low	No	No	No	Low	E	<b>15</b>
<b>Nigeria</b>	No	Low	Low	No	No	No	E	<b>16</b>
<b>Pakistan</b>	No	Low	Low	No	No	No	E	<b>17</b>
<b>Burundi</b>	No	Low	No	No	No	No	E	<b>18</b>
<b>The Gambia</b>	No	No	Low	No	No	No	E	<b>19</b>
<b>Rwanda</b>	No	Low	No	No	No	No	E	<b>20</b>
<b>Sierra Leone</b>	No	Low	No	No	No	No	E	<b>21</b>
<b>Zambia</b>	No	No	No	No	Low	No	E	<b>22</b>
<b>Cambodia</b>	No	No	No	No	Low	No	E	<b>23</b>
<b>Nepal</b>	No	No	No	No	Low	No	E	<b>24</b>
<b>Haiti</b>	No	Low	No	No	No	No	E	<b>25</b>
<b>DR Congo</b>	No	No	No	No	No	No	E	<b>26</b>
<b>Tanzania</b>	No	No	No	No	No	No	E	<b>27</b>
<b>Uganda</b>	No	No	No	No	No	No	E	<b>28</b>



### Total scores for Social protection

- To compile total scores for this indicator as a percentage, each of the six sub-indicators have been given an equal weighting of 16.7 per cent
- To compute the scores for individual sub-indicators, we have assumed that

High = 90; Medium = 60; Low = 30; and No/Negligible = 0.

High has been pegged at 90 points as no country can realistically have entirely flawless social protection interventions.

### Data sources

- The data for most of the indicators has been researched through individual data sources available in the public domain and then cross-verified with staff on the ground in ActionAid country programmes. The data for school meals has been largely sourced from William Lambers, 2009, Ending World Hunger: School Lunches for Kids Around the World, World Food Programme; while for social pensions we relied on the HelpAge International (2009) database [helpage.org/Researchandpolicy/Socialprotection/PensionWatch/Coverage/main\\_content/PWTable.2.pdf](http://helpage.org/researchandpolicy/Socialprotection/PensionWatch/Coverage/main_content/PWTable.2.pdf)
- Data on age-group populations was obtained from the UN Population division: <http://esa.un.org/unpp/index.asp?panel=2>
- Data on poverty rates were obtained from the UN MDG statistical database: <http://unstats.un.org/unsd/mdg/Data.aspx>

### Indicator: Gender equality

Women and girls make up a disproportionate share of the world's hungry and take the most responsibility for feeding their families. The gender dimension of hunger therefore cannot be ignored, and the HungerFREE Scorecard has set out to start comparing how countries are delivering on guaranteeing women's rights and eliminating gender discrimination. Currently, despite women constituting the majority of farmers in most countries, nearly all agricultural policies ignore the needs of women. Few governments have agriculture budget lines that support women farmers specifically, and women are largely invisible in both government and donor agriculture policies designed to improve productivity.

**Table 10: Gender equality**

Country	SIGI score	SIGI rank	Overall grade for gender equality	Overall country rank for gender equality
Year	2009			
Brazil	98.1	28	A	1
Cambodia	97.8	27	A	2
Viet Nam	97.0	26	A	3
Guatemala	96.8	25	A	4
Haiti	96.0	24	A	5
Lesotho	91.3	22	A	6
South Africa	91.3	22	A	7
Burundi	89.3	21	A	8
Senegal	89.0	20	A	9
Tanzania	88.8	19	A	10
Ghana	88.7	18	A	11
Kenya	86.3	17	A	12
Malawi	85.7	16	A	13
Nepal	83.3	15	A	14
Rwanda	83.1	14	A	15
The Gambia	82.2	13	A	16
Uganda	81.3	12	A	17
Mozambique	80.0	11	B	18
DR Congo	79.6	10	B	19
China	78.2	9	B	20
Zambia	78.1	8	B	21
Nigeria	78.0	7	B	22
Liberia	77.3	6	B	23
Ethiopia	76.7	5	B	24
Bangladesh	75.5	4	B	25
Pakistan	71.7	3	B	26
India	68.2	2	B	27
Sierra Leone	65.8	1	B	28

The 2011 Scorecard gender equality indicator is based on the scores from the recently created Social Institutions and Gender Index (SIGI) from the UNDP. In contrast to other indexes of female development outcomes, the SIGI index focuses on institutional root causes of these outcomes and provides a general estimation of overall gender equality in a country. The index includes 12 indicators in five broad categories (family code; physical integrity; son preference; civil liberties; and ownership rights), which were scored based upon individual country reviews.

#### Data analysis

- One part of the difficulty when measuring and addressing gender equality is the lack of detailed data on gender inequities in the areas of food and agriculture, particularly in all the countries that are featured in this scorecard.

#### Total scores for gender equality

Therefore the total scores were based on the following formula:  
= 100 – [100 \* SIGI score]

#### Data sources

- SIGI data was obtained from <http://genderindex.org/ranking>

### Indicator: Climate adaptation plans

With emission reductions failing to decrease and no deal in sight for emission reductions, adaptation to changing climates is becoming an increasingly important and urgent reality for many developing countries. Adaptation plans help developing countries cope with the effects of climate change on a sectorial basis. However, far too few of these have detailed plans and programmes for the agricultural sector. Even more significantly, far too few have detailed plans for dealing with vulnerable groups within the plans, and thus for dealing with the impact of climate change on smallholder farmers.

#### Data analysis

The climate adaptation plans are measured through three sub-indicators that intend to measure: the recognition of the importance of climate vulnerable parts of countries, as well as the people affected; the importance of agriculture in climate adaptation plans; as well as the implementation of the adaptation plans.

#### Sub-indicator: Recognition of vulnerable parts of the countries and vulnerable groups

- Developing countries receive a simple yes (1) or no (0) score on whether their national plans identify the parts of the country most vulnerable to climate change in terms of agriculture/food production.
- Additionally, developing countries receive a simple yes (1) or no (0) score on whether their national plans identify groups of people who are particularly vulnerable to climate change in terms of agriculture/food production.
- In order to classify the country in terms of their Adaptation plans and whether they explicitly recognise vulnerable parts of countries and vulnerable groups – the scoring is as follows:
- (Score for recognition of Geographical vulnerability + Score for recognition of population vulnerability)\*50

#### Sub-indicator: Inclusion of agriculture/food security in the top five projects in adaptation plans

- The importance of food security and agriculture in climate adaptation plans should be recognised and included by governments in all adaptation processes, in order to address hunger and adapt to the impacts that climate change is having and will continue to have on agriculture and the country's food security.
- Developing countries are assessed on the number of food or agricultural-related projects in the top five priorities in their National Adaptation Plans of Action (NAPA) or non-NAPA plans with scores ranging from 1 to 5.
- The final score for this sub-indicator is calculated by multiplying the number of agriculture projects among the top 5 programmes in their overall adaptation plan by 20.

#### Sub-indicator: Which project is being implemented?

- The last sub-indicator measures the country's implementation of their NAPA, non-NAPA plan and whether the project being implemented has an agricultural component – as already stated, due to the vulnerability of agriculture and the food security of the country due to climate change.
- Therefore the scoring is as follows, the developing countries receive a simple yes (1) or no (0) score on whether the NAPA or non-NAPA project being implemented has an agricultural or food component.
- The final score is calculated by multiplying the result (1 if yes, 0 if no) by 100.

**Table 11: Climate change adaptation**

Country	Recognition of vulnerability score	Top 5 score	Implementation score	Overall grade for climate adaptation plans	Overall country rank for climate adaptation plans
Weight	25	25	50		
Malawi	100	60	100	A	1
Rwanda	100	60	100	A	2
Brazil	100	60	100	A	3
Lesotho	100	40	100	A	4
Nepal	100	40	100	A	5
Liberia	100	20	100	B	6
Ghana	50	50	100	B	7
Ethiopia	50	40	100	B	8
Uganda	50	40	100	B	9
Tanzania	50	20	100	B	10
Zambia	50	20	100	B	11
Nigeria	50	0	100	B	12
Bangladesh	50	0	100	B	13
South Africa	0	20	100	C	14
China	0	20	100	C	15
Cambodia	50	80	0	D	16
DR Congo	100	20	0	D	17
India	100	20	0	D	18
Haiti	100	20	0	D	19
Kenya	100	0	0	D	20
Burundi	50	40	0	D	21
The Gambia	50	20	0	E	22
Mozambique	50	20	0	E	23
Senegal	50	20	0	E	24
Sierra Leone	50	20	0	E	25
Guatemala	50	0	0	E	26
Pakistan	0	20	0	E	27
Viet Nam	0	0	0	E	28

**Data assumptions and weaknesses**

- We are aware that different adaptation plans have different timelines and methods of compilation and that this leads to weaknesses in our overall analysis. However, adaptation plans are the most comparable cross-country measure of how much a country is prepared for climatic change.
- Different countries produced their NAPAs and adaptation plans at different times.
- One problem is that some countries, such as Brazil, have both a national climate plan and a specific agricultural climate plan, for instance. While Bangladesh has both a NAPA and a separate adaptation plan.
- NAPAs include a list of priority projects rather than a national programme or policy.
- It is not immediately clear what the percentage target for agricultural adaptation should be nor how much should be targeted specifically at smallholders versus other vulnerable groups.

**Total score for climate adaptation plans**

The weights used in the final score for climate adaptation plans are 25 per cent for vulnerability recognition, 25 per cent for number of projects in top 5 and 50 per cent for implementation. So, the final formula for measuring the score is:

Score= 25 per cent \* vulnerability recognition+25 per cent \* Ag projects in top 5+50 per cent \* Implementation

**Data sources**

- Individual NAPAs: The complete list can be found here: [http://unfccc.int/cooperation\\_support/least\\_developed\\_countries\\_portal/submitted\\_napas/items/4585.php](http://unfccc.int/cooperation_support/least_developed_countries_portal/submitted_napas/items/4585.php)
- Status of NAPA implementation: [http://unfccc.int/cooperation\\_support/least\\_developed\\_countries\\_portal/ldcf\\_napa\\_projects/items/5632.php](http://unfccc.int/cooperation_support/least_developed_countries_portal/ldcf_napa_projects/items/5632.php)
- Non-NAPAs – taken from non-annex 1 national communications for non-LDCs: Ghana; Kenya; Nigeria; South Africa; China; India; Pakistan; Viet Nam; Brazil and Guatemala - [http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2979.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php)

## Endnotes

1. Time Magazine, December Edition, 2010, Impending Crisis: Earth to Run Out of Food by 2050? <http://newsfeed.time.com/2010/12/07/impending-crisis-earth-to-run-out-of-food-by-2050/#ixzz1ZFR2uUep>
2. Of the ten most vulnerable countries, they have the following populations: India (1224 614), DRC (65 966), Ethiopia (82 950), Bangladesh (148 692) South Africa (50 133), Haiti (9 993), Rwanda (10 624), Burundi (8 383), Zambia (13 089), Sierra Leone (5 868). This adds up to a population of 1.6 billion in total: this adds up to approximately one quarter per of the world's population.
3. World Food Programme, 2010, Democratic Republic of Congo: Overview, <http://www.wfp.org/countries/Congo--Democratic-Republic-Of/Overview>
4. World Food Programme, 2010, Pakistan: Overview, <http://www.wfp.org/countries/Pakistan/Overview>
5. Loc Cit.
6. Gronewold, N., 18 August 2010, Is the Flooding in Pakistan a Climate Change Disaster? <http://www.scientificamerican.com/article.cfm?id=is-the-flooding-in-pakistan>
7. Clark, H., 29 September 2008, Vietnam heeding climate change warnings, <http://ipsnews.net/news.asp?idnews=44046>
8. Director of the Southern Institute of Agricultural Science and Technology, Bui Chi Buu, interview with Vietnam Economic Times, 3 February 2011, <http://www.vneconomynews.com/2011/02/mekong-delta-agriculture-needs.html>
9. Lobell, D. et al. 5 May 2011, Climate trends and global crop production since 1980, <http://www.sciencemag.org/content/early/2011/05/04/science.1204531.abstract>
10. Birol F. and Stern, N., 8 March 2011, Urgent steps to stop the climate door closing, in the Financial Times, <http://www.ft.com/cms/s/0/7dbcb112-49bd-11e0-acf0-00144feab49a.html>
11. Lobell, D., et al, 1 February 2008, Prioritizing Climate Change Adaptation Needs for Food Security in 2030, <http://www.sciencemag.org/content/319/5863/607>
12. CCAFS, 2011, Mapping hotspots of climate change and food insecurity in the global tropics, CCAFS Report No.5, Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
13. CCAFS aggregated populations in the tropics with high exposure, high sensitivity and low coping capacities (HHL) for five (out of nine) climate change exposure thresholds as projected by an ensemble of 4 different global climate models and the A2 (high) greenhouse gas emissions scenario to 2050, explored in their 2011 paper, Mapping hotspots of climate change and food insecurity in the global tropics. These five thresholds are: 1) More than 5% decrease in the length of growing period, 2) the length of growing period flips from more than 120 days to less than 120 days, 3) reliable crop growing days flip from more than 90 days to less than 90 days, 4) maximum temperature flips from <30°C to > 30°C, 5) maximum temperature during the growing season flips from <30°C to > 30°C. CCAFS overlaid revised threshold criteria to avoid double counting, and subsequently estimate that 526 million people would fall into the HHL category, and would therefore be highly vulnerable to food insecurity and hunger under these scenarios by 2050. CCAFS, 2011, Mapping hotspots of climate change and food insecurity in the global tropics, CCAFS Report no.5, Copenhagen: CGIAR Research Program on Climate change, agriculture and food security (CCAFS).
14. Loc Cit.
15. World Bank, 2009, World Development Report 2010, Development and climate change, Washington: World Bank.
16. World Bank, 2007, World Development Report 2008, Washington: World Bank.
17. CCAFS, 2011, Mapping hotspots of climate change and food insecurity in the global tropics, CCAFS Report no.5, Copenhagen: CGIAR Research Program on Climate change, agriculture and food security (CCAFS)
18. FAO, January-April 2011, Price Monitoring and Analysis Country Brief – Bangladesh, <http://www.fao.org/docrep/014/am563e/am563e00.pdf>
19. FAO, September 2011, Crisis in the Horn of Africa, <http://www.fao.org/crisis/horn-africa/home/en/>
20. OCHA, 2011, Horn of Africa crisis, Information sharing for better humanitarian action, Kuwait, 12 September 2011, New York: OCHA
21. Loc Cit.
22. FAO, 22 September 2011, Crisis in the Horn of Africa, see: <http://www.fao.org/crisis/horn-africa/home/en/>
23. UK Government, 2011, Foresight The future of food and farming, London: Government Office for Science,
24. FAO, 2011, Safeguarding food security in volatile global markets, Rome: FAO.
25. World Bank, 2009, World Development Report 2010, Development and climate change, op cit.
26. UK Government, 2011, op cit.
27. Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), 2009, Agriculture at a crossroads: Global report, Washington: International.
28. High Level Panel of Experts on Food Security and Nutrition, 2011, Price volatility and food security, Rome: HLPE.
29. UK Government, 2011, op cit.

30. Convention on Biological Diversity (CBD), 2010, Global Biodiversity Outlook 3, Montreal: CBD.
31. FAO, 7 September 2011, Global soil partnership for food security launched at FAO, Rome: FAO.
32. Guo, J. H. et al., 19 February 2010, Significant acidification in major Chinese croplands, *Science* 2010, 327,1008-10, <http://www.sciencemag.org/content/327/5968/1008>
33. UNEP, 2009, The environmental food crisis, Nairobi: UNEP.
34. Brown, L., 10 January 2011, The great food crisis of 2011, *Foreign Policy*.
35. World Bank, 2009, World Development Report 2010, Development and climate change, op cit.
36. Blaschke, P. M., et al. 1992, *Agriculture Ecologist Environment*, No. 41, Issue 153, [http://www2.geog.ucl.ac.uk/~mdisney/teaching/1006/papers/daily\\_restoration.pdf](http://www2.geog.ucl.ac.uk/~mdisney/teaching/1006/papers/daily_restoration.pdf)
37. World Food Programme, 2010, Rwanda: Overview, <http://www.wfp.org/countries/Rwanda/Overview>
38. Loc Cit.
39. Rwanda Pledges Nationwide Forest Landscape Restoration, 4 February, 2011, *Environmental News Service*, <http://www.ens-newswire.com/ens/feb2011/2011-02-04-01.html>
40. Gillespie, S. and Kadiyala, S., February 2011, Exploring the Agriculture-Nutrition Disconnect in India, 2020 Conference Brief: Leveraging Agriculture for Improving Nutrition and Health, <http://www.ifpri.org/sites/default/files/publications/2020anhconfbr20.pdf>
41. Desertification of India, 2009, [http://www.caritas.org/activities/climate\\_change/desertification\\_in\\_india.html](http://www.caritas.org/activities/climate_change/desertification_in_india.html)
42. Loc Cit.
43. PEW Global Climate Change Center, June 2008, Summary: India's National Action Plan on Climate Change, <http://www.pewclimate.org/international/country-policies/india-climate-plan-summary/06-2008>
44. FAO, 2011, Rising vulnerability in the global food system, Rome: FAO
45. Manuel, T. and Stern, N., 15 November 2010, No time to lose in finding funding for the world's poor to fight climate change, <http://www.africabiofuel.com/News.aspx>
46. HLPE, 2011, Land tenure and international investments in agriculture, Rome: HLPE.
47. World Bank, 2011, Rising global interest in farmland, Washington: World Bank.
48. ActionAid, 2011, Fuelling evictions, Community cost of EU biofuels boom, Brussels: ActionAid.
49. Loc Cit.
50. Loc Cit.
51. HLPE, 2011, Land tenure and international investments in agriculture, Rome: HLPE.
52. See: Grain, 2008, *Seized: The 2008 land grab for food and financial security*, Madrid: Grain; The Oakland Institute, 2009, *The great land grab*, Oakland: Oakland Institute; The Oakland Institute, 2011, *Understanding land investment deals in Africa*; Country report – Ethiopia, Oakland: Oakland Institute; IIED/FAO/IFAD, 2009, *Land grab or development opportunity? Agricultural investment and international land deals in Africa*, London: IIED/FAO/IFAD.
53. United Nations, 3 May 2011, *World population prospects: the 2010 revision*, New York: United Nations.
54. UN press release, 3 May 2011, World population to reach 10 billion by 2100 if fertility in all countries converges to replacement level, New York: United Nations.
55. OECD/FAO, 2011, *Agricultural outlook 2011-2020*, Paris/Rome: OECD-FAO.
56. United Nations, 3 May 2011, *World population prospects: the 2010 revision*, Op Cit.
57. Loc Cit.
58. Loc Cit.
59. OECD/FAO, 2011, *Agricultural outlook 2011-2020*, Paris/Rome: OECD/FAO.
60. *Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD)*, 2009, *Agriculture at a crossroads: Global report*, Op Cit.
61. Loc Cit.
62. FAO, 4 February 2009, Farming must change to feed the world, FAO press release, <http://www.fao.org/news/story/en/item/9962/icode/>
63. FAO, 8 September 2011, *Global food price monitor*, Rome: FAO.
64. World Bank, August 2011, *Food price watch*, Washington: World Bank.
65. FAO, 8 September 2011, op cit.
66. FAO, 11 June 2011, *Food outlook*, Rome: FAO.
67. World Bank, February 2011, *Food price watch*, Washington: World Bank.
68. World Bank, February 2011, *Food price watch*, op cit.
69. World Bank, February 2011, *Food price watch*, op cit.
70. Asian Development Bank (ADB), 2011, *Global food price inflation and developing Asia*, Manila: ADB.
71. Farm Foundation, 2011, *What's driving food prices in 2011?* Illinois: Farm Foundation.
72. OECD/FAO, 2011, *Agricultural outlook 2011-2020*, Paris/Rome: OECD-FAO.
73. Loc Cit.

74. Loc Cit.
75. FAO, November 2010, Food outlook, Rome: FAO.
76. OECD/FAO, 2011, Agricultural outlook 2011-2020, op cit.
77. FAO, June 2011, Food outlook, Rome: FAO.
78. ActionAid surveyed food rights colleagues on the impact of rising food prices in 20 countries where we work from Afghanistan to Zimbabwe in January/February, May, and August 2011. Further survey details available on request.
79. Save the Children, 2009, Hungry for change, an eight-step, costed plan of action to tackle global child hunger, London: Save the Children.
80. FAO, 14 January 2011, Global food price monitor, Rome: FAO.
81. FAO, 8 September 2011, Global food price monitor, op cit.
82. De Schutter, O. and Vanlogueren, G., August 2011, 'The New Green Revolution: How twenty-first-century science can feed the world', Solutions Journal, Vol. 2, Issue 4.
83. ActionAid, 2011, Investing in women smallholder farmers, Johannesburg: ActionAid.
84. ActionAid, 2010, Fertile ground, Johannesburg: ActionAid.
85. FAO, 2011, The state of food and agriculture, Women in agriculture: Closing the gender gap for development, Rome: FAO.
86. Brazil to invest \$10 billion in family farms, 12 July 2011, Associated Press. <http://www.vcstar.com/news/2011/jul/12/brazil-to-invest-10-billion-in-family-farms/>
87. Filho, A. C. C., November 2009, Social Protection in Brazil: Recent Achievements, Ministry of Social Development and Fight Against Hunger: Brazil, <http://www.un.org/esa/socdev/documents/gasecond/2009/Filho.pdf>, p. 9.
88. Republic of The Gambia, October 2010, Pre-Harvest Assessment of the 2010/2011 Cropping Season, <http://www.erails.net/images/gambia///file/Pre%20Harvest%20Assessment%202010%20Final.pdf>
89. Rwanda Pledges Nationwide Forest Landscape Restoration. Environmental News Service. Feb. 4, 2011. <http://www.ens-newswire.com/ens/feb2011/2011-02-04-01.html>
90. Adaption Learning Mechanism, 2010, Malawi, <http://www.adaptationlearning.net/malawi/profile>
91. World Food Programme, 2010, Ethiopia: Overview, op cit.
92. IPCC, 2008, Intergovernmental Panel on Climate Change Fourth Assessment Report, Geneva: IPCC.
93. FAO, 2011, The state of food and agriculture, Women in agriculture: Closing the gender gap for development, Rome: FAO.
94. See: Pretty, J. et al., 2006, Resource-conserving agriculture increases yields in developing countries, Environmental Science and Technology (Policy Analysis); UNCTAD/UNEP, 2008, Organic agriculture and food security in Africa, New York: United Nations; FAO, 2009, Low greenhouse gas agriculture, mitigation and adaption potential of sustainable farming systems, Rome: FAO.
95. De Schutter O. 17 December 2010, Report submitted by the Special Rapporteur on the right to food, Olivier De Schutter, Human Rights Council 16th Session, UN General Assembly, A/HRC/16/49.
96. See: UNCTAD/UNEP, 2008, Organic agriculture and food security in Africa, New York: United Nations
97. See: De Schutter O., 17 December 2010, Report submitted by the Special Rapporteur on the right to food, op cit.
98. Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), 2009, Agriculture at a crossroads: Global report, op cit.
99. UNEP, 2009, The environmental food crisis, op cit.
100. Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), 2009, Agriculture at a crossroads: Global report, op cit.
101. FAO, January-April 2011, Price Monitoring and Analysis Country Brief – Bangladesh, <http://www.fao.org/docrep/014/am563e/am563e00.pdf>
102. FAO, 2010, The State of Food Insecurity in the World: Addressing food security in a protracted crisis, <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>, p. 10.
103. Rahman, M., 18 June 2011, Dialogue on State of the Bangladesh Economy – Analysis of the National Budget FY 2011-2012, Centre for Policy Dialogue, [http://www.cpd.org.bd/downloads/Budget per cent20FY12.pdf](http://www.cpd.org.bd/downloads/Budget%20per%20cent%20FY12.pdf).
104. IRIN, 6 September 2010, Bangladesh: Population pressure, climate change drive search for new rice varieties, <http://www.irinnews.org/Report.aspx?ReportID=90397>
105. USDA Foreign Agricultural Service, April 2011, op cit.
106. IRIN, 22 July 2010, Unemployment, food prices spur growing hunger, <http://www.irinnews.org/report.aspx?ReportID=89920>
107. Mondal, M. H. June 2010, Crop Agriculture of Bangladesh: Challenges and Opportunities, [www.banglajol.info/bd/index.php/BJAR/article/download/5886/4620](http://www.banglajol.info/bd/index.php/BJAR/article/download/5886/4620)
108. World Bank, 2010, Social protection Bangladesh: Overview, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,,contentMDK:22181729~pagePK:146736~piPK:146830~theSitePK:223547,00.html>
109. Loc Cit.
110. Loc Cit.
111. UNICEF Media Centre, 18 January 2011, New School Feeding Programme to Boost Learning for urban working Children, [http://www.unicef.org/bangladesh/media\\_6707.htm](http://www.unicef.org/bangladesh/media_6707.htm)
112. Loc Cit.
113. These include nationwide programmes such as school meals and grants to poor families, as well as local initiatives, such as the food acquirement programme and 'people's restaurants' (which provide cheap subsidised food)

114. De Schutter, O., 2010, Report of the Special Rapporteur on the right to food: Mission to Brazil, [http://www.srfood.org/images/stories/pdf/officialreports/20100305\\_a-hrc-13-33-add6\\_country-mission-brazil\\_en.pdf](http://www.srfood.org/images/stories/pdf/officialreports/20100305_a-hrc-13-33-add6_country-mission-brazil_en.pdf), pp. 12-13.
115. *Ibid.* p. 8.
116. <http://www.mds.gov.br/segurancaalimentar/sisan>
117. Brazil to invest \$10 billion in family farms, 12 July 2011, Associated Press. <http://www.vcstar.com/news/2011/jul/12/brazil-to-invest-10-billion-in-family-farms/>
118. De Schutter, O., 2010, Report of the Special Rapporteur on the right to food: Mission to Brazil, [http://www.srfood.org/images/stories/pdf/officialreports/20100305\\_a-hrc-13-33-add6\\_country-mission-brazil\\_en.pdf](http://www.srfood.org/images/stories/pdf/officialreports/20100305_a-hrc-13-33-add6_country-mission-brazil_en.pdf), p. 15.
119. Filho, A. C. C., November 2009, Social Protection in Brazil: Recent Achievements, Ministry of Social Development and Fight Against Hunger: Brazil, <http://www.un.org/esa/socdev/documents/gasecond/2009/Filho.pdf>, p. 9.
120. Brazil at Risk of Agrarian Counter-Reform, 28 April 2011, <http://www.globalissues.org/news/2011/04/28/9441>
121. De Schutter, O., 2010, *op cit.* p. 15.
122. Farming First, 17 October 2009, Climate Change Threatens Brazilian Agriculture, <http://www.farmingfirst.org/2009/10/brazils-rich-agriculture-threatened-by-climate-change/>
123. Government Launches Climate Change Plan, 16 December 2008, [http://www.brazil.org.uk/press/pressreleases\\_files/20081216.html](http://www.brazil.org.uk/press/pressreleases_files/20081216.html)
124. *Loc Cit.*
125. Porter, K., 29 June 2009, Amazon Rainforest is Worth the Worldwide Crusade, The edge of Ecology, <http://www.thecuttingedge.com/index.php?article=11430>
126. World Food Programme, 2010, Burundi: Overview, <http://www.wfp.org/countries/Burundi/Overview>
127. *Loc Cit.*
128. FAO, 2010, Burundi, <http://www.fao.org/countries/55528/fr/bdi/>
129. *Loc Cit.*
130. The World Bank, February 2011, Food Price Watch, [http://www.worldbank.org/foodcrisis/food\\_price\\_watch\\_report\\_feb2011.html](http://www.worldbank.org/foodcrisis/food_price_watch_report_feb2011.html)
131. *Loc Cit.*
132. Republique Du Burundi, January 2007, National Adaption Plan of Action to climate change (NAPA), [http://www.preventionweb.net/files/8503\\_bdi01e.pdf](http://www.preventionweb.net/files/8503_bdi01e.pdf)
133. Adaption learning Mechanism, 2009, Country Brief – Burundi, <http://www.adaptationlearning.net/country-profiles/bi>
134. Republique Du Burundi, January 2007, *op cit.*
135. CAADP and COMESA, 31 August 2009, Burundi signs CAADP Compact, [http://about.comesa.int/attachments/080\\_COMESA\\_CAADP\\_Newsletter\\_issue\\_29.pdf](http://about.comesa.int/attachments/080_COMESA_CAADP_Newsletter_issue_29.pdf)
136. Kisamare, J. P., 21 October 2010, The 2nd Deputy Chairman of the National Assembly of Burundi announces a budget of 10 percent for the agriculture sector for the next two years, [http://ifdc-catalist.org/pdfs/Report\\_Burundi\\_Parliamentary\\_debate.pdf](http://ifdc-catalist.org/pdfs/Report_Burundi_Parliamentary_debate.pdf)
137. World Food Programme, 20 May 2011, Burundi: Annual Evaluation Report 2010, <http://www.wfp.org/countries/Burundi/Resources/School-Meals>
138. World Food Programme, 2010, Cambodia, <http://www.wfp.org/countries/Cambodia/Overview>
139. *Loc Cit.*
140. FAO, 2010, Nutrition Country profiles: Cambodia, [http://www.fao.org/ag/agn/nutrition/khm\\_en.stm](http://www.fao.org/ag/agn/nutrition/khm_en.stm)
141. World Food Programme, 2001, Cambodia, *op cit.*
142. The World Bank: Cambodia Office, March 2011, Global Food Price Volatility and Implications for Cambodia, [http://siteresources.worldbank.org/CAMBODIAEXTN/Resources/KH\\_Food\\_Prices\\_March2011.pdf](http://siteresources.worldbank.org/CAMBODIAEXTN/Resources/KH_Food_Prices_March2011.pdf)
143. Farming First, 19 April 2010, Improved Rice Cultivation in Cambodia, <http://www.farmingfirst.org/2010/04/improved-rice-cultivation-in-cambodia/>
144. Kingdom of Cambodia, Ministry of Environment, October 2006, National Adaption Plan of Action to climate change (NAPA), <http://unfccc.int/resource/docs/napa/khm01.pdf>
145. Win, L. T., 08 July 2010, Cambodia faces land rights crisis, <http://m.trust.org/alertnet/news/cambodia-faces-land-rights-crisis-campaigners-/>
146. *Loc Cit.*
147. Asia's women in agriculture, environment and rural production: Cambodia. <http://www.fao.org/sd/WPdirect/WPre0106.htm>
148. FAO, 2010, Country Brief: China, <http://www.fao.org/countries/55528/en/chn/>
149. FAO, 2003, The state of Food Insecurity in the World, <http://www.fao.org/docrep/006/j0083e/j0083e.HTM>; this is based on figures from the FAO's State of Food Insecurity in the World (SOFI) report 2011 and 2008, respectively.
150. United Nations, June 2010, Millennium Development Goal Indicators, <http://mdgs.un.org/unsd/mdg/Data.aspx>
151. Green, C., King, R., and Miller-Dawkins, M., 2010, The Global Economic Crisis and Developing Countries: Impact and Responses, Oxfam, [http://www.oxfamblogs.org/fp2p/wp-content/uploads/GEC\\_research\\_report\\_consultation\\_draft\\_27Jan2010.pdf](http://www.oxfamblogs.org/fp2p/wp-content/uploads/GEC_research_report_consultation_draft_27Jan2010.pdf)
152. Bouché, N., et al. The Macroeconomics of poverty reduction: The case of China, The United Nations Development Programme, <http://www.ipc-undp.org/publications/reports/China.pdf>, p. 22.
153. Ghosh, J., January 2010, Poverty reduction in China and India: Policy Implications of recent trends, DEAS Working Paper No. 92, [http://www.un.org/esa/desa/papers/2010/wp92\\_2010.pdf](http://www.un.org/esa/desa/papers/2010/wp92_2010.pdf)

154. The World Bank, 2011, China Overview, <http://www.worldbank.org/en/country/china/overview>
155. The World Bank, 2011, China Overview, <http://www.worldbank.org/en/country/china/overview>
156. International Monetary Fund, March 2011, Rising prices on the menu, in Finance and Development, Vol. 48, No. 1, <http://www.imf.org/external/pubs/ft/fandd/2011/03/helbling.htm>
157. The World Bank, February 2011, Food Price Watch, [http://www.worldbank.org/foodcrisis/food\\_price\\_watch\\_report\\_feb2011.html](http://www.worldbank.org/foodcrisis/food_price_watch_report_feb2011.html)
158. China floods bring steep food price rises, 19 June 2011, <http://www.guardian.co.uk/world/2011/jun/19/china-floods-food-price-rises>
159. China drought fuels food price increases, 31 May 2011, [http://www.straitstimes.com/BreakingNews/Asia/Story/STIStory\\_674464.html](http://www.straitstimes.com/BreakingNews/Asia/Story/STIStory_674464.html)
160. Greenpeace, 2008, Food For Thought: Climate Change and Food Security in China, <http://www.greenpeace.org/eastasia/news/climate-change-food-security>
161. GM crop use may endanger China's food security, 17 March 2010, <http://opinion.globaltimes.cn/commentary/2010-03/513852.html>
162. FAO, 2010, The State of Food Insecurity in the World: Addressing food security in a protracted crisis, <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>, p. 11.
163. FAO, 2008, The State of Food Insecurity in the World, <http://www.fao.org/docrep/011/i0291e00.htm>
164. UNHCR, 2011, 2011 UNHCR country operations profile – Democratic Republic of the Congo, <http://www.unhcr.org/cgi-bin/texis/vtx/page?page=49e45c366>
165. United Nations, 3 March 2011, DR Congo: UN report details suffering of rape victims, recommends reparations, <http://www.un.org/apps/news/story.asp?NewsID=37672&Cr=democratic&Cr1=congo>
166. Loc Cit.
167. UN report points to 'alarming' levels of poverty in DRC, 17 December 2008, <http://mg.co.za/article/2008-12-17-un-report-points-to-alarming-levels-of-poverty-in-drc>
168. FAO, 2010, The State of Food Insecurity in the World: Addressing food security in a protracted crisis, <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>,
169. Loc Cit.
170. World Food Programme, 2010, Democratic Republic of Congo: Overview, op cit.
171. Climate Change in Congo (DRC), March 2010, <http://uk.oneworld.net/guides/congo-DRC/climate-change>
172. World Wildlife Fund, 2009, Climate change in the green heart of Africa, [http://wwf.panda.org/what\\_we\\_do/where\\_we\\_work/congo\\_basin\\_forests/problems/climate\\_change/](http://wwf.panda.org/what_we_do/where_we_work/congo_basin_forests/problems/climate_change/)
173. World Food Programme, 2010, Ethiopia: Overview, op cit.
174. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 1.
175. Loc Cit.
176. Deressa, T. T., Hassan, R. M., and Ringler, C., 2010, Measuring Ethiopian Farmer's Vulnerability to Climate Change Across Regional States, IFPRI Research Brief 15-5, [http://www.ifpri.org/sites/default/files/pubs/pubs/ib/rb15/rb15\\_05.pdf](http://www.ifpri.org/sites/default/files/pubs/pubs/ib/rb15/rb15_05.pdf), p. 1.
177. Oxfam, 22 April 2010, Climate change increasing poverty and vulnerability in Ethiopia, <http://www.oxfam.org/pressroom/pressrelease/2010-04-22/climate-change-increasing-poverty-and-vulnerability-ethiopia>
178. IFAD Rural Poverty Portal, 2010, Rural Poverty in Ethiopia, <http://www.ruralpovertyportal.org/web/guest/country/home/tags/ethiopia>
179. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 1.
180. Rural Poverty Portal, 2010, Rural Poverty in Ethiopia, op cit.
181. Social Institutions and Gender Index, 2010, Gender Equality and Social Institutions in Ethiopia, <http://genderindex.org/country/ethiopia>
182. Loc Cit.
183. Loc Cit.
184. Cohen, M. J., June 2011, Agricultural Extension Services and Gender Equality: An Institutional Analysis of Four districts in Ethiopia, IFPRI Discussion Paper 01094, <http://www.ifpri.org/sites/default/files/publications/ifpridp01094.pdf>, p. 1.
185. Loc Cit.
186. World Food Programme, 2010, Ethiopia: Overview, op cit.
187. Spielman, D. J., Kelemwork, D. and Alemu, D., March 2011, Seed, Fertilizer, and Agricultural Extension in Ethiopia, ESSP II Working Paper 020, <http://www.ifpri.org/sites/default/files/publications/esspwp20.pdf>, p. 2.
188. FAO, 2010, Country Brief: Gambia, <http://www.fao.org/countries/55528/en/gmb/>
189. High Level Conference on Water for Agriculture and Energy in Africa: The Challenges of Climate Change. The Gambia: National Investment Brief, 2008. [www.sirtewaterandenergy.org/docs/reports/Gambia-Draft2.pdf](http://www.sirtewaterandenergy.org/docs/reports/Gambia-Draft2.pdf)
190. Loc Cit.
191. FAO, 2010, Country Brief: Gambia, <http://www.fao.org/countries/55528/en/gmb/>
192. World Food Programme 2010, The Gambia, op cit.
193. World Food Programme 2010, The Gambia, op cit.



194. UNESCO, 2010, The Gambia: How to reduce bush fires: Creation of a green belt around the forest perimeter, op cit.
195. FAO, 2011, Ghana: Country Brief, <http://www.fao.org/countries/55528/en/gha/>
196. Republic of Ghana, 18 November 2010, Budget Statement and Economic Policy of the Government of Ghana for the 2011 Financial Year, <http://www.ghana.gov.gh/documents/2011budget.pdf>, p. 48.
197. Agricultural growth requires supportive policies – Minster, 17 April 2011, <http://www.ghanaweb.com/Ghana-HomePage/NewsArchive/artikel.php?ID=207100>
198. Ghana embarks on vigorous rice and maize production: <http://www.netnewspublisher.com/ghana-embarks-on-vigorous-maize-and-rice-production/>.
199. Ministry of Food and Agriculture – Republic of Ghana, 27 April 2011, Address delivered by the Honourable Minister of Food and Agriculture, Honourable Kwesi Ahwoi at the 2nd Ghana Policy Fair at the Accra International Conference Center on Friday 29th April 2011, <http://mofa.gov.gh/site/?p=397>
200. Nyari, B., Biofuel land grabbing in Northern Ghana, Biofuel Watch, [http://www.biofuelwatch.org.uk/files/biofuels\\_ghana.pdf](http://www.biofuelwatch.org.uk/files/biofuels_ghana.pdf)
201. The World Bank, 2010, Ghana: Economics of Adaption to Climate Change Study, <http://climatechange.worldbank.org/content/ghana-economics-adaptation-climate-change-study>
202. World Food Programme, 2011, Ghana: Overview, <http://www.wfp.org/countries/Ghana/Overview>
203. World Food Programme, 2011, Ghana: Overview, op cit.
204. Forest Degradation and Deforestation in Ghana, 15 December 2010, <http://www.ghananewslink.com/index.php?id=10765>
205. FAO, The Right to Food in National Constitutions.
206. World Food Programme, 2010, Guatemala: Overview, <http://www.wfp.org/countries/Guatemala/Overview>
207. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 2.
208. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 2.
209. Guatemalan Government might enact national food emergency, 18 April 2011, <http://www.guatemala-times.com/news/guatemala/2237-guatemalan-government-might-enact-national-food-emergency.html>
210. Gaia, E., 2010, Mi Familia Progres: Change and Continuity in Guatemala's Social Policy, <http://www.cfr.ac.uk/spa2009/Gaia%20E%20-%20Mi%20Familia%20Progres%20-%20Change%20and%20Continuity%20in%20Guatemala's%20social%20policy.pdf>, p. 1.
211. Rural Poverty Portal, 2011, Rural Poverty in Guatemala, op cit.
212. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 2.
213. Extreme Weather Triggers Hunger Alert in Guatemala. <http://latino.foxnews.com/latino/news/2011/04/20/extreme-weather-triggers-hunger-alert-guatemala/>
214. Rural Poverty Portal, 2011, Rural Poverty in Guatemala, op cit.
215. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 6.
216. The Global Mechanism, 12 November 2007, Guatemala creates Unit to Combat Desertification and Drought, <http://global-mechanism.org/news--events/news/guatemala-creates-unit-to-combat-desertification-and-drought-->
217. FAO, 2010, Haiti, <http://www.fao.org/countries/55528/fr/hti/>
218. Haiti's \$700 million agriculture blueprint: Government plan to tackle food production, earthquake displaced, and prepare for hurricanes: <http://www.fao.org/news/story/en/item/39523/icode/>
219. World Food Programme, 2001, Overview: Haiti, op cit.
220. Rural Poverty Portal, 2010, Rural Poverty in Haiti, op cit.
221. Rebuilding Haiti with school meals, 10 March 2011, <http://www.examiner.com/global-hunger-in-national/rebuilding-haiti-with-school-meals>
222. Haiti's \$700 million agriculture blueprint: Government plan to tackle food production, earthquake displaced, and prepare for hurricanes: <http://www.fao.org/news/story/en/item/39523/icode/>
223. Sullivan, P. J., 28 January 2010, Perspective: Water, Energy, Economy, Poverty and Haiti, <http://www.circleofblue.org/waternews/2010/world/perspective-water-energy-economy-poverty-and-haiti/>
224. UNFCCC, 2008, National Adaption Programmes of Action, [http://unfccc.int/files/adaptation/application/pdf/napa\\_index\\_country.pdf](http://unfccc.int/files/adaptation/application/pdf/napa_index_country.pdf)
225. Gillespie, S. and Kadiyala, S., February 2011, Exploring the Agriculture-Nutrition Disconnect in India, 2020 Conference Brief: Leveraging Agriculture for Improving Nutrition and Health, <http://www.ifpri.org/sites/default/files/publications/2020anhconfr20.pdf>
226. FAO, 2011, India, <http://www.fao.org/countries/55528/en/ind/>
227. Agriculture reform key to India budget <http://www.ft.com/cms/s/0/b16797ee-4309-11e0-aef2-00144-feabdc0,s01=1.html#axzz1UMT4xxpZ>
228. Beckett, P., 6 January 2011, Rising Food Prices: Déjà Vu All Over Again, <http://blogs.wsj.com/indiarealtime/2011/01/06/rising-food-prices-deja-vu-all-over-again/>
229. Soaring Food Prices in India Lead to Food Protests, 24 February 2011, <http://www.activistpost.com/2011/02/soaring-food-prices-in-india-lead-to.html>

230. Loc Cit.
231. Department of Food and Public Distribution, Targeted Public Distribution Systems, <http://fcamin.nic.in/dfpd/Event-Details.asp?EventId=26&Section=PDS&ParentID=0&Parent=1&check=0>
232. The politics of PDS "reforms", 26 May 2011, in Current Affairs India, Right to Food, Social Policy, <http://viveks.info/the-politics-of-pds-reforms>
233. Prabhakar, B., 30 May 2011, States should pay cash if they fail to provide grain: Draft food bill, [http://articles.economicstimes.indiatimes.com/2011-05-30/news/29599050\\_1\\_welfare-schemes-draft-bill-distribution-system](http://articles.economicstimes.indiatimes.com/2011-05-30/news/29599050_1_welfare-schemes-draft-bill-distribution-system)
234. Bhattacharya, T., 11 July 2011, India faltering on poverty alleviation, <http://ibnlive.in.com/news/india-faltering-on-poverty-alleviation/165930-61.html>
235. Desertification of India, 2009, [http://www.caritas.org/activities/climate\\_change/desertification\\_in\\_india.html](http://www.caritas.org/activities/climate_change/desertification_in_india.html)
236. Loc Cit.
237. PEW Global Climate Change Center, June 2008, Summary: India's National Action Plan on Climate Change, <http://www.pewclimate.org/international/country-policies/india-climate-plan-summary/06-2008>
238. India's hidden climate change catastrophe: <http://www.independent.co.uk/environment/climate-change/indias-hidden-climate-change-catastrophe-2173995.html>
239. Gillespie, S. and Kadiyala, S., February 2011, op cit.
240. FAO, 2011, Kenya, <http://www.wfp.org/countries/Kenya/Overview>
241. World Food Programme, 2011, Kenya: Overview, <http://www.wfp.org/countries/Kenya/Overview>
242. Loc Cit.
243. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 1.
244. Ibid. p. 2.
245. Treasury to cut Funding to Agriculture Sector by 13 Percent, 5 June 2011, <http://www.theestafrican.co.ke/news/-/2558/1175184/-/o1ymsmz/-/index.html>
246. Launching the Kenyan National Land policy, 26 June 2009, [http://www.clearwomen.org/articles/launch\\_of\\_the\\_land\\_policy\\_26.6.09.pdf](http://www.clearwomen.org/articles/launch_of_the_land_policy_26.6.09.pdf)
247. Launching the Kenyan National Land policy, 26 June 2009, [http://www.clearwomen.org/articles/launch\\_of\\_the\\_land\\_policy\\_26.6.09.pdf](http://www.clearwomen.org/articles/launch_of_the_land_policy_26.6.09.pdf)
248. Deforestation and Climate Change in Kenya, 24 January 2001, <http://kenyaforests.blogspot.com/2011/01/deforestation-and-climate-change-in.html>
249. FAO, 31 August 2010, The Republic of Kenya recognises the right to food in the new Constitution, [http://www.fao.org/righttofood/news42\\_en.htm](http://www.fao.org/righttofood/news42_en.htm)
250. FAO, 2010, The State of Food Insecurity in the World - Addressing food insecurity in protracted crises, Op Cit.
251. Loc Cit.
252. FAO, 2010, Lesotho, <http://www.fao.org/isfp/country-information/lesotho/en/>
253. World food Programme, 2010, Overview: Lesotho, <http://www.wfp.org/countries/Lesotho/Overview>
254. FAO, 2010, Lesotho, <http://www.fao.org/isfp/country-information/lesotho/en/>
255. Thahane, T., Minister of Finance and Development Planning, 14 February 2011, op cit, p. 22.
256. Rural Poverty Portal, 2010, Rural Poverty in Lesotho, IFAD, <http://www.ruralpovertyportal.org/web/guest/country/home/tags/lesotho>
257. FAO, 2010, Lesotho, <http://www.fao.org/isfp/country-information/lesotho/en/>
258. Rural Poverty Portal, 2010, Rural Poverty in Lesotho, op cit.
259. Strengthening capacity for climate change adaption in the agricultural sector of Lesotho, 2010, <http://www.oneworldgroup.co.za/projects/climate-change/strengthening-capacity-for-climate-change-adaptation-in-the-agricultural-sector-of-lesotho/>
260. UNFCCC, 2008, National Adaption Programmes of Action, op cit.
261. Land degradation takes its toll on Lesotho, 19 November 2007, <http://www.africanagricultureblog.com/2007/11/land-degradation-takes-its-toll-on.html>
262. Rural Poverty Portal, 2010, Rural Poverty in Lesotho, op cit.
263. Social Institutions and gender index, 2010, Gender Equality and Social Institutions in Lesotho, op cit.
264. Rural Poverty Portal, 2010, Rural Poverty in Lesotho, op cit.
265. Regional Hunger and Vulnerability Programme, January 2007, op cit.
266. Regional Hunger and Vulnerability Programme, January 2007, Lesotho: summary data on social protection schemes, op cit.
267. Lesotho, June 2009, <http://www.relufa.org/partners/jhnewsletter/archives/lesotho10.htm>
268. World Food Programme, 2001, Overview: Liberia, <http://www.wfp.org/countries/Liberia/Overview>
269. FAO, 2010, Liberia, <http://www.fao.org/isfp/country-information/liberia/en/>
270. FAO, 2010, Liberia, op cit.
271. Loc Cit.
272. United Nations Liberia et al. Liberia Market Price Monitor – A monthly price analysis of food and other essential commodities, April 2011, Bulletin 16, [http://reliefweb.int/sites/reliefweb.int/files/resources/Full\\_Report\\_1592.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/Full_Report_1592.pdf)

273. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 2.
274. Liberia boosts local rice production to tackle food shortages, 18 May 2010, <http://www.trust.org/alertnet/news/liberia-boosts-local-rice-production-to-tackle-food-shortages>
275. Global Environment Facility, June 2010, Liberia – Enhancing Resilience to Climate Change by Mainstreaming Adaption Concern to Agricultural Sector Development, <http://www.thegef.org/gef/node/3335>
276. Adaption Learning Mechanism, 2010, Liberia, <http://www.adaptationlearning.net/liberia/profile>
277. Liberia boosts local rice production to tackle food shortages, 18 May 2010, <http://www.trust.org/alertnet/news/liberia-boosts-local-rice-production-to-tackle-food-shortages>
278. World Food Programme, 2001, Overview: Liberia, op cit.
279. United National Liberia, 2008, Social Protection Issues in Liberia, [http://www.unliberia.org/doc/Social per cent20-protection per cent20issues per cent20paper per cent20Dec per cent202008.pdf](http://www.unliberia.org/doc/Social%20per%20protection%20issues%20paper%20Dec%202008.pdf)
280. Adaption Learning Mechanism, 2010, Malawi, <http://www.adaptationlearning.net/malawi/profile>
281. Wines, M., 1 November 2005, Malawi is Burning, and Deforestation Erodes Economy, <http://www.nytimes.com/2005/11/01/international/africa/01malawi.html>
282. Harry, P., 3 March 2010, The Extent of Hunger, Poverty and Desertification in Malawi, <https://containergardening.wordpress.com/2010/03/03/the-extent-of-hunger-poverty-and-desertification-in-malawi-patrick-harry/>
283. IFPRI, 2011, Malawi Strategy Support Programme, op cit.
284. The World Bank, 4 October 2007, Malawi Social Protection Status Report, Report No. 40027-MW, [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/12/04/000020439\\_20071204112706/Rendered/PDF/400270MW.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/12/04/000020439_20071204112706/Rendered/PDF/400270MW.pdf)
285. Loc Cit.
286. Rural Poverty Portal, 2010, Rural Poverty in Malawi, op cit.
287. Loc Cit.
288. Loc Cit.
289. Social Institutions and Gender Index, 2010, Gender Equality and Social Institutions in Malawi, <http://genderindex.org/country/malawi>
290. Human Development Report, 2010, [http://hdr.undp.org/en/media/HDR\\_2010\\_EN\\_Complete\\_reprint.pdf](http://hdr.undp.org/en/media/HDR_2010_EN_Complete_reprint.pdf)
291. Analysis of Poverty in Mozambique, 2010, [http://www.undp.org/mz/en/content/download/2626/11963/file/Analysis per cent20of per cent20Poverty per cent20in per cent20Moz per cent20March per cent202011 per cent20ENG.pdf](http://www.undp.org/mz/en/content/download/2626/11963/file/Analysis%20of%20Poverty%20in%20Moz%20March%202011%20ENG.pdf)
292. World Bank, Millennium Development Goals, [http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?&CF=&REPORT\\_ID=1305&REQUEST\\_TYPE=VIEWADVANCED&DIMENSIONS=150](http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?&CF=&REPORT_ID=1305&REQUEST_TYPE=VIEWADVANCED&DIMENSIONS=150)
293. MICS Survey 2008, UNDP, <http://www.undp.org/mz/en/MDGS-GOAL/Goal-1-Eradicate-Absolute-Poverty-and-Hunger/Reducing-Hunger-Situation-and-Trends>
294. Geography, Agriculture and the Economy, Rural Poverty Portal, <http://www.ruralpovertyportal.org/web/guest/country/geography/tags/mozambique>
295. FAO, Country Profile- Mozambique, <http://www.fao.org/countries/55528/en/moz/>
296. Gender Aware Approaches in Agricultural Programmes, 2010, Mozambique Country Report – UT V Working paper 2010:6, SIDA, <http://sidapublications.citat.se/interface/stream/mabstream.asp?filetype=1&orderlistmainid=2947&printfileid=2947&filex=3952829810503>
297. Loc Cit.
298. FAO, Country Brief – Nepal July 2011, <http://www.fao.org/countries/55528/en/npl/>
299. World Food Programme, 19 March 2011, Rickshaw Driver Struggles With High Food Prices, <http://www.wfp.org/stories/high-food-prices-mean-more-hunger-less-work-nepalese-rickshaw-driver>
300. 293 Nepal: Government Forms Land Reform Commission, 21 December 2008, <http://southasiarev.wordpress.com/2008/12/21/nepal-government-forms-land-reform-commission/>
301. 294 FAO, May 2011, GIEWS Country briefs, <http://www.fao.org/giews/countrybrief/country.jsp?code=NPL>
302. 295 USAID country profile, 2009, Property Rights and Resource Governance, <http://usaidlandtenure.net/usaidlt-prproducts/country-profiles/>
303. Oxfam International, 2009, Even the Himalayas have Stopped Smiling: Climate Change in Nepal, <http://www.oxfam.org/sites/www.oxfam.org/files/nepal-climate-change-poverty-adaptation-0908.pdf>
304. Loc Cit.
305. WWF Global, Climate change effect on Nepal, [http://wwf.panda.org/about\\_our\\_earth/aboutcc/problems/rising\\_temperatures/hotspot\\_map/nepal.cfm](http://wwf.panda.org/about_our_earth/aboutcc/problems/rising_temperatures/hotspot_map/nepal.cfm)
306. Oxfam International, 2009, Even the Himalayas have Stopped Smiling: Climate Change in Nepal, op cit.
307. WOCAN, October 2008, Scoping Study on Women's Leadership in the Agriculture Sector in Nepal [www.wocan.org/files/all/nepal\\_scoping\\_study.pdf](http://www.wocan.org/files/all/nepal_scoping_study.pdf)
308. FAO, 2010, Country Brief: Nigeria, <http://www.fao.org/countries/55528/en/nga/>
309. FAO, 2009, Nigeria's Agriculture and Food security Challenges, op cit.
310. Budget 2011: Views on Recurrent Expenditure. Nigerian Daily. <http://www.thenigeriandaily.com/2011/03/09/budget-2011-views-on-recurrent-expenditure/>

311. African Economic Outlook. Nigeria Overview. <http://www.africaneconomicoutlook.org/en/countries/west-africa/nigeria/>
312. Izeze, I., 26 July 2011, Nigeria: PDP's N99 Trillion Food Imports And the Struggle to Eat, <http://www.ngex.com/news/public/article.php?ArticleID=1967>
313. Nigeria: High Food Prices Push Inflation to 12.1 per cent, 18 February 2011, <http://allafrica.com/stories/201104260348.html>
314. Nigeria: High Food Prices Push Inflation to 12.1 per cent, 18 February 2011, <http://allafrica.com/stories/201104260348.html>
315. Building Nigeria's Response to Climate Change, 2008, Climate Change Information on Nigeria: Agriculture, Food Security, Land Degradation, Forestry and Bio-Diversity, <http://www.nigeriaclimatchange.org/page4.php>
316. NASPA, 2010, Introduction to NASPA Partners and Team, <http://www.naspanigeria.org/aboutnaspa.php>
317. Social Institutions and Gender Index, 2010, Gender Equality and Social Institutions in Nigeria, <http://genderindex.org/country/nigeria>
318. World Food Programme, 2010, Pakistan: Overview, <http://www.wfp.org/countries/Pakistan/Overview>
319. Loc Cit.
320. Gronewold, N., 18 August 2010, Is the Flooding in Pakistan a Climate Change Disaster? <http://www.scientificamerican.com/article.cfm?id=is-the-flooding-in-pakistan>
321. Pak food imports up by 75 pc. Imran Ali Kundi. The Nation. Jan 20, 2011. <http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/Business/20-Jan-2011/Pak-food-imports-up-by-75pc>
322. Highlights of Pakistan Budget 2010-2011, 5 June 2010, <http://www.opfblog.com/10626/highlights-of-pakistan-budget-2010-2011/>
323. FAO, 2010, Pakistan, <http://www.fao.org/isfp/country-information/pakistan/en/>
324. Climate Development and Knowledge Network, 2010, Background Note: Pakistan's increasing vulnerability to climate change, <http://cdkn.org/resource/background-note-pakistans-increasing-vulnerability-to-climate-change/>
325. Brulliard, N., 26 April 2010, Saving Pakistan's Environment, a tree at a time, <http://www.globalpost.com/dispatch/pakistan/100422/pakistan-deforestation-conservation-environment-indian-ocean>
326. Loc Cit.
327. Social Institutions and Gender Index, 2001, Gender Equality and Social Institutions in Pakistan, <http://genderindex.org/country/pakistan>
328. After Pakistan's floods, new worries about debt and land rights. Caroline Gluck. Oxfam. 16 November 2010. <http://blogs.oxfam.org/en/blog/10-11-16-after-pakistans-floods-new-worries-about-debt-land-rights>
329. Rwanda Agriculture Budget Increased by 5 per cent, 11 May 2011, <http://in2eastfrica.net/rwanda-agriculture-budget-increased-by-5/>
330. Kezio-Musoke David. "Rwanda forecasts 7 pct economic growth in 2010." <http://af.reuters.com/article/investing-News/idAFJ0E62F0KN20100316>
331. World Food Programme, 2010, Rwanda: Overview, op cit.
332. World Food Programme, 2010, Rwanda: Overview, op cit.
333. African Development Bank, Rwanda: Gender Assessment – Progress towards Improving Women's Economic Status, 2008, pp.20-1
334. World Food Programme, 2010, Rwanda: Overview, <http://www.wfp.org/countries/Rwanda/Overview>
335. Loc Cit.
336. Rwanda Pledges Nationwide Forest Landscape Restoration. Environmental News Service. Feb. 4, 2011. <http://www.ens-newswire.com/ens/feb2011/2011-02-04-01.html>
337. UNFCCC, 2008, National Adaption Programmes of Action, op cit.
338. In Senegal, 15 percent of rural homes go hungry: WFP. Agence France Press. 9 November 2010. <http://www.wfp.org/content/senegal-15-percent-rural-homes-go-hungry-wfp>
339. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 9.
340. Economic Policy Research Institute: Senegal Country Profile. [www.eprionline.com/wp-content/uploads/2011/03/41-Senegal.pdf](http://www.eprionline.com/wp-content/uploads/2011/03/41-Senegal.pdf)
341. Reuters, May 2008, "Senegal Offers Investors Tax Breaks to Boost Farming", <http://www.reuters.com/article/idUSL11206798>
342. Senegalese Children Combat Desertification, 1 April 2010, <http://www.voanews.com/english/news/Senegalese-Children-Combat-Desertification-89683697.html>
343. Boko, M., 3 April 2007, An Ongoing Battle Against Deforestation, <http://ipsnews.net/africa/notes.asp?idnews=37198>
344. Loc Cit.
345. Case Study: Gender, Human Security and Climate Change in Senegal, 2008, op cit.
346. UNFCCC, 2008, National Adaption Programmes of Action, op cit.
347. Loc Cit. <http://www.awoko.org/2011/03/23/mewr-and-nacsa-launch-rapid-response-growth-poles-project/>
348. Country Profile, Rural Poverty Portal, <http://www.ruralpovertyportal.org/web/guest/country/home/tags/sierra+per+cent20leone>
349. FAO, Countries- Sierra Leone, <http://www.fao.org/countries/55528/en/sle/>

350. WFP, Rapid Food Security Assessment in Western Area, Sierra Leone, [http://reliefweb.int/sites/reliefweb.int/files/resources/C8AA4AA9F81AE944C125757C0056E93A-Full\\_Report.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/C8AA4AA9F81AE944C125757C0056E93A-Full_Report.pdf)
351. WFP, Rapid Food Security Assessment in Western Area, Sierra Leone, [http://reliefweb.int/sites/reliefweb.int/files/resources/C8AA4AA9F81AE944C125757C0056E93A-Full\\_Report.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/C8AA4AA9F81AE944C125757C0056E93A-Full_Report.pdf)
352. World Bank, Millennium Development Goals, [http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?&CF=&REPORT\\_ID=1305&REQUEST\\_TYPE=VIEWADVANCED](http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?&CF=&REPORT_ID=1305&REQUEST_TYPE=VIEWADVANCED)
353. WFP, Rapid Food Security Assessment in Western Area, Sierra Leone, [http://reliefweb.int/sites/reliefweb.int/files/resources/C8AA4AA9F81AE944C125757C0056E93A-Full\\_Report.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/C8AA4AA9F81AE944C125757C0056E93A-Full_Report.pdf)
354. FAO, GIEWS Country Briefs- Sierra Leone, <http://www.fao.org/giews/countrybrief/country.jsp?code=SLE>
355. National Adaptive Programme of Action, Sierra Leone, 2007, <http://unfccc.int/resource/docs/napa/sle01.pdf>
356. FAO, GIEWS Country Briefs- Sierra Leone, <http://www.fao.org/giews/countrybrief/country.jsp?code=SLE>
357. Sierra Leone - National Adaptation Programme of Action (NAPA), <http://www.adaptationlearning.net/sierra-leone-napa>
358. Buhl, A., 2008, Meeting Nutritional Needs Through School Feeding: A Snapshot of Four Africa Nations, Global Child Nutrition Foundation, University of Washington, School of Public Health, <http://www.gcnf.org/library/Meeting-Nutritional-Needs-Through-School-Feeding.pdf>
359. De Schutter, O. 15 July 2011, Mandate of the Special Rapporteur on the Right to Food Mission to South Africa from 7 to 15 July 2011 Pretoria, 15 July 2011, United Nations, [http://www.srfood.org/images/stories/pdf/officialreports/20110715\\_per cent20\\_south-africa-preliminary-conclusions\\_en.pdf](http://www.srfood.org/images/stories/pdf/officialreports/20110715_per cent20_south-africa-preliminary-conclusions_en.pdf)
360. Buhl, A., 2008, Meeting Nutritional Needs Through School Feeding: A Snapshot of Four Africa Nations, Global Child Nutrition Foundation, University of Washington, School of Public Health, <http://www.gcnf.org/library/Meeting-Nutritional-Needs-Through-School-Feeding.pdf>
361. Information contained in this paragraph can be found at: "Rotten Fruit: Tesco profits as women workers pay high price." June 2005. [www.actionaid.org.uk/doc\\_lib/14\\_1\\_rotten\\_fruit.pdf](http://www.actionaid.org.uk/doc_lib/14_1_rotten_fruit.pdf)
362. Environmental Monitoring Group, 2010, Land Degradation, <http://www.bcb.uwc.ac.za/inforeep/land1.htm>
363. Agriculture, Forestry and Land, 2010, South Africa.co.za, op cit.
364. De Schutter, O. 15 July 2011, Mandate of the Special Rapporteur on the Right to Food Mission to South Africa from 7 to 15 July 2011 Pretoria, 15 July 2011, Op Cit.
365. South Africa: Will unseasonal rains affect food prices?, May 2011, <http://www.africafiles.org/article.asp?ID=25452>
366. World Food Programme, 2010, United Republic of Tanzania, <http://www.wfp.org/countries/tanzania-united-republic>
367. Cotula, L., Vermeulen, S., Leonard, R. and Keeley, J., 2009, "Land Grab or Development Opportunity: Agricultural Investment and International Land Deals in Africa," IIED/FAO/IFAD, London/Rome.
368. The United Republic of Tanzania Prime Minister's Office, 2010, Rural Financial Services Programme, <http://www.rfsp.org/>
369. Government of Tanzania, 2010, Agriculture, <http://www.tanzania.go.tz/agriculture.html>
370. Tanzania: Agriculture starved of funds, warns farmers, 04 May 2011, op cit.
371. Tanzania: Bill on School Feeding Plan Coming – Minister, 5 May 2011, <http://allafrica.com/stories/201105060024.html>
372. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 2.
373. FAO, 23 May 2011, GIEWS Country Brief: Tanzania, op cit.
374. World Food Programme, 2010, Uganda, <http://www.wfp.org/countries/Uganda/Overview>
375. World Food Programme, July 2011, The Market Monitor – Trends of staple food prices in vulnerable countries, op cit. p. 2.
376. IFPRI, June 2008, An assessment of the likely impact on Ugandan households of rising global food prices, <http://www.ifpri.org/publication/assessment-likely-impact-ugandan-households-rising-global-food-prices>
377. The World Bank, 2011, Country Brief: Uganda, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/UGANDAEXTN/0,,menuPK:374947~pagePK:141132~piPK:141107~theSitePK:374864,00.html>
378. The World Bank, 2011, Country Brief: Uganda, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/UGANDAEXTN/0,,menuPK:374947~pagePK:141132~piPK:141107~theSitePK:374864,00.html>
379. Tabaire, B. and Okao, J., 2 July 2010, Uganda's National Budget: 2011/2012: How Strategic are the Budget Priorities? [www.acode-u.org/documents/PDS\\_14.pdf](http://www.acode-u.org/documents/PDS_14.pdf)
380. Kelly, A., 25 June 2009, Uganda 'at risk' of losing all of its forests, <http://www.guardian.co.uk/society/katineblog/2009/jun/25/uganda-deforestation>
381. Mugisa, A., 17 September 2008, Uganda faces desertification, <http://www.newvision.co.ug/D/8/13/650183>
382. Vietnam successful example of development: ADB president, 3 May 2011, [http://news.xinhuanet.com/english2010/world/2011-05/03/c\\_13857178.htm](http://news.xinhuanet.com/english2010/world/2011-05/03/c_13857178.htm)
383. Nguyen, H., and Grote, U., December 2004, Agricultural Policies in Vietnam: Producer Support estimate 1986-2002. Center for Development Research (ZEF) Discussion Paper No. 93, <http://www.ifpri.org/sites/default/files/publications/mtidp79.pdf>
384. Clark, H., 29 September 2008, Vietnam heeding climate change warnings, <http://ipsnews.net/news.asp?idnews=44046>
385. VNEconomyNews.com - Director of the Southern Institute of Agricultural Science and Technology Bui Chi Buu interview with Vietnam Economic Times, 3 Feb 2011,
386. <http://www.vneconomynews.com/2011/02/mekong-delta-agriculture-needs.html>

387. Nguyen, L., 19 April 2011, Vietnam: Inflation is back again, price double in past five years, <http://talk.onevietnam.org/vietnam-inflation-is-back-again-prices-double-in-past-5-years/>
388. The World Bank, April 2011, Food Price Watch, [http://www.worldbank.org/foodcrisis/foodpricewatch/april\\_2011.html](http://www.worldbank.org/foodcrisis/foodpricewatch/april_2011.html)
389. The World Bank, April 2011, Food Price Watch, [http://www.worldbank.org/foodcrisis/foodpricewatch/april\\_2011.html](http://www.worldbank.org/foodcrisis/foodpricewatch/april_2011.html)
390. Social Institutions and Gender Index, 2001, Gender Equality and Social Institutions in Vietnam, <http://genderindex.org/country/viet-nam>
391. World Bank, Zambia country Profile, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/ZAMBIAEXTN/0,,menuPK:375684~pagePK:141132~piPK:141107~theSitePK:375589,00.html>
392. World Bank, Millennium Development Goals, [http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?&CF=&REPORT\\_ID=1305&REQUEST\\_TYPE=VIEWADVANCED](http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?&CF=&REPORT_ID=1305&REQUEST_TYPE=VIEWADVANCED)
393. Zambia: Mitigating Malnutrition, 24 February 2011, <http://allafrica.com/stories/201102250435.html>
394. Rural Poverty Portal, Rural Poverty in Zambia, <http://www.ruralpovertyportal.org/web/guest/country/home/tags/zambia>
395. Kodamaya, S. 2011, Agricultural Policies and Food Security of Smallholder Farmers in Zambia, [http://jambo.africa.kyoto-u.ac.jp/kiroku/asm\\_suppl/abstracts/pdf/ASM\\_s42/Kodamaya.pdf](http://jambo.africa.kyoto-u.ac.jp/kiroku/asm_suppl/abstracts/pdf/ASM_s42/Kodamaya.pdf)
396. Kodamaya, S. 2011, Agricultural Policies and Food Security of Smallholder Farmers in Zambia, [http://jambo.africa.kyoto-u.ac.jp/kiroku/asm\\_suppl/abstracts/pdf/ASM\\_s42/Kodamaya.pdf](http://jambo.africa.kyoto-u.ac.jp/kiroku/asm_suppl/abstracts/pdf/ASM_s42/Kodamaya.pdf)
397. Mudenda, M. (2010) Climatic Change in Zambia: Ignore, Mitigate or Adapt, [http://www.fig.net/pub/fig2010/papers/ts02e/ts02e\\_mudenda\\_4196.pdf](http://www.fig.net/pub/fig2010/papers/ts02e/ts02e_mudenda_4196.pdf)
398. UNDP, Climate Change: The Zambian Story, <http://content.undp.org/go/newsroom/2010/january/climate-change-the-zambia-story.en>
399. Economics Association of Zambia, 'Zambia Public Expenditure Review: Agriculture', Presentation, 2 December 2010

## Acknowledgments

Report was written by Leora Casey & Alex Wijeratna, with contributions from: Jo Walker, Aftab Alam, Anne Jellema, Harjeet Singh, Soren Ambrose, Ruchi Tripathi and Youjin B. Chung.

The data used in the brief was researched and analysed by Vijay Jamwal and Tom Sharman.

An additional thanks to Shanaaz Nel for project managing the report.

Last but by no means least, a big thanks to the many staff - too many to mention here - across the 28 ActionAid countries included in this report, who worked tirelessly to cross-check their country data and to interview communities in which we work. In so doing, they help to ensure that the report reflects the current reality in their country and within the communities in which we work.

**ActionAid** is a partnership between people in rich and poor countries, dedicated to ending poverty and injustice. We work with people all over the world to fight hunger and disease, seek justice and education for women, hold companies and governments accountable, and cope with emergencies in over 40 countries.

**ActionAid**

International Secretariat  
4th Floor, The Mall Offices  
11 Cradock Avenue  
Rosebank 2196  
Johannesburg  
South Africa  
Telephone: +27-11-7314500  
[www.actionaid.org](http://www.actionaid.org)

Telephone: +27 11 731 4500  
Facsimile: +27 11 880 8082  
Email: [mail.jhb@actionaid.org](mailto:mail.jhb@actionaid.org)  
Website: [www.actionaid.org](http://www.actionaid.org)

ActionAid International is incorporated in The Hague, The Netherlands. Registration number 2726419  
ActionAid International is incorporated in South Africa under section 21A of the Companies Act 1973.  
Registration number 2004/007117/10