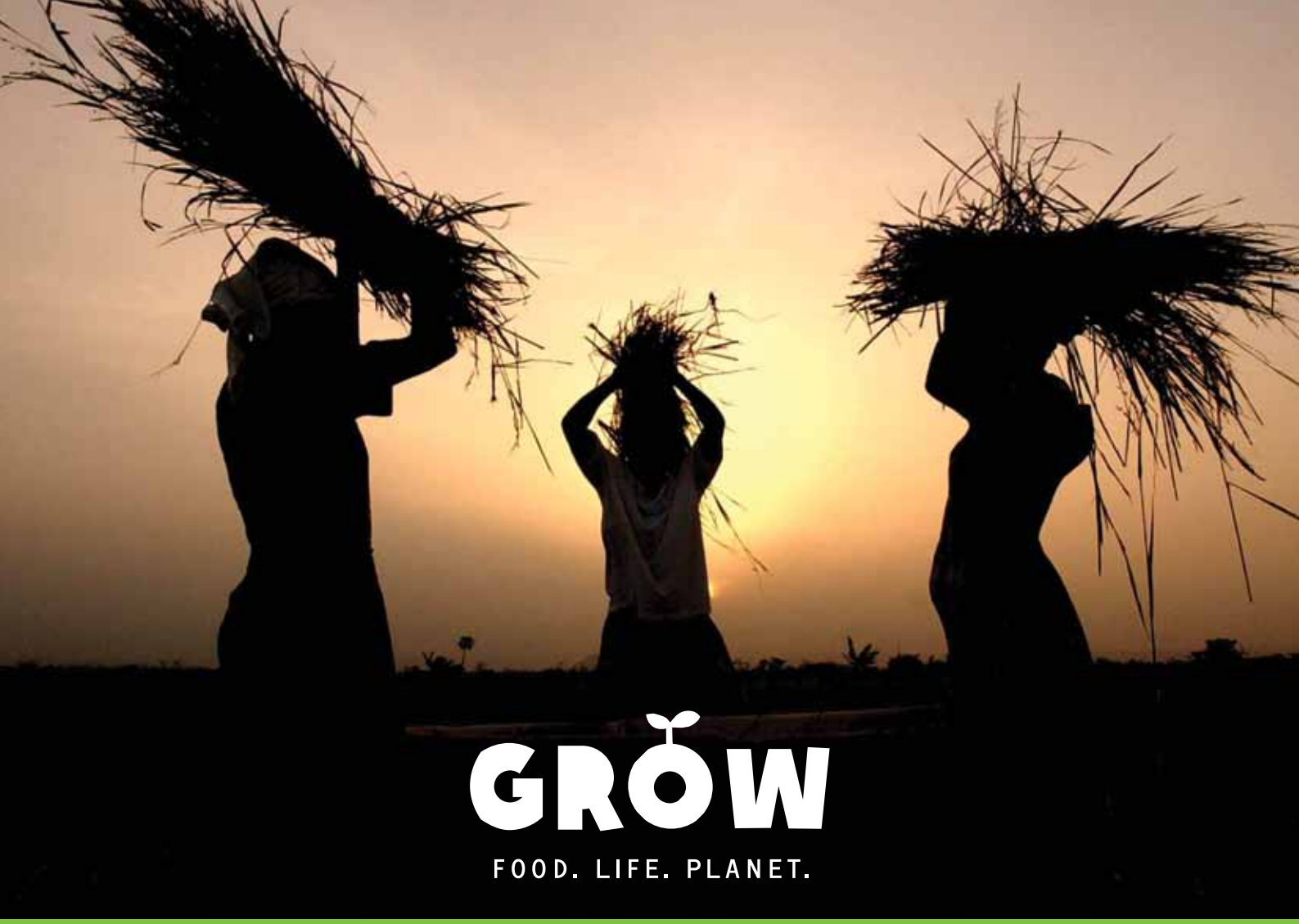


# GROWING A BETTER FUTURE

## Food justice in a resource-constrained world

Oxfam

www.oxfam.org/grow

## Author: Robert Bailey

## Acknowledgements

This report was written by Robert Bailey and coordinated by Gonzalo Fanjul. Its development was a co-operative effort, involving Oxfam staff and partner organisations. It draws on the findings of a research programme managed by Richard King, Javier Pérez and Kelly Gilbride. Alex Evans, Javier García, Silvia Gómez, Duncan Green, Kirsty Hughes, Richard King, Kate Raworth, Jodie Thorpe, Kevin Watkins and Dirk Willenbockel made specific written contributions to the report, which also draws on an extensive list of case studies, notes and background research that can be found at www.oxfam.org/grow

Many colleagues contributed with extensive comments and inputs to the drafts of the report. Special mention should be made of Nathalie Beghin, Sarah Best, Phil Bloomer, Stephanie Burgos, Tracy Carty, Teresa Cavero, Hugh Cole, Mark Fried, Stephen Hale, Paul Hilder, Katia Maia, Duncan Pruett, Anna Mitchell, Bernice Romero, Ines Smyth, Alexandra Spieldoch, Shawna Wakefield, Marc Wegerif and Bertram Zagema.

Production of the report was managed by Anna Coryndon. The text was edited by Mark Fried.



Published by Oxfam GB for Oxfam International under ISBN 978-1-84814-852-9 in June 2011. Oxfam GB, Oxfam House, John Smith Drive, Cowley, Oxford, OX4 2JY, UK. Oxfam GB is registered as a charity in England and Wales (no. 202918) and in Scotland (SCO 039042) and is a member of Oxfam International.

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GROW

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## Food justice in a resource-constrained world

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VINA ACECOOK
1800
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# 1
# INTRODUCTION

Niger is the epicentre of hunger. Here, it is chronic. Corrosive. Structural. Systemic. Over 65 per cent of people survive on less than $1.25 a day.[1] Nearly one in two children is malnourished.[2] One in six dies before they reach the age of five.[3]

Families are fighting a losing battle against soil depletion, desertification, water scarcity, and unpredictable weather. They are exploited by a tiny elite of powerful traders who set food prices at predatory levels.

Shocks rain down upon them like hammer blows: a compounding series of disasters, each one leaving them more vulnerable to the next. The drought of 2005. The food price crisis of 2008. The drought of 2010. These events stole lives, shattered families, and obliterated livelihoods. The consequences will be felt for generations.

Chronic and persistent hunger. Rising demand on top of a collapsing resource base. Extreme vulnerability. Climate chaos. Spiralling food prices. Markets rigged against the many in favour of the few. It would be easy to dismiss Niger, but these problems are not unique – they are systemic. The global food system is broken. Niger is simply on the front line of an impending collapse.

At the start of 2011, there were 925 million hungry people worldwide.[4] By the end of the year, extreme weather and rising food prices may have driven the total back to one billion, where it last peaked in 2008. Why, in a world that produces more than enough food to feed everybody, do so many – one in seven of us – go hungry?

The list of answers routinely given is bafflingly long, often crude and nearly always polarized. Too much international trade. Too little international trade. The commercialization of agriculture. A dangerously romantic obsession with peasant agriculture. Not enough investment in techno-fixes like biotechnology. Runaway population growth.

Most are self-serving, designed to blame the victims or to defend the status quo and the special interests that profit from it. This is symptomatic of a deeper truth: power above all determines who eats and who does not.

Hunger, along with obesity, obscene waste, and appalling environmental degradation, is a by-product of our broken food system. A system constructed by and on behalf of a tiny minority – its primary purpose to deliver profit for them. Bloated rich-country farm lobbies, hooked on handouts that tip the terms of trade against farmers in the developing world and force rich-country consumers to pay more in tax and more for food. Self-serving elites who amass resources at the expense of impoverished rural populations. Powerful investors who play commodities markets like casinos, for whom food is just another financial asset – like stocks and shares or mortgage-backed securities. Enormous agribusiness companies hidden from public view that function as global oligopolies, governing value chains, ruling markets, accountable to no one. The list goes on.

## An age of crisis

2008 marked the start of the new era of crisis. Lehman Brothers collapsed, oil reached $147 a barrel, and food prices leapt, precipitating protests in 61 countries, with riots or violent protests in 23.[5] By 2009, the number of hungry people passed one billion for the first time.[6] Rich-country governments responded with hypocrisy, professing alarm while continuing to throw billions of dollars of taxpayers' money at their bloated biofuel industries, diverting food from mouths to petrol tanks. In a vacuum of trust, governments one after another imposed export bans, pushing up prices further.

Meanwhile the profits of global agribusiness companies rocketed, the returns of speculators soared, and a new wave of land-grabbing kicked off in the developing world, as private and state investors sought to cash in or to secure supply.

Now, as climate chaos sends us stumbling into our second food price crisis in three years, little has changed to suggest that the global system will manage any better this time around. Power remains concentrated in the hands of a self-interested few.

*'We lack food. We're facing hunger, but we can't buy much. ... This year things are much worse than before. Worse than in 2005 when things were bad. Then not everybody faced hunger ... just some areas. But now, everyone is facing hunger.'*

Kima Kidbouli, 60 years, Niger, 2010.

The paralysis imposed upon us by a powerful minority risks catastrophe. Atmospheric concentrations of greenhouse gases are already above sustainable levels and continue to rise alarmingly. Land is running out. Fresh water is drying up. We have pushed ourselves into the 'Anthropocene Epoch' – the geological era in which human activity is the main driver of planetary change.

Our bloated food system is a major cause of this crunch. But it is also rapidly becoming a casualty. As resource pressures mount and climate change gathers pace, poor and vulnerable people will suffer first – from extreme weather, from spiralling food prices, from the scramble for land and water. But they won't be the last.

New research commissioned for this report paints a grim picture of what a future of worsening climate change and increasing resource scarcity holds for hunger. It predicts international price rises of key staples in the region of 120 to 180 per cent by 2030. This will prove disastrous for food importing poor countries, and raises the prospect of a wholesale reversal in human development.

Opposite: Families in Flinigue, Niger receive food vouchers from Oxfam. The vouchers give them the freedom to choose what they buy in a specified store. (August 2010)

Right: Kimba Kidbouli, 60 years, Niger.

## A new prosperity

This future is not certain. Crisis on the scale we are experiencing today almost always leads to change: the Great Depression and the Second World War led to a new world order, the United Nations, the Bretton Woods system, and the spread of welfare states. The oil and economic crises of the 1970s replaced Keynesianism with laissez-faire economics and the Washington Consensus.

The challenge before us today is to seize the opportunity for change and set course towards a new prosperity, an age of co-operation rather than competition, in which the well-being of the many is put before the interests of the few. During the last food price crisis, politicians tinkered at the margins of global governance. This time they must deal with the root causes. Three big shifts are needed:

- First, we must build a new global governance to avert food crises. Governments' top priority must be to tackle hunger and reduce vulnerability – creating jobs and investing in climate adaptation, disaster risk reduction, and social protection. International governance – of trade, food aid, financial markets, and climate finance – must be transformed to reduce the risks of future shocks and respond more effectively when they occur.
- Second, we must build a new agricultural future by prioritising the needs of small-scale food producers in developing countries – where the major gains in productivity, sustainable intensification, poverty reduction and resilience can be achieved. Governments and businesses must adopt policies and practices that guarantee farmers' access to natural resources, technology and markets. And we must reverse the current gross misallocation of resources which sees the vast majority of public money for agriculture flow to agro-industrial farms in the North.
- Finally, we must build the architecture of a new ecological future, mobilizing investment and shifting the behaviours of businesses and consumers, while crafting global agreements for the equitable distribution of scarce resources. A global deal on climate change will be the litmus test of success.

All of this will require overcoming the vested interests that stand to lose out. There is growing appetite to do so as these issues rise up the political agenda, pushed by events and by campaigners, or grasped by leaders with a sense of moral purpose. Though the banks fight reform tooth and nail, public outrage has seen legislative measures passed in the USA, and steps toward regulation in the UK and elsewhere. And a financial transactions tax is on the agenda in the EU and at the G20, alongside measures to rein in commodity speculation and reform agricultural trade. Though special interests continue to pervert food aid in many rich countries, a concerted public campaign in Canada succeeded in freeing it to work effectively; Canada now leads international negotiations to achieve the same outcome globally. Though agricultural subsidies remain enormous, some reform has reduced their negative impacts in developing countries. Though dirty industry continues to block progress on climate change, responsible companies have broken ranks with them.[7] A growing number of countries are adopting bold greenhouse gas reduction targets or making ambitious investments in clean technologies. Global investments in renewable technologies overtook fossil fuel spending for the first time in 2009.[8]

But what is needed is a step change. Strong political leaders with unambiguous mandates from their peoples. Progressive businesses that choose to break ranks with laggards and blockers. Customers that demand they do so. And it is needed now. The window of opportunity may be short-lived, and many of the choices that must be taken are already upon us: if catastrophic climate change is to be avoided, global emissions must peak within the next four years;[9] if we are to avoid a spiralling food price crisis, fragility in the global system must be addressed today.

*'We need to address the question of global hunger not as one of production only, but also as one of marginalization, deepening inequalities, and social injustice. We live in a world in which we produce more food than ever before, and in which the hungry have never been as many.'*

Olivier de Schutter, Special Rapporteur on the Right to Food at the FAO Conference, November 2009

Opposite: Women from Dola village construct a pond to irrigate their vegetable gardens. Nepal's hill districts have lacked investment in agriculture and are faced with a rise in food prices and reduced crop yields as a result of climate change. (Nepal 2010)

## Oxfam's vision

Oxfam has been responding to food crises for nearly 70 years – from Greece in 1942 to Biafra in 1969, Ethiopia in 1984, and Niger in 2005, plus countless other silent disasters that play out beyond the gaze of global media. All have been entirely avoidable – the result of disastrous decisions, abused power, and perverted politics. More recently, Oxfam has found itself responding to growing numbers of climate-related disasters.

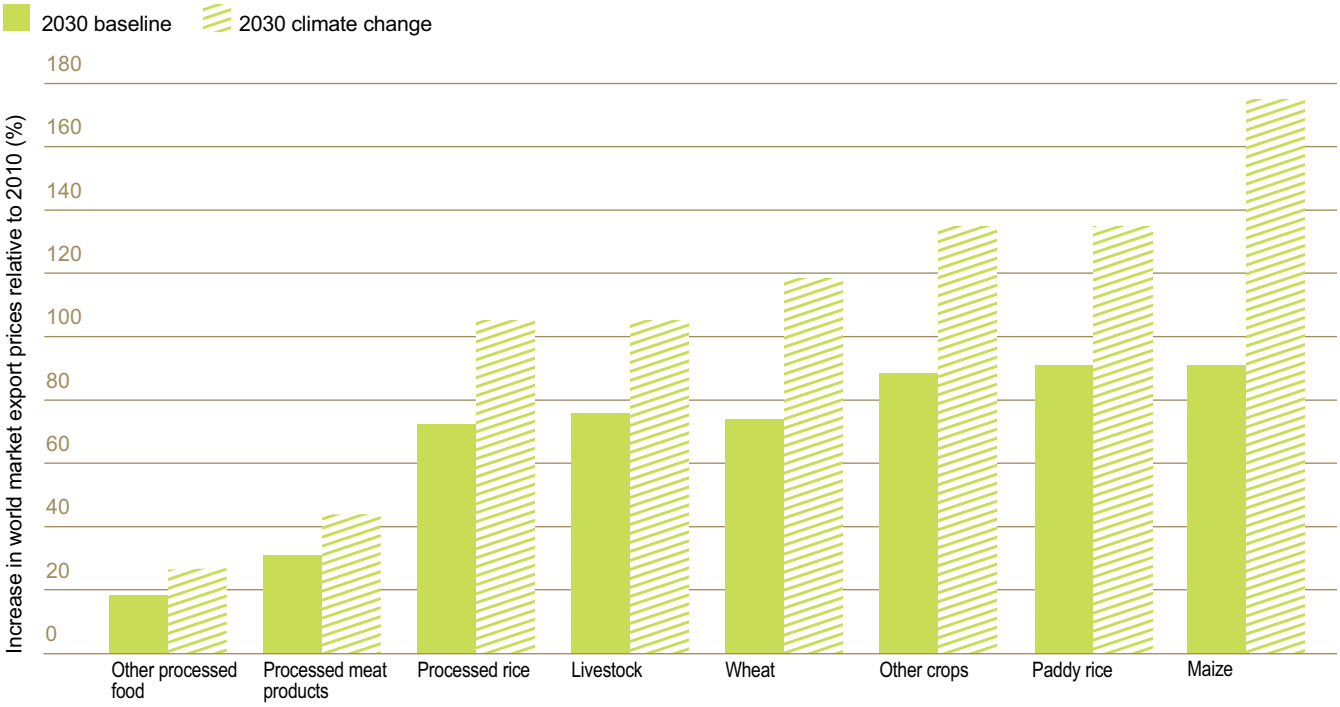
Prevention is better than cure, and so Oxfam also campaigns against the vested interests and unfair rules that corrupt the food system: rigged trade rules, pork-barrel biofuel policies, broken aid promises, corporate power, and inaction on climate change.

Many other organizations – global civil society, producers' organizations, women's networks, food movements, trade unions, responsible businesses and empowered consumers, grassroots campaigns for low carbon living, food sovereignty or the right to food – are promoting positive initiatives to alter the way we produce, consume and think about food. Together we will build a growing global movement for change. Together we will challenge the current order and set a path towards a new prosperity.

# 2

# THE AGE OF CRISIS: A SKEWED AND FAILING SYSTEM

**Figure 1: Real food price changes predicted over the next 20 years**



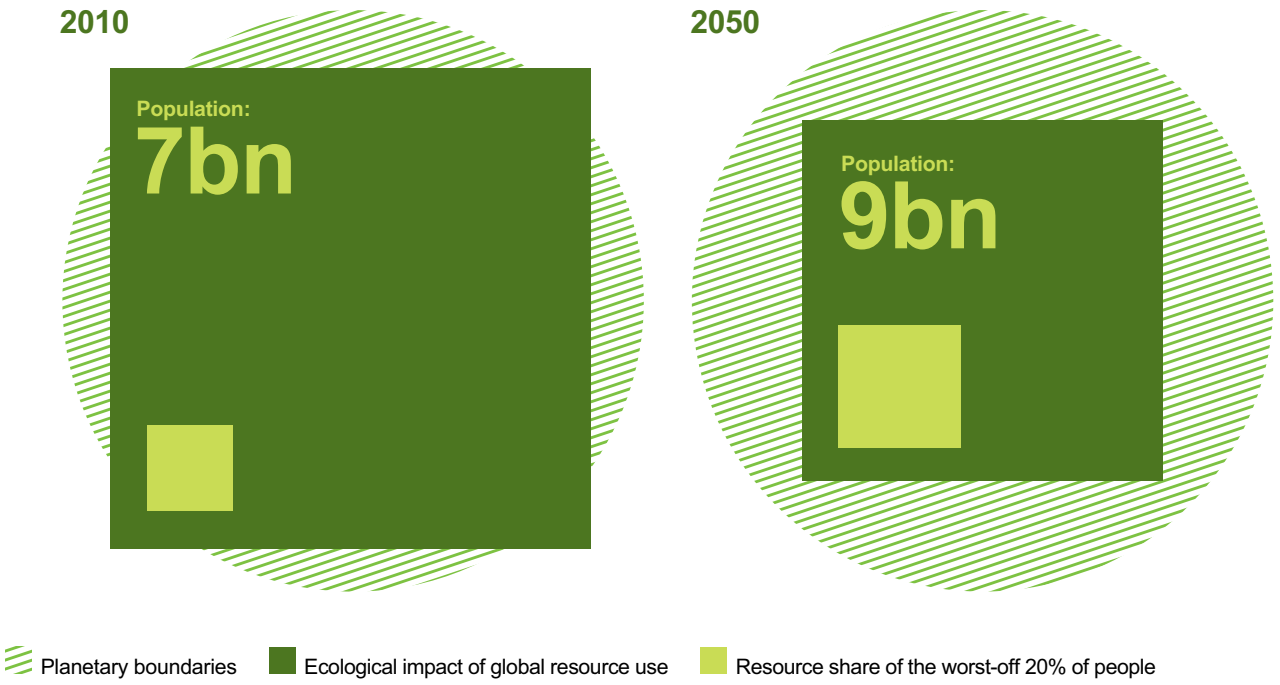

*Source: D. Willenbockel (2011) 'Exploring Food Price Scenarios Towards 2030', Oxfam and IDS*

# 2.1 A failing food system

The food system is buckling under intense pressure from climate change, ecological degradation, population growth, rising energy prices, rising demand for meat and dairy products, and competition for land from biofuels, industry, and urbanization.

The warning signs are clear. Surging and unstable international food prices, growing conflicts over water, the increased exposure of vulnerable populations to drought and floods are all symptoms of a crisis that may soon become permanent: food prices are forecast to increase by something in the range of 70 to 90 per cent by 2030 *before the effects of climate change*, which will roughly the double price rises again (see Figure 1).

**Figure 2: The challenge of increasing equity within ecological limits**




We face the unprecedented challenge of pursuing human development and ensuring food for all, in ways that will both keep the planet within essential ecological boundaries and end extreme poverty and inequalities. Figure 2 illustrates the task at hand.

Even as global population significantly expands, we must:

- Reduce the impacts of consumption to within sustainable limits, and
- Redistribute consumption towards the poorest.

Achieving the vision for 2050 requires a redistribution of power from the few to the many – from a handful of companies and political elites to the billions of people who actually produce and consume the world's food. A share of consumption must shift towards those living in poverty, so everyone has access to adequate, nourishing food. A share of production must shift from polluting industrial farms to smaller, more sustainable farms, along with the subsidies that prop up the former and undermine the latter. The vice-like hold over governments of companies that profit from environmental degradation – the peddlers and pushers of oil and coal – must be broken.

There are three major challenges that must be met:

- The sustainable production challenge: we must produce enough nourishing food for nine billion people by 2050 while remaining within planetary boundaries;
- The equity challenge: we must empower women and men living in poverty to grow or to buy enough food to eat;
- The resilience challenge: we must manage volatility in food prices and reduce vulnerability to climate change.

Running through each are fault lines along which struggles for power and resources will play out. This chapter sets out each in detail.

# 2.2 The sustainable production challenge

Agriculture faces a daunting challenge. It must dramatically increase food production while completely transforming the way in which food is produced. On current trends, demand for food may increase by 70 per cent by 2050[10] due to population growth and economic development. The Earth's population is expected to grow from around 6.9 billion today to 9.1 billion in 2050 – an increase of one-third[11] – by which time an estimated seven out of ten people worldwide will live in Low-Income Food Deficit Countries (LIFDCs).[12]

These are forecasts with big margins of error. Greater investment in solutions that increase women's empowerment and security – by improving access to education and healthcare in particular – will slow population growth and achieve stabilization at a lower level.

But the Malthusian instinct to blame resource pressures on growing numbers of poor people misses the point, because people living in poverty contribute little to world demand. Skewed power relations and unequal consumption patterns are the real problem.

The global economy is forecast to be three times bigger by 2050, with emerging economies' share of output rising from one-fifth to well over a half.[13] This is a good thing, and fundamental to addressing the challenges of equity and resilience. But for this level of development to be viable, an unprecedented shift to more sustainable consumption trends must take place in both industrialized and emerging economies.

*'We started this irrigation scheme because we were facing problems with the climate. ... It's impossible to harvest enough for the whole year when you have to rely on the rain. Now we have access to water during the dry months we are able to plant several crops in a year – wheat, rice and tomatoes. We no longer see the problems other people face.'*

Charles Kenani, farmer, Malawi

Right: Charles Kenani standing in his rice field. The Oxfam-funded Mnembo Irrigation scheme has helped 400 families in Malawi by transforming their traditional small low-yield crops into year-round, high volume harvests that provide continuous food and a source of income. (Malawi, 2009)

At present, higher incomes and increasing urbanization leads people to eat less grains and more meat, dairy, fish, fruit, and vegetables. Such a 'Western' diet uses far more scarce resources: land, water, atmospheric space (see Figure 3).

In the meantime, in more than half of industrialized countries, 50 per cent or more of the population is overweight,[14] and the amount of food wasted by consumers is enormous – quite possibly as much 25 per cent.[15]

## Yield increases drying up

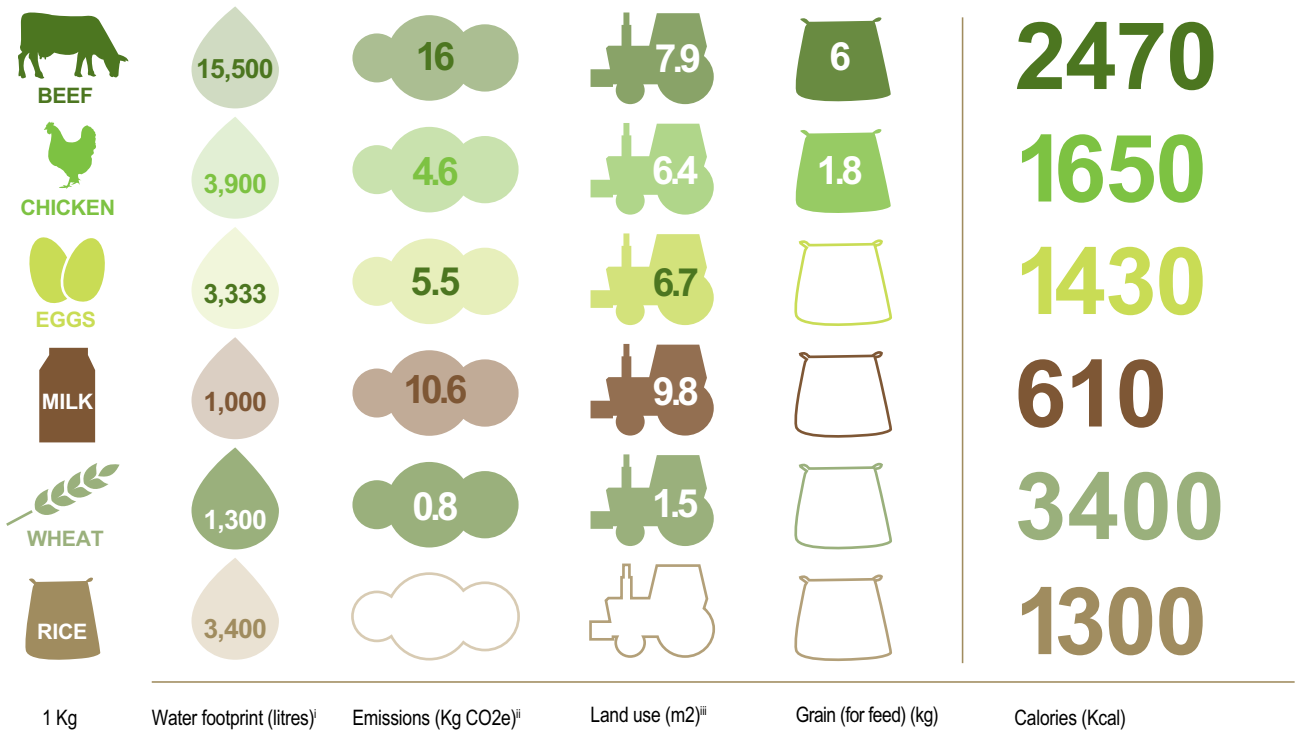
In the past, rising demand has been met and surpassed by increasing crop yields, but the dramatic achievements of the past century are running out of steam. Global aggregate growth in yields averaged 2 per cent per year between 1970 and 1990, but plummeted to just over 1 per cent between 1990 and 2007. This decline is projected to continue over the next decade to a fraction of one per cent.[16]

The US Department of Agriculture's Economic Research Service observed in 2008 that global consumption of grain and oilseeds outstripped production for seven of the eight years between 2001 and 2008.[17]

Modern agro-industrial farming is running faster and faster just to stand still. Put simply, increasing irrigation and fertilizer use can only get us so far, and we're nearly there. With the exception of parts the developing world, the scope for increasing the area under irrigation is disappearing.[18] Increasing fertilizer use offers ever diminishing returns and serious environmental consequences.

But it is not like this everywhere. Throughout the developing world, there is huge untapped potential for yield growth in small-scale agriculture.[19] With the right kind of investment this potential can be realised – helping to meet the sustainable production challenge while delivering agricultural development for people in poverty.

**Figure 3: The ecological footprint of food**




[i]Assumes an average egg weighs 60g, and the density of milk is 1kg per litre.
[ii]Based on production in England and Wales
[iii]Based on production in England and Wales, assumes all production is on land of an equal grade

*Sources: Water http://www.waterfootprint.org/?page=files/productgallery; emissions and land use UK DEFRA (2006), http://goo.gl/T12ho; grain* National Geographic*, http://goo.gl/4CgFB; calories USDA National Nutrient Database, http://goo.gl/7egTT*

## Policy making captured by the few

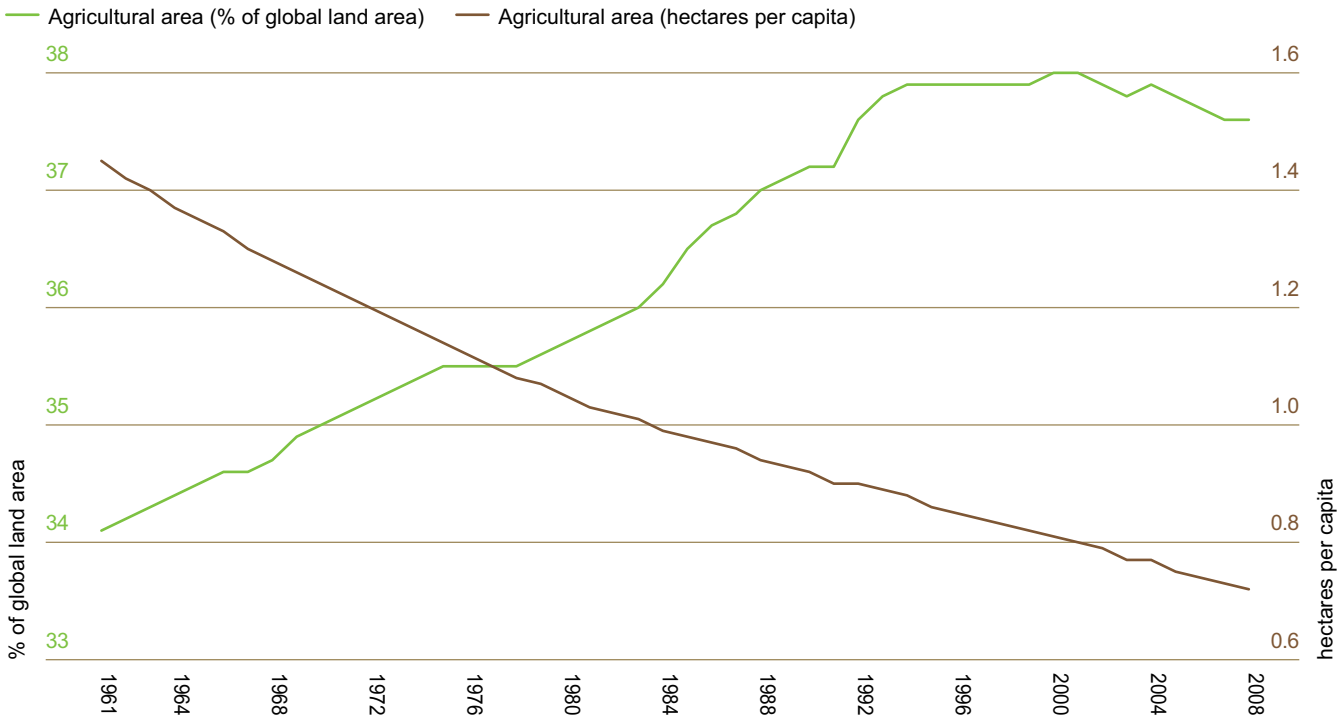
Sadly, investment in developing country agriculture, despite the huge potential benefits, has been pitiful. Between 1983 and 2006, the share of agriculture in official development assistance (ODA) fell from 20.4 per cent to 3.7 per cent, representing an absolute decline of 77 per cent in real terms.[20] During this time rich country governments did not neglect their own agricultural sectors. Annual support spiralled to over $250bn a year[21] – 79 times agricultural aid[22] – making it impossible for farmers in poor countries to compete. Confronted with these odds, many developing country governments chose not to invest in agriculture, further compounding the trend.

The costs of rich country support are borne not only by poor farmers in the developing world, but also by people in rich countries, who pay twice – first through higher tax bills, and second through higher food prices. It is estimated that in 2009, the EU's Common Agricultural Policy (CAP) added €79.5bn to tax bills and another €36.2bn to food bills.[23] According to one calculation, it costs a typical European family of four almost €1,000 a year. The real irony is that the CAP purports to help Europe's small farmers, but it is the rich few that benefit the most, with about 80 per cent of direct income support going into the pockets of the wealthiest 20 per cent – mainly big landowners and agribusiness companies.[24] Never, in the field of farming, has so much, been taken from so many, by so few.

In the aftermath of the 2008 food price crisis, rich countries at the G8 Summit announced the l'Aquila Food Security Initiative: a commitment to mobilize $20bn over three years for investment in developing countries. If this was an attempt to atone for past sins, it was, at best, underwhelming. The pledge amounted to a derisory fraction of the subsidies that rich countries were lavishing on their biofuels industries at the time – one of the key drivers of the 2008 price hike.[25] Incredibly, a large portion of this figure has turned out to be recycled from past promises or double-counted against other commitments. In the case of Italy, the l'Aquila commitment actually represented a *reduction* in aid.[26]

Rich country governments have spectacularly failed to resist the capture of agricultural policy making by their farm lobbies. The results? Drastically reduced agricultural productivity and increased poverty in the South, and the plunder of hundreds of billions of dollars a year from taxpayers in the North.

## Figure 4: The share of land devoted to agriculture has peaked




*Source: Calculated from FAO, http://faostat.fao.org/site/377/default.aspx*

## Natural resources squeezed

The huge increase in demand for food must be met from a rapidly depleting resource base, squeezed by biofuel production, carbon sequestration and forest conservation, timber production, and non-food crops. As a result, the share of land devoted to food production has peaked (see Figure 4).

At the same time, the amount of arable land per head is decreasing, having almost halved since 1960.[27] Nobody really knows how much land remains, but it isn't much.[28] Very often, land that may be termed idle or marginal in fact plays a critical role in the livelihoods of marginalized people such as pastoralists, indigenous peoples and women.

*'For with the land comes the right to withdraw the water linked to it, in most countries essentially a freebie that increasingly could be the most valuable part of the deal.'*

Peter Brabeck-Lethmath, CEO, Nestlé

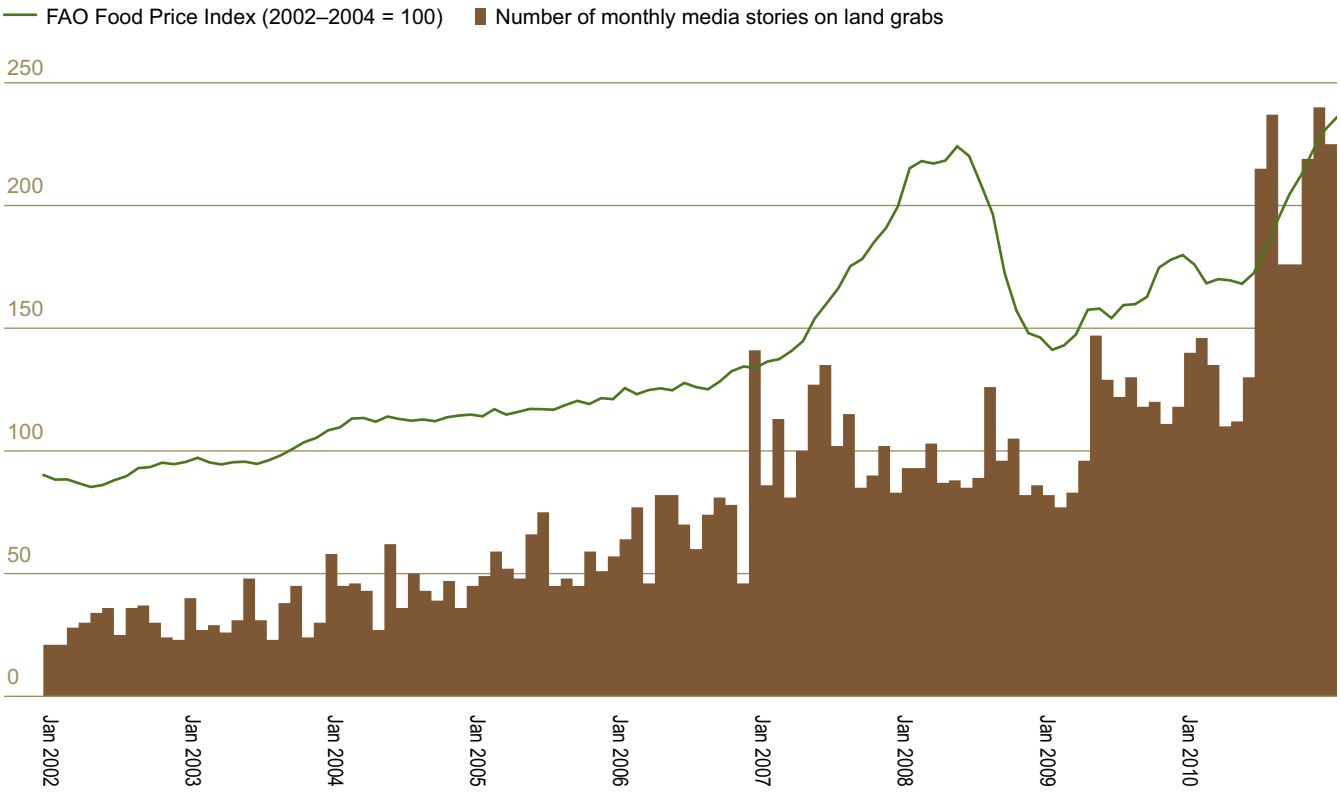
Increase in demand is not likely to be met by the expansion of production area. Nevertheless, whatever land there is will surely be prized. The vast majority looks to be in sub-Saharan Africa and Latin America.[29]

Water, the lifeblood of agriculture, is already scarcer than land. Nearly three billion people live in areas where demand outstrips supply.[30] In 2000, half a billion people lived in countries chronically short of water; by 2050 the number will have risen to more than four billion.[31] By 2030, demand for water is expected to have increased by 30 per cent.[32]

Agriculture accounts for 70 per cent of global fresh water use,[33] and is both a driver and increasingly a victim of water scarcity. Climate change will only exacerbate an already acute problem, particularly in already stressed regions. Shrinking glaciers will reduce flows in crucial rivers – for example, the Ganges, Yellow, Indus, and Mekong Rivers all depend on the Himalayas. Rises in sea level will salinate fresh water, while floods will contaminate clean water.

Opposite: Rice prices in Cambodia soared in 2008. The pile of rice on the left was bought in 2008, and the pile on the right shows what the same money would have bought in 2007. (Cambodia, 2008)

## Figure 5: The land grab legacy of the 2008 food price crisis




*Sources: FAO http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/ and http://www.factiva.com*

The Middle East offers a taste of what may be to come. Aquifers are rapidly becoming exhausted and the area under irrigation is in decline. Saudi Arabia has experienced precipitous falls of over two-thirds in wheat production since 2007, and on current trends will become entirely dependent on imports by next year.[34] Middle Eastern states are among the biggest land investors in Africa,[35] driven not by a lack of land but a lack of water.

Many governments and elites in developing countries are offering up large swathes of land amid clouds of corruption at rock bottom prices. Companies and investors are cashing in, while food-insecure governments are rushing to secure supply. The scramble began with the 2008 food price crisis, and continues unabated: in 2009, Africa saw 22 years' worth of land investment in 12 months (see Figure 5).[36]

Research from the International Land Coalition, Oxfam Novib and partners identifies over 1,200 land deals reportedly under negotiation or completed, covering 80m hectares,[37] since 2000 – the vast majority of them after 2007. Over 60 per cent of the land targeted was in Africa.[38]

Of course, investment can be a good thing. But price rises like the one we saw in 2008 spark a frenzy among investors, with many acting speculatively or in fear of losing out. And why not? The land is usually dirt cheap, apparently idle and, anyway, investing in land is a one-way bet these days: the price will only go up as it becomes more and more scarce. Investors have been acquiring land in much larger quantities than they could possibly use, leading the World Bank to wonder if the purpose is to lock in the highly favourable terms currently on offer and avoid future competition.[39] The most comprehensive research to date suggests that 80 per cent of projects reported in the media are undeveloped, and only 20 per cent had begun actual farming.[40]

**Box 1: A new breed of land investor**

Where there is scarcity, there is opportunity. And financial investors are quick to turn opportunity into profit. Numerous hedge funds, private equity funds, sovereign wealth funds and institutional investors are now buying up farmland in developing countries. One is Emergent Asset Management, currently enjoying the arbitrage opportunity presented by 'very, very inexpensive' land values in sub-Saharan Africa.[41]

Emergent points out that Zambian land, though some of the most expensive in sub-Saharan Africa, is still one-eighth the price of similar land in Argentina or Brazil, and less than a twentieth of that in Germany. Emergent assumes that land will generate strong returns as prices rise – in part because of increasing demand for land from the food powers of Brazil and China.[42]

One of Emergent's stated strategies is to identify poorly managed or failing farms and buy them up at distressed prices, then turn them around in order to boost returns. Rapidly appreciating land prices provide a 'backstop' should this risky strategy fail.

Agricultural investment is desperately needed. And Emergent argues that it is not simply building up land banks – it also invests to increase productivity and brings in new techniques and technologies, as well as making 'social investments' in schools, hospitals and housing. But the risk remains that some investors will be interested only in the easy return on land, rather than the trickier business of growing food.

## Climate changing

Climate change poses a grave threat to food production. First, it will apply a further brake on yield growth. Estimates suggest that rice yields may decline by 10 per cent for each 1°C rise in dry-growing-season minimum temperatures.[43] Modelling has found that countries in sub-Saharan Africa could experience catastrophic declines in yield of 20–30 per cent by 2080, rising as high as 50 per cent in Sudan and Senegal.[44]

Second, it will increase the frequency and severity of extreme weather events such as heatwaves, droughts and floods which can wipe out harvests at a stroke. Meanwhile, creeping, insidious changes in the seasons, such as longer, hotter dry periods, shorter growing seasons, and unpredictable rainfall patterns are bewildering poor farmers, making it harder and harder for them to know when best to sow, cultivate, and harvest their crops.[45]

For people without the incomes, savings, access to healthcare or social insurance enjoyed in industrialized countries, shocks from climatic disasters or shifting seasons often force them to go without food, sell off assets critical to their livelihoods, or take their children out of school. Short-term coping strategies can have long-term consequences, causing a downward spiral of deeper poverty and greater vulnerability.

Despite the scale and urgency of the challenge, governments have failed to take adequate action to reduce emissions, collectively or individually. Instead they have listened to their industrial lobbies – the small number of companies that stand to lose from a transition towards a sustainable future from which the rest of us would gain (see Box 2).

**Box 2: Dirty industry and grubby lobbying**

Lobbying from dirty industries has kept Europe locked into low ambition on reducing its greenhouse gas emissions, marginalizing its influence in negotiations and preventing a transition to a low-carbon economy. Others, meanwhile, race past – most notably China, now the world's biggest sovereign investor in renewables.[46] Some of the most intense lobbying comes from steel, oil and gas, chemicals, and paper companies and the associations that speak on their behalf,[47] as well as from wider cross-sectoral umbrella groups, most depressingly of all BusinessEurope – the general European employers' association – to which most major companies that profess deep concern about climate change belong. These faceless associations have low public profiles, allowing supposedly 'responsible' companies to keep their hands clean.

Companies not only lobby against greater climate ambition, they also lobby to capture regulation for themselves. For example, ArcelorMittal, the world's largest privately owned steel company, has lobbied to secure free allowances under the EU Emissions Trading Scheme (ETS). The company has profited nicely from its lobbying, ending up with allowances to spare – potentially allowing it to *increase* its emissions in the future. All these surplus allowances depress the carbon price and remove the incentives for investment in clean technologies that the carbon market was designed to provide. By 2012 ArcelorMittal could potentially make over €1bn from these free handouts,[48] turning on its head the principle at the heart of the ETS – that the polluter pays.

**Box 3: Palm oil – eating the world's forests**

The oil palm is a remarkable crop. It is high-yielding and fast-growing. Its oil provides a versatile ingredient used throughout the world, though few of us realize it. Palm oil can be found in chocolate, bakery products, sauces, chips, margarine, cream cheese, sweets, and ready meals. It is produced mainly by major plantation companies in Malaysia and Indonesia, and bought in vast quantities by food manufacturers such as Unilever, Kraft, and Nestlé.

Our hunger for palm oil appears insatiable. Demand is expected to double from 2000 to 2050.[53] This holds terrifying implications for the rainforests of Indonesia, where every minute plantations eat one more hectare further into one of the planet's most carbon-rich major ecosystems.[54]

About 80 per cent of palm oil ends up in food,[55] but a growing amount is used for biodiesel. Regulations in the EU, USA and Canada that require minimum biofuels content in gasoline and diesel are further driving deforestation either directly or because palm oil is replacing other edible oils diverted for biodiesel use. Oxfam estimates that even if the EU excludes all biodiesel produced from deforested land, its mandate could raise emissions from deforestation by up to 4.6bn tonnes of $CO_2$ – nearly 70 times the annual $CO_2$ saving the EU expects to make by reaching its target to derive 10 per cent of its transport energy from biofuels by 2020.[56]

Climate change not only threatens agriculture, the way we now farm also threatens the climate. While not the only contributor to greenhouse gas emissions, nor even the greatest, agriculture accounts for a significant share of the damage: somewhere between 17 and 32 per cent of all human-induced greenhouse gases.[49] Key drivers are emissions from fertilizer use and from cattle.[50] Alarmingly, both are set to increase significantly.[51]

The biggest contributor by far to agricultural emissions, however, is land-use change;[52] converting wilderness to agriculture can release large amounts of greenhouse gases, particularly in the case of forests and wetlands. (See Box 3)

*'... nowadays when it comes to the rains sometimes you get too much and it destroys the crops. Sometimes you don't get any at all and the crops just wilt. If that happens, you don't have any food the next year. About the rains, I don't know what we can do.'*

Killa Kawalema, farmer, Malawi

**Figure 6: The proportion of household expenditure allocated to food, with predictions to 2030**


## Demography, scarcity and climate change: a perfect storm scenario for more hunger

Predicting the future is a hazardous endeavour. When it comes to agricultural production and nutrition, there are many unknowns. Yet detailed scenarios and projections developed for this report point unequivocally towards an overwhelming conclusion: the world faces a real and imminent risk of major setbacks in efforts to combat the scourge of hunger.[57] That risk is *not* a remote future threat. It is emerging today, will intensify over the next decade, and evolve over the 21st century as ecology, demography and climate change interact to create a vicious circle of vulnerability and hunger in some of the world's poorest countries.

There are alternatives. But the central message to emerge from the scenario analysis is that the international community is sleepwalking into an unprecedented and avoidable human development reversal. Research carried out for this report explored a range of food price scenarios for 2020 and 2030 using international trade models.[58] In the absence of urgent and aggressive action to tackle global warming, prices of basic staple foods are expected to skyrocket in the coming two decades. Using a different model that nevertheless forecasts a similar trend, the International Food Policy Research Institute (IFPRI) has recently calculated that 12 million more children would be consigned to hunger by 2050, compared with a scenario with no climate change.[59]

Headline figures such as this provide only a partial picture of the scale of threat. Over the lifetime of a single generation, the world is losing an opportunity to remove the spectre of hunger from an under-five population larger than all of the children in that age group living today in France, Germany and the United Kingdom *combined*. Standing by and failing to prevent that outcome would represent an abdication of responsibility and failure of international leadership without precedent; not least because this is an avoidable tragedy if – and only if – governments act decisively in the next few years to avert it.

Why the focus on food prices? First, because world food prices provide a useful barometer of how the tectonic shifts in demography, ecology and climate might play out within the food system. Rising prices signal imbalances in the supply response to rising demand. Second, food prices have a major bearing on hunger because they influence the capacity of poor people – and poor countries – to gain access to calories. Of course, prices cannot be viewed in isolation: purchasing power is also influenced by income. But in many of the developing regions facing the gravest challenges with malnutrition, food still accounts for around half of average household spending – and for an even greater share of spending by people living in poverty (see Figure 6).[60]

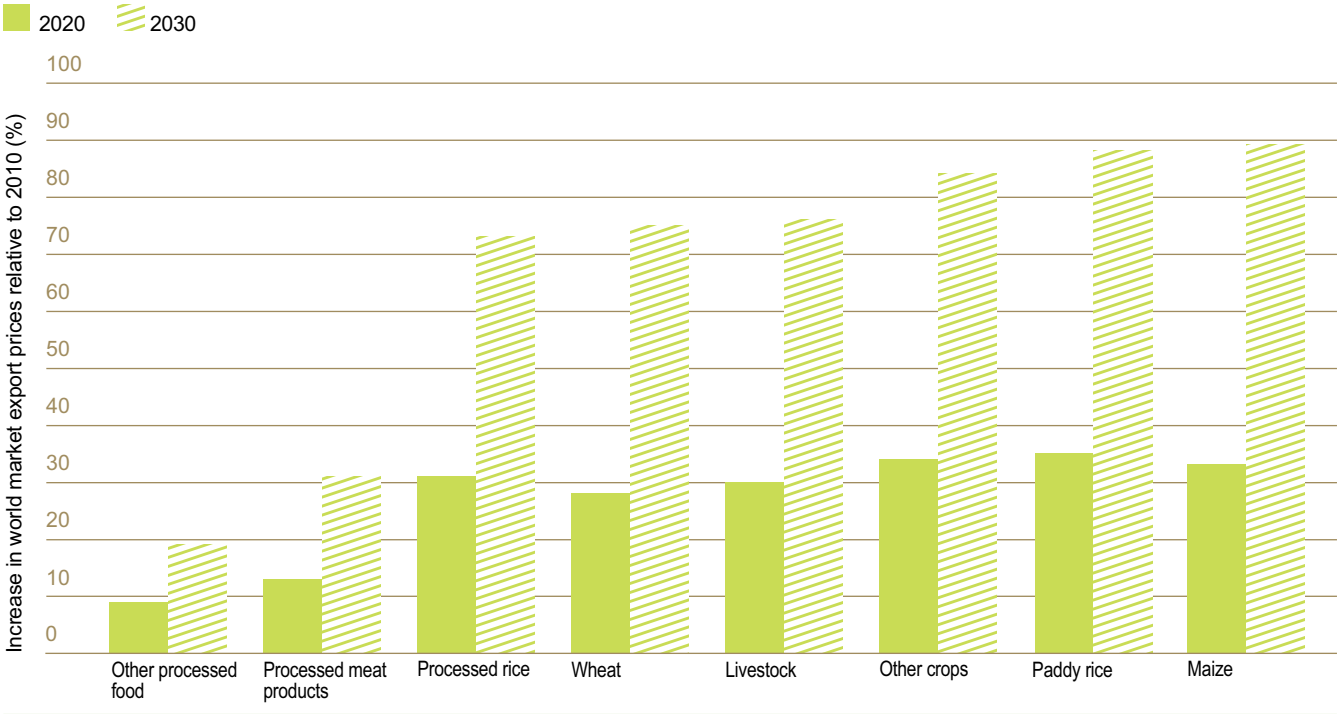
'Exploring Food Price Scenarios Towards 2030'
www.oxfam.org/grow

International price projections for the major traded food staples reflect the severe stresses under which the food system is buckling. Over the next two decades, prices for commodities such as rice, wheat and maize are forecast to rise by between 60 and 80 per cent (see Figure 7). This will hit the poorest people the hardest. For example, although food accounts for 46 per cent of an average West African household's spending, in the poorest 20 per cent of Malian households, food consumes 53 per cent of all household spending; and although in much of South Asia 40 per cent of all household spending goes on food, for the poorest 20 per cent of Sri Lankans, the figure is as high as 64 per cent. [61]

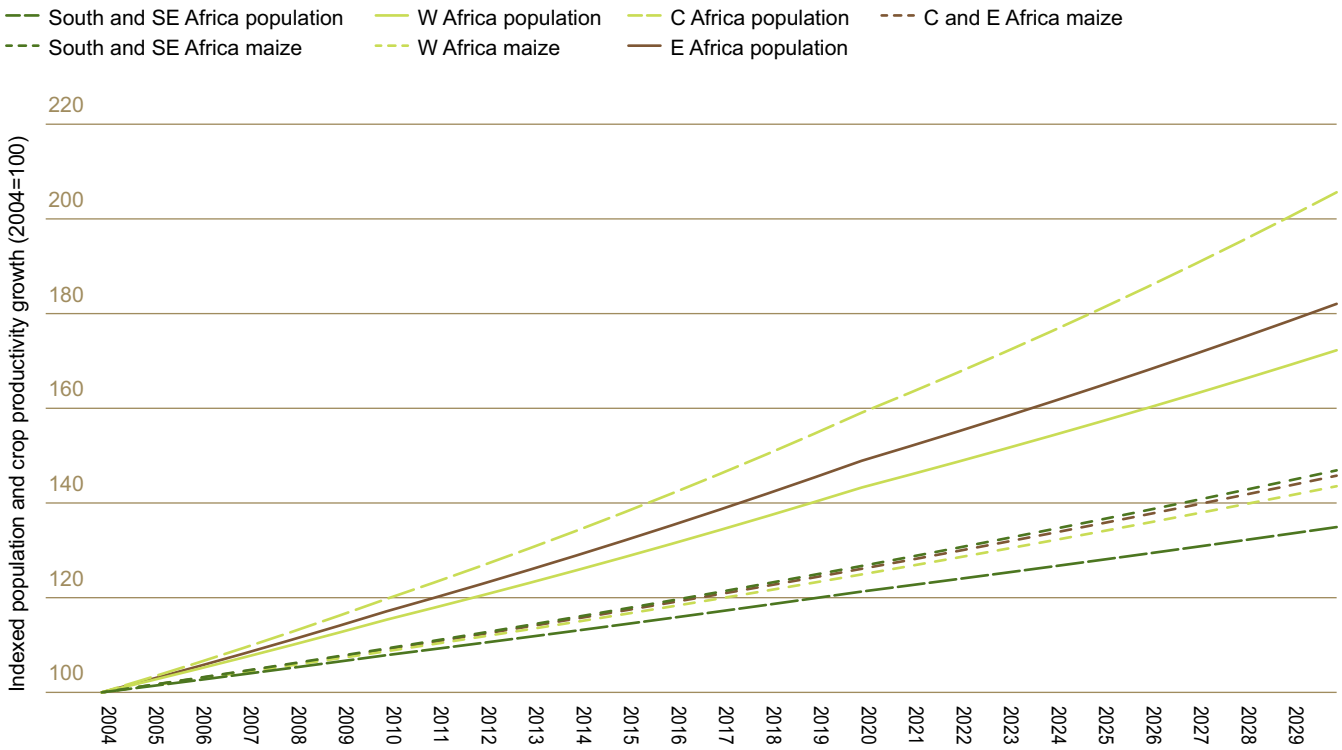
Global projections of this type simultaneously obscure and understate scenarios for different regions. Disaggregated data for four African regions points to a large and sustained divergence between population growth and baseline productivity growth in agriculture. These are regions with a collective population of over 870 million and some of the world's highest levels of malnutrition. In West Africa, the population will increase by 2.1 per cent per annum on average, while a simple continuation of past productivity gains would increase maize productivity by 1.4 per cent per annum to 2030 (see Figure 8).

In South and South-East Africa, maize productivity growth is projected to be barely any higher, though population growth is projected to be slower. While the productivity–population growth divergence is less marked in other parts of the world, projections for East Asia (excluding China), India, and the rest of South and Central Asia all point to a future in which agriculture struggles to keep pace with the demands associated with a growing population (see Figure 8b).

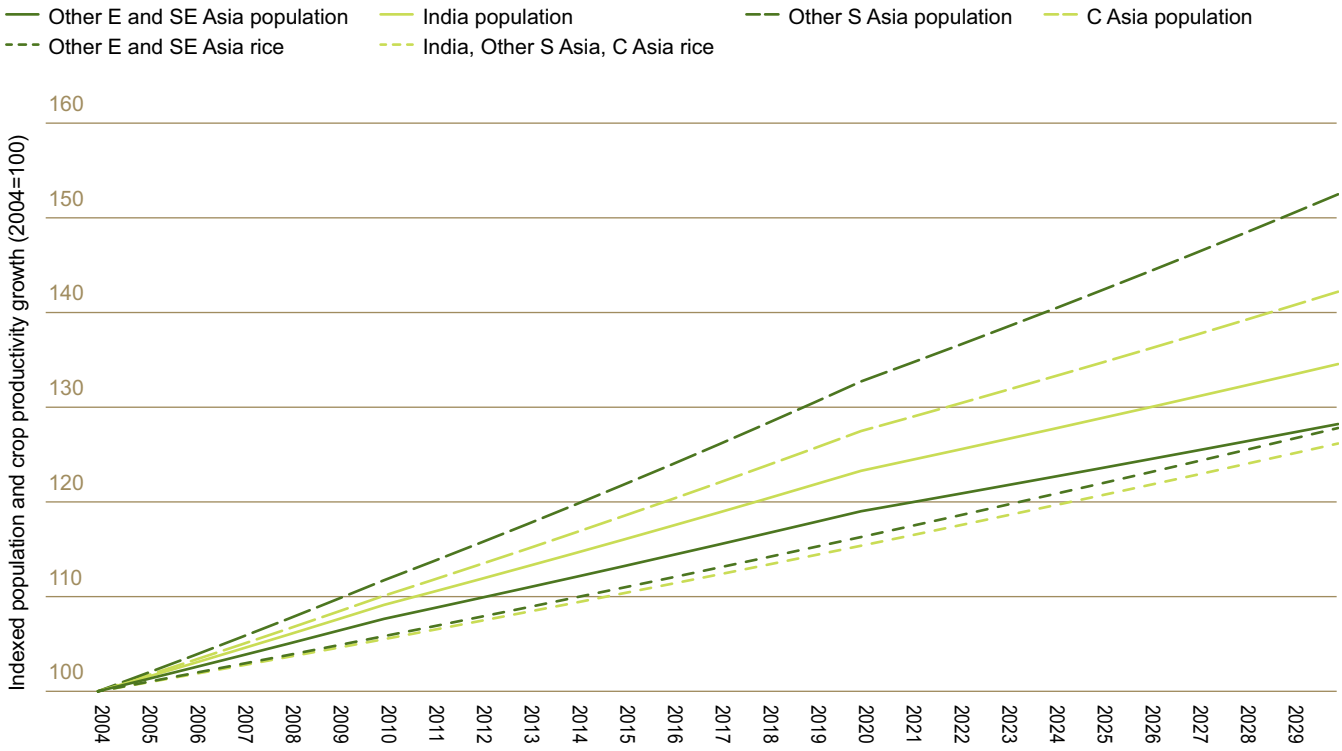
**Figure 7: Predicted increases in world food commodity prices**



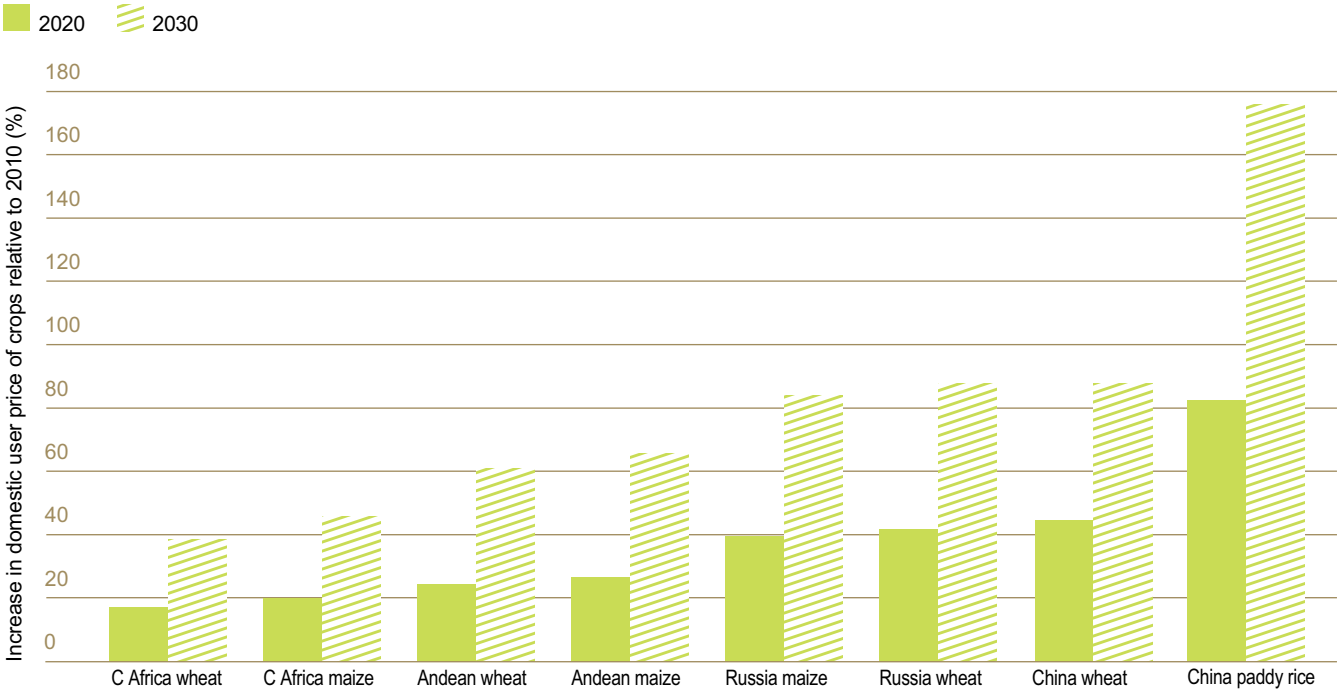
## Figure 8a: Comparative growth rates in population and crop productivity: maize in sub-Saharan Africa




## Figure 8b: Comparative growth rates in population and crop productivity: rice in Asia



## Figure 9: Predicted food price increases for domestic users to 2030



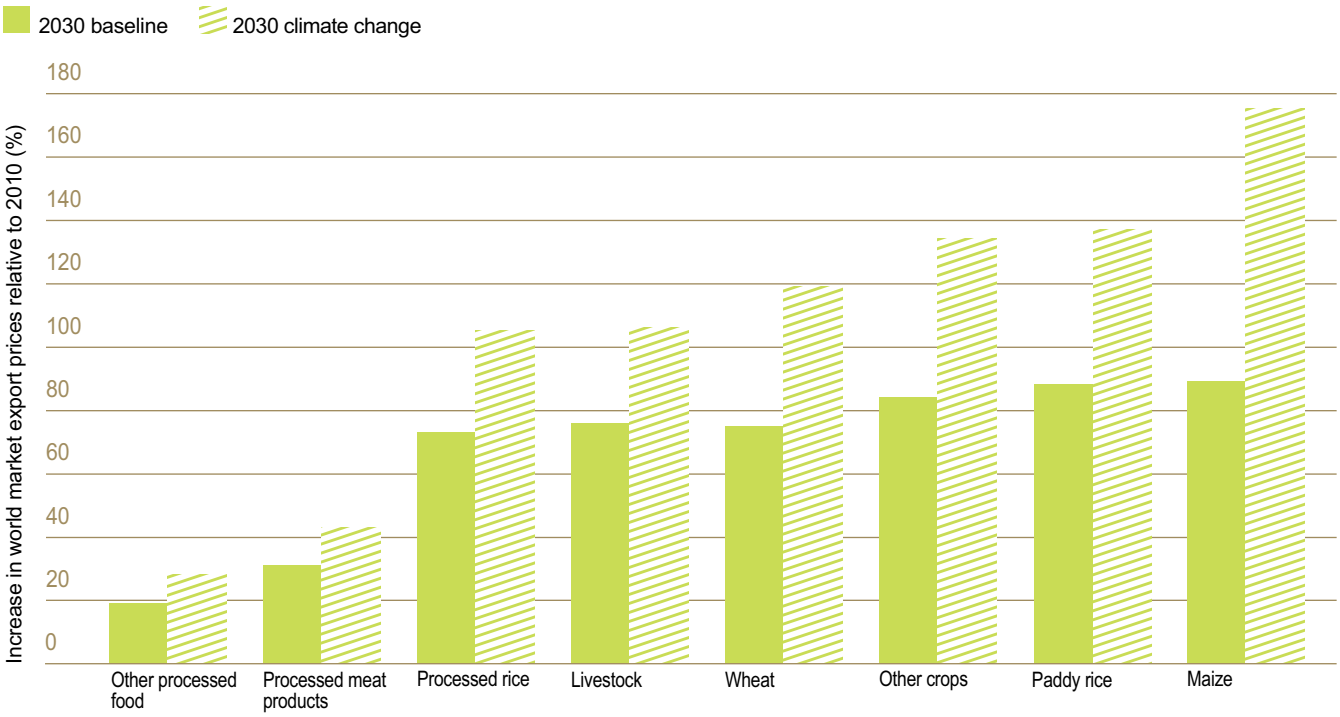

Regional price projections reflect underlying shifts in supply and demand. Figure 9 provides an insight into the magnitude of food staple price inflation for a number of crops and regions. In Central Africa, consumers of maize face the prospect of a 20 per cent increase in prices over the next decade, with an equivalent increase over the following decade.

In the Andean countries, wheat and maize prices will rise by 25 per cent to 2020; and, in the case of maize, by 65 per cent to 2030.

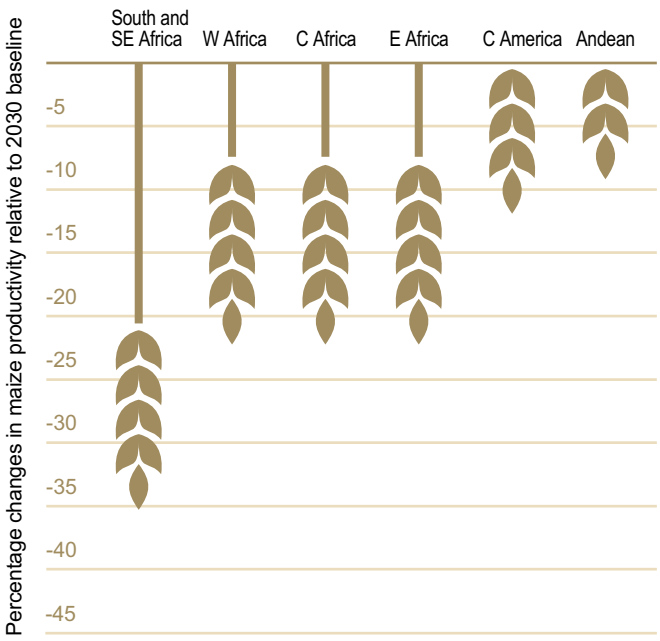
The bad news is that these are *good case* scenarios because they do not factor in climate change effects. Climate change is a potent risk multiplier in agriculture. Our projections capture the simulated impact of climate change on world prices for the major traded food staples (see Figure 10). In the case of maize, the incremental effect of climate change on price inflation is around 86 per cent. There are also marked effects for rice and wheat. In summary, these expected effects would wipe out any positive impacts from expected increases in household incomes, trapping generations in vicious circle of food insecurity.

Opposite: Rice sellers Sok Nain and Mach Bo Pha in Dem Kor Market in Phnom Penh. Sellers say their profits have fallen by 30 per cent as rice prices in Cambodia soared in 2008. (Cambodia 2008)

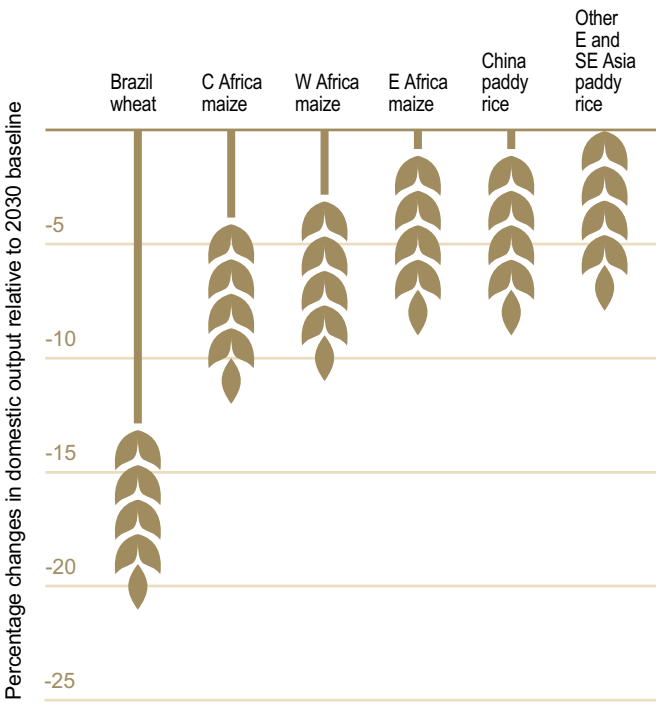
## Figure 10: Predicted impact of climate change on world market food export prices to 2030



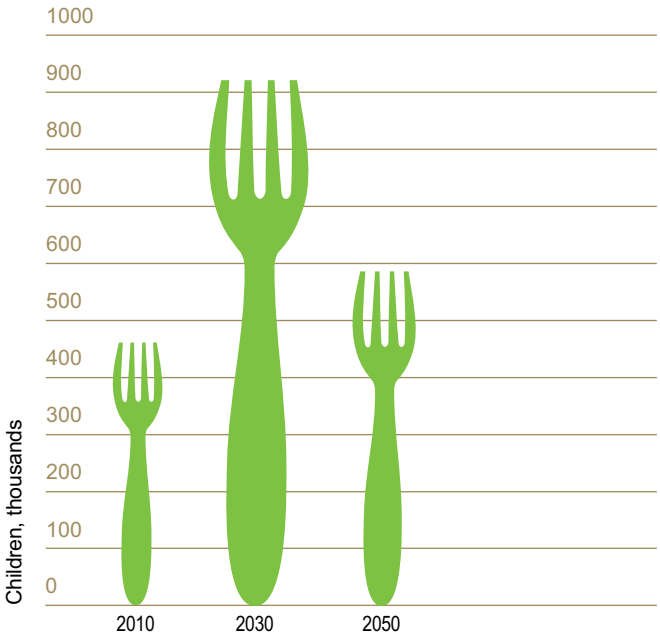

## Figure 11: The predicted impact of climate change on maize productivity to 2030




## Figure 12: The predicted impact of climate change on regional staple food production to 2030



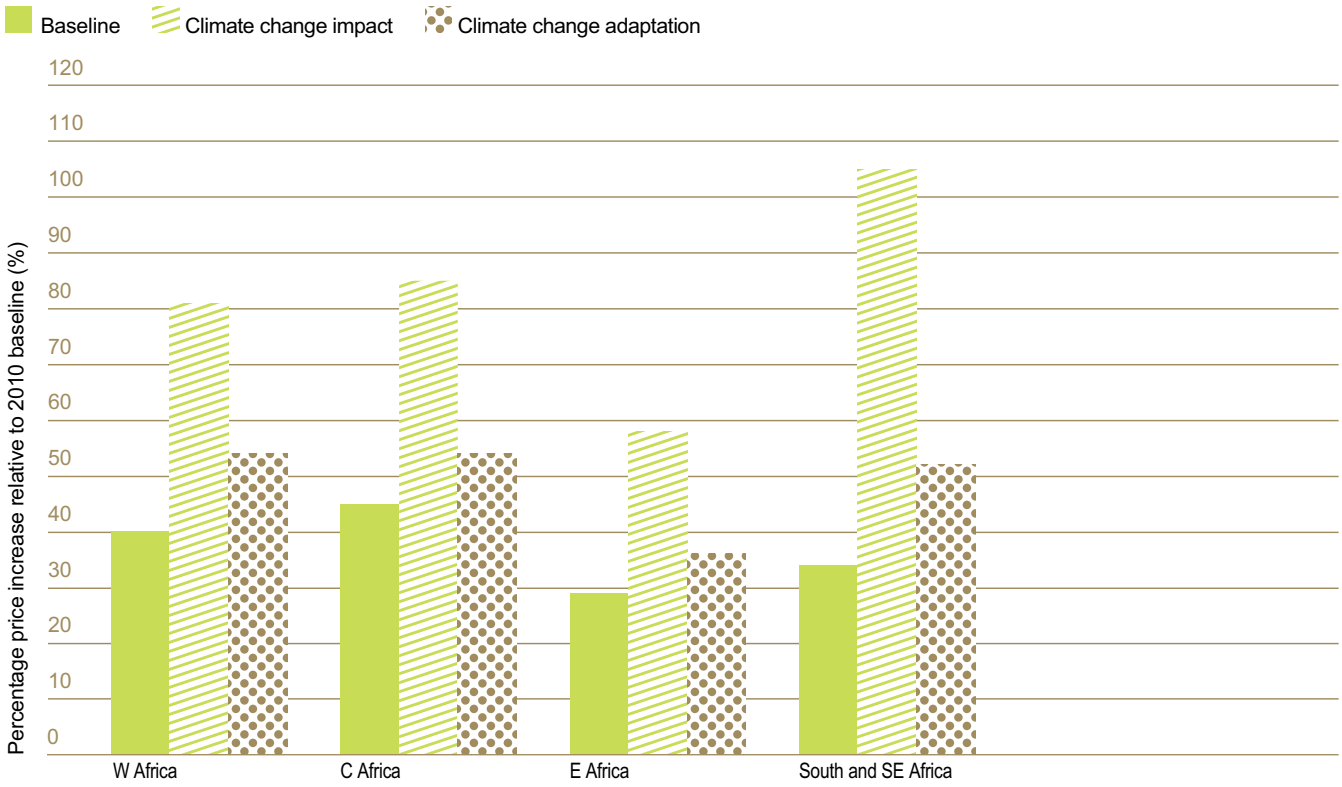

## Figure 13: The predicted increase in numbers of malnourished children in sub-Saharan Africa in the context of climate change




The impact of climate change on food prices is clearly closely linked to the impacts that climate change will have on crop production. Here too, our scenarios point towards some disturbing warning signals. Some of the major internationally traded grains included in our model are important food staples for a large group of low-income countries. For example, maize is a major staple across much of sub-Saharan Africa, Central America and the Andean countries. In each case, our scenario points to climate change damaging agricultural productivity (see Figure 11).

Climate change will have adverse effects on aggregate production volumes (Figure 12), as well as agricultural productivity (Figure 11), across all developing regions. Projections raise particularly worrying concerns for maize production in sub-Saharan Africa. Moreover, the trends captured in our scenarios to 2030 are consistent with long-term trend analysis carried out by IFPRI for a wider set of crops. That analysis points to a marked climate change effect in reducing yields of sweet potatoes and yams, cassava, and wheat by 2050 (respectively 13, 8, and 22 per cent lower than under a scenario without climate change).[62]

## Figure 14: Predicted dampening impacts of climate change adaptation on the price of maize




Ultimately, price and production scenarios are only as useful as the insights they provide into the threats facing vulnerable people, and the policy options for governments seeking to avert those threats. So what picture do our scenarios paint for the state of world hunger in 2050?

The relentless underlying pressure on the world food system and the risk multiplier effects associated with climate change raise the spectre of an early slowdown in the rate at which malnutrition is falling, followed by medium-term reversals in many countries. Inevitably, the affects will be uneven. Middle-income countries with strong economic growth and a diversified export base will be in a position to mitigate the transmission of world price inflation back to domestic markets. However, many low-income and lower middle-income countries are poorly placed to absorb the impact of higher food import prices.

Once again, sub-Saharan Africa faces some of the gravest threats. Higher prices will translate into depressed demand for food in a region that already has the world's lowest calorific intake. In a world without climate change, sub-Saharan Africa would still face problems in combating the hunger epidemic. Under a simple baseline scenario, child malnutrition levels would increase by around 8 million to 2030 and by 2050 would revert to the same level as at the turn of the 21st century – around 30 million. Adding in the effects of climate change would increase child malnutrition by just under one million (compared with no climate change) in 2030 (see Figure 13).[63]

It should be emphasized that the scenarios developed by Oxfam's commissioned research do not define the world's destiny. They highlight plausible outcomes based on business-as-usual scenarios. Other futures are possible. Strengthening national agricultural policies and reprioritizing agriculture within the international development agenda more generally would help to raise productivity among small-scale food producers, in turn ensuring that regional productivity keeps pace with population growth. Building a new international governance to avert food crises and respond more effectively when they occur will help shield food-insecure countries and households from future shocks. Unfortunately, inertia in the climate system means action to reduce greenhouse gas emissions today will be unable to significantly mitigate climate change *within the timescales modelled here*, but it *will* help prevent climate change having even more devastating impacts further in the future. In the face of unavoidable climate change over the coming decades, decisive action by rich countries to support climate change adaptation in the developing world is an urgent priority and will considerably ameliorate the level of food price inflation (see Figure 14), preventing millions of additional cases of malnutrition.

## Meeting the sustainable production challenge

Increasing production by 70 per cent within 40 years is a massive challenge, but entirely possible. The key is for rich country governments to resist their agricultural lobbies and remove the trade-distorting support measures which stifle investment where the real potential for increasing yields lies: the small farms of the developing world. Such a shift would free up huge budgetary resources, some of which could be redirected towards ODA for agriculture – kick-starting the rural renaissance needed.

Food availability food can also be increased massively by addressing waste – estimated at between 30 and 50 per cent of all food grown.[64] In rich countries, where around a quarter of the food purchased by households may be wasted,[65] consumers and businesses must change their behaviours and practices. In developing countries, where waste occurs post-harvest due to poor storage and transport infrastructure, governments must increase investment.

Pressures on land and water can be reduced through new practices and techniques that boost yields, use soils and water more sensitively, and reduce their reliance on inputs – techniques such as drip-feed irrigation, water harvesting, low- or zero-till agriculture, agroforestry, intercropping, and the use of organic manures. These would also significantly reduce the carbon footprint of agriculture.

Recent research commissioned by Oxfam simulating the evolution of the costs, income and profits of agroforestry systems in Bolivia demonstrates this.[66] These techniques achieved the objectives of forest conservation and climate change mitigation, presenting an alternative to the expansion of the agricultural frontier by soy and cattle farmers through deforestation. Moreover, the income of an average household involved in agroforestry is around five times larger than for any of their immediate alternatives (such as agriculture, small livestock farming or chestnut collection).

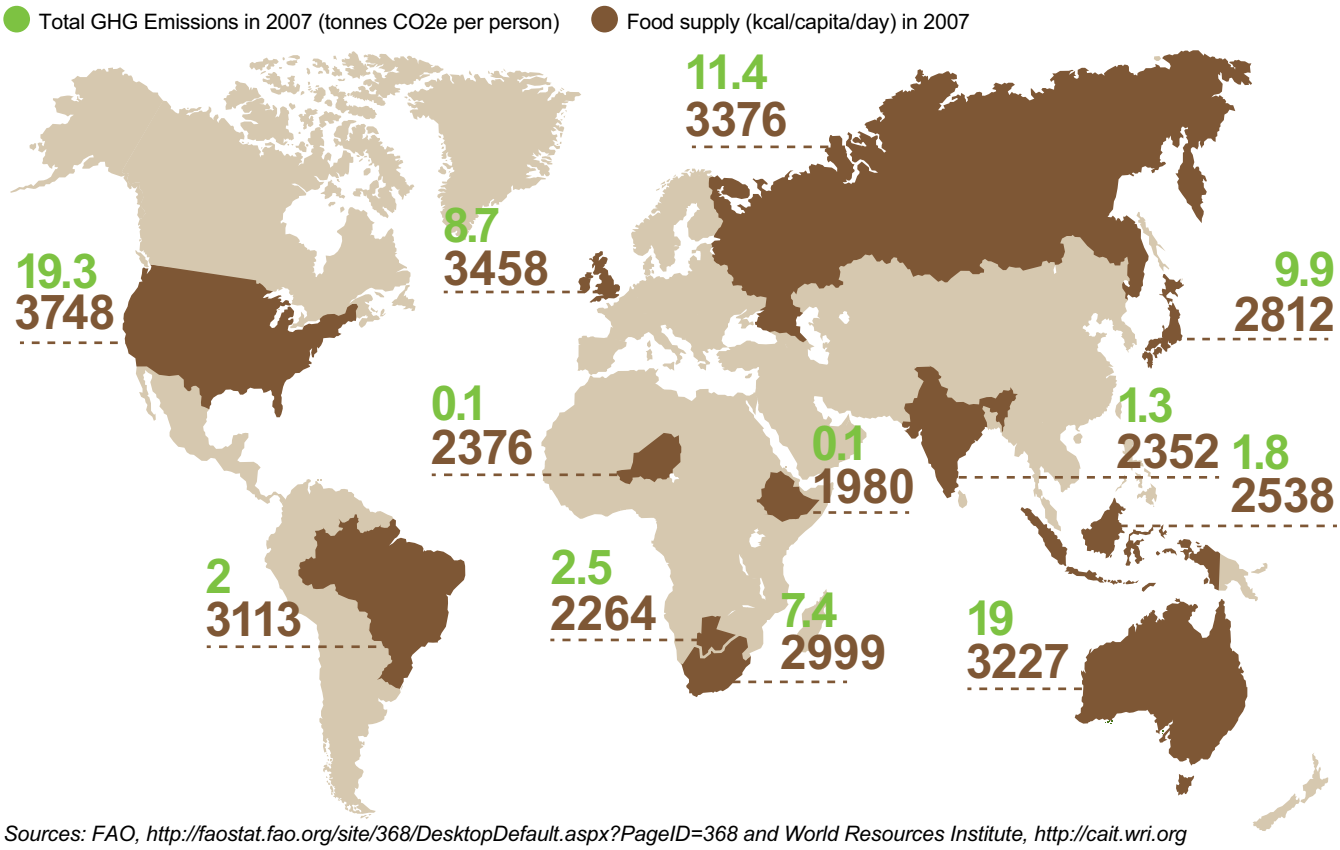
National governments can do much more to manage their scarce resources.

Pricing water for industry and commercial agriculture will force businesses and large farms to improve their efficiency. Removing subsidies that inadvertently encourage profligate water use – such as many provided to electricity generators – is also essential. Governments can invest in water management – a very attractive proposition, as estimates suggest that for every dollar spent, a country can expect eight dollars back in averted costs and increases in productivity.[67] And they can regulate investments in land to deliver wider social and environmental objectives: the respect of land rights, and the protection of forests and biodiversity.

Opposite: Noograi Snagsri now spends less time working in her fields thanks to the new integrated farming system where water is piped directly into the fields. In 2007 farmers in Yasothorn Province, north-east Thailand, experienced the longest dry spell in decades. (Thailand, 2010)

Right: Harvested palm fruit, the raw material for palm oil, used to produce various food stuffs, soap and biofuel.

**Figure 15a:** The food system is riddled with inequity: emissions and food supply




*Sources: FAO, http://faostat.fao.org/site/368/DesktopDefault.aspx?PageID=368 and World Resources Institute, http://cait.wri.org*

## 2.3 The equity challenge

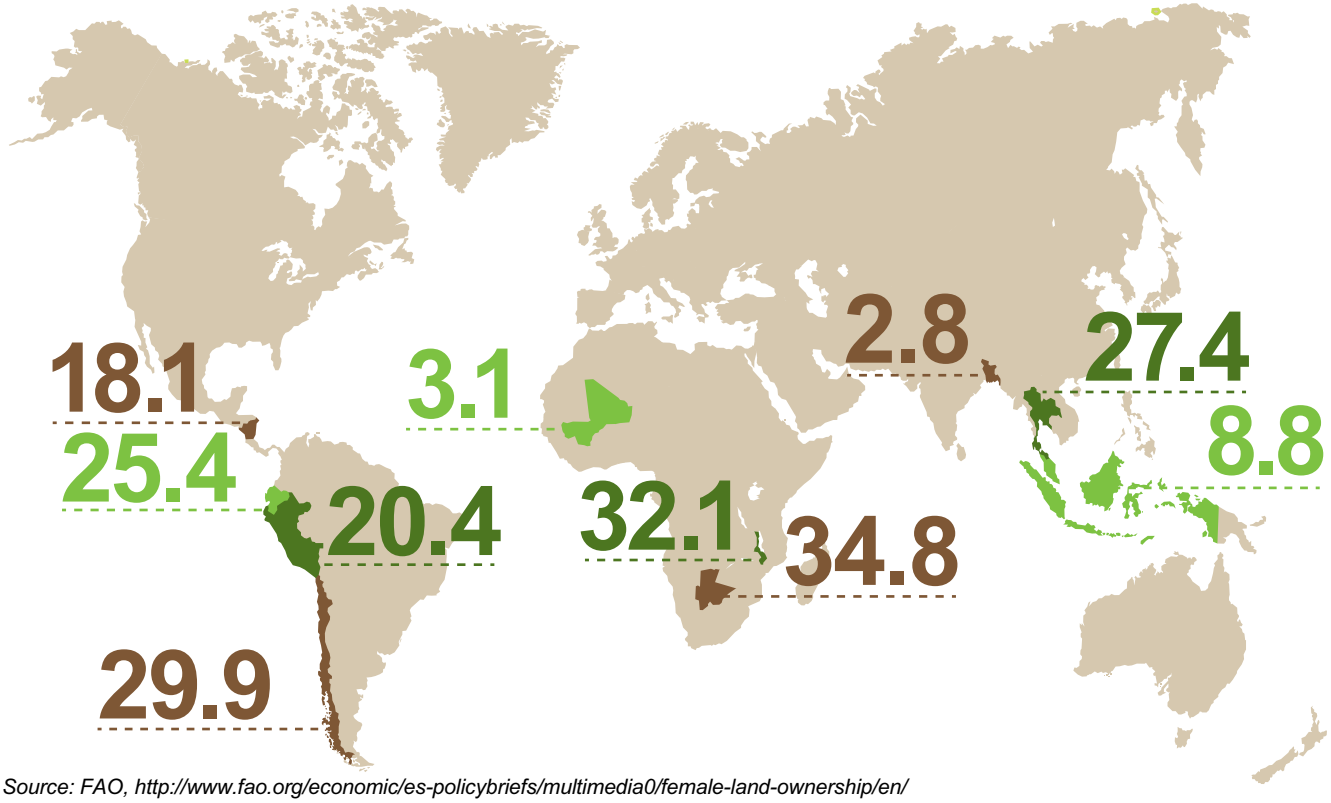
Almost one in seven people worldwide is chronically undernourished. After decades of slow decline, global hunger began to rise in the mid-1990s and soared during the 2008 food price crisis. Had the previous trend of slow progress been maintained, 413 million fewer people would be hungry today.

While the number of hungry people has thankfully dropped back from its 2008 high point of one billion, it remains higher than at any time before the crisis, and may well climb again in 2011 (see Figure 16).

Perhaps counter-intuitively, around 80 percent of hungry people are thought to live in rural areas, where most of them work as small-scale food producers: farmers, herders, fishers, or labourers.[68] (See Figure 17) They are surrounded by the means to produce food, and yet they go without.

## Figure 15b: The food system is riddled with inequity: women's access to land

Numbers represent % agricultural holdings headed by women (1996–2007)



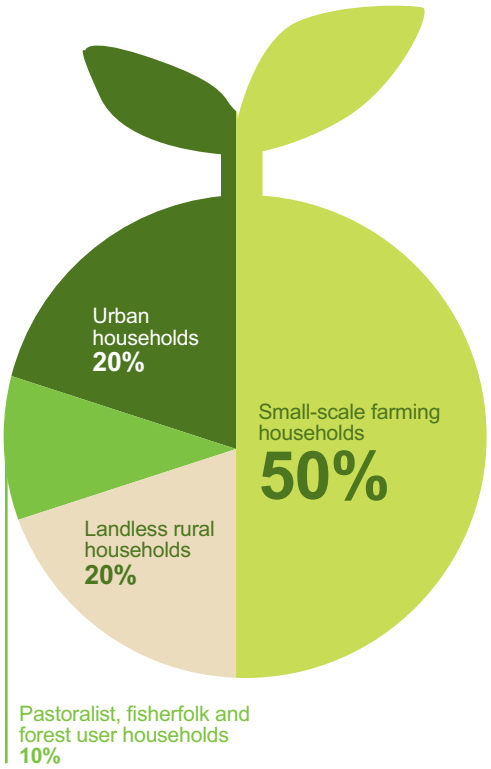

*Source: FAO, http://www.fao.org/economic/es-policybriefs/multimedia0/female-land-ownership/en/*

## Figure 16: The number of hungry people worldwide

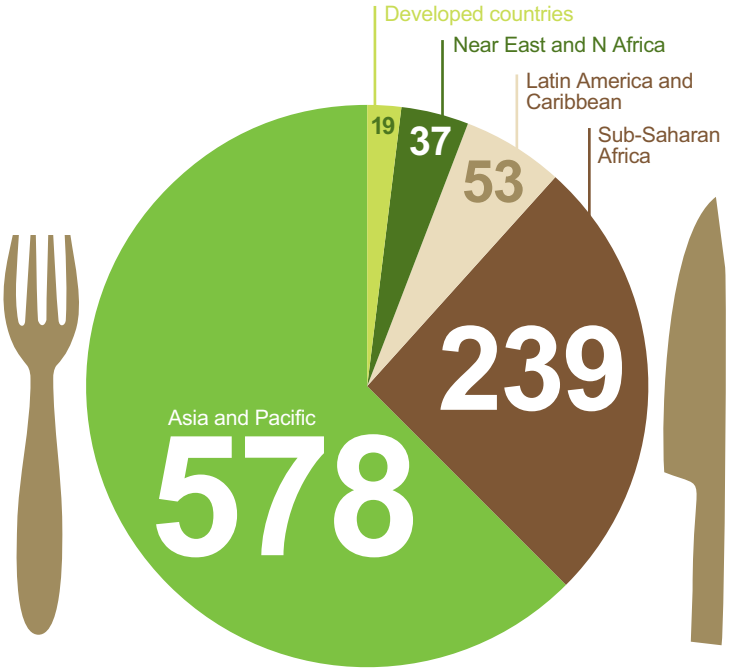

*Sources: FAO, http://www.fao.org/hunger and* Financial Times, *http://cachef.ft.com/cms/s/0/68b31de6-392e-11e0-97ca-00144feabdc0,s01=2.html*

## Figure 17: Where are the hungry people?

Undernourishment by household type (2005 estimate, %)




Undernourishment by region (2010, millions)




*Sources: UN Millennium Project, http://www.unmillenniumproject.org/reports/tf_hunger.htm; FAO, http://www.fao.org/hunger/en/ and http://www.fao.org/economic/ess/ess-data/ess-fs/ess-fadata/en/*

If geographically, hunger is concentrated in rural areas, within families, it is concentrated among women. When food is scarce, women are usually the first to do without. The consequences for maternal and child mortality rates are serious.[70] In many countries women play key roles in food production, yet cultural traditions and unjust social structures make them second-class consumers. These same factors conspire against them as producers, restricting their access to land, irrigation, credit, knowledge, and extension services.

Such discrimination is a violation of fundamental human rights. But it is also crazy to marginalize a major proportion of food producers. Estimates suggest that, by providing women with the same level of access to resources as men, they could increase yields on their farms by 20–30 per cent, in turn reducing the number of hungry people in the world by 12–17 per cent.[71]

## Access to land

Perhaps nothing illustrates the inequity at the heart of the food system more clearly than the case of land – the most basic resource of all. In the USA, 4 per cent of farm owners account between them for nearly half of all farm land.[72] In Guatemala (see Box 4) less than 8 per cent of agricultural producers hold almost 80 per cent of land – a figure that is not atypical for Central America as a whole.[73] In Brazil, one per cent of the population owns nearly half of all land.

If governments fail to provide secure access to land for their populations, then powerful local elites and investors are able to ride roughshod over local communities. In recent cases of large-scale land purchases, expropriations are the rule; the principle of free, prior, and informed consent is routinely ignored; and compensation is usually too low, if paid at all. Initial promises of development and jobs often evaporate: the land may remain idle, or the investment is highly mechanized, offering a few jobs to highly skilled males only.[74] A major World Bank study found that investors were targeting precisely the countries in which institutions were weakest.[75]

**Box 4: Guatemala tries and fails: the struggle for rural development**

The 2008 food price crisis wrought havoc among Guatemala's poor and hungry majority. Thanks to extreme inequalities – in income, access to land, and state support – even before the crisis 50 per cent of all children under five were malnourished, rising to 70 per cent among indigenous children.[69] A tiny elite makes its money from cash crops for export and by imposing punitive terms of trade on small producers.

The sudden rise in food prices presented the government with an opportunity to begin reform. Old legislation requiring landowners to allocate 10 per cent of their arable land to planting basic grains for national consumption was reintroduced. It lasted three days before being quashed.

Government and civil society groups then turned to a promising new law to promote food production and give small producers a better deal in supply chains. But the elites used media scare-mongering and backdoor pressure to paralyze the legislative process, and the proposed law was dropped.

'Case Study: Guatemala and the Struggle for Rural Development' www.oxfam.org/grow

## Women's access to land

In those developing countries for which data are available, women account for only 10–20 per cent of landowners.[76] They may be responsible for most food production, yet they face systematic discrimination in land tenure, which may be as overt as prohibitions against women being named as owners of land, as in Swaziland, or inheriting land.[77] Women are therefore more likely to rely on marginal tracts not registered as in production, and to which titles have not been granted – precisely the ones currently identified by governments and investors as 'available' for large-scale land acquisition.

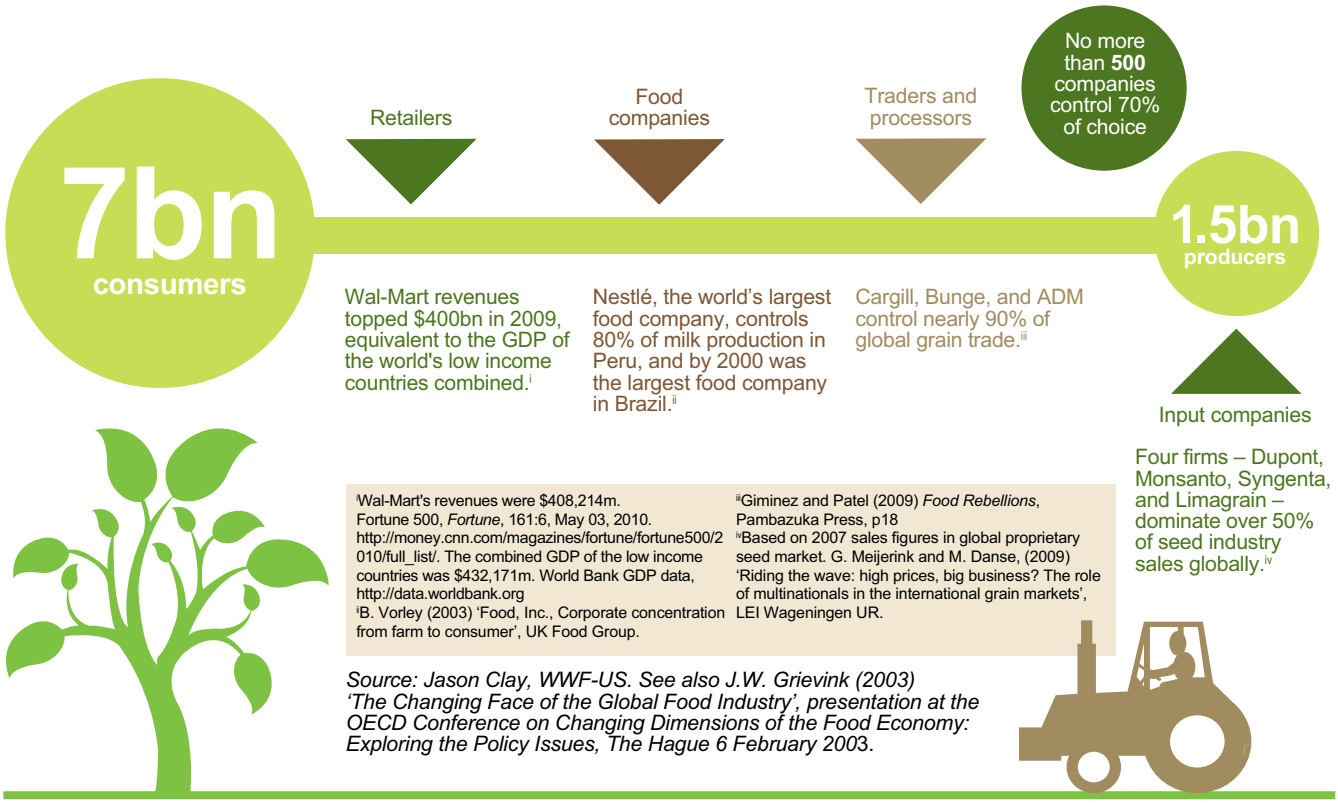
For the same historical and cultural reasons that women lack access to land, they are also routinely denied access to other basic resources – including finance and education. Ultimately, overcoming systemic and corrosive discrimination against women remains the real task for governments, companies, and societies.

*'In the case that your husband doesn't leave you anything, there's no opportunity to survive as a farmer. ... The only way to ... make a living here is to grow crops and raise cattle and you need land to do both these things. If you don't have land, you can't do these things and you can't survive.'*

Norma Medal Sorien, farmer and mother, Mexico

Right: Farmer Norma Medal Sorien. Norma has no legal right to farm the land, which belongs to her brother. But she feels hopeful because this is the first year of a drip-water project, funded by Oxfam, which will make irrigation more effective and reduce the amount of water used. (Mexico, 2010)

**Figure 18: Who controls the food system?**




## Access to markets

Selling a surplus allows poor farmers to earn an income, but rarely can they exercise any power in markets where middlemen, processors, aggregators, freighting companies and those controlling brands and distribution call the shots.

A few hundred companies – traders, processors, manufacturers, and retailers – control 70 per cent of the choices and decisions in the food system globally, including those concerning key resources such as land, water, seeds and technologies, and infrastructure.[78] By setting the rules along the food chains they govern – for prices, costs, and standards – they determine where most costs fall and where most risks are borne. They extract much of the value along the chain, while costs and risks cascade down onto the weakest participants – generally the farmers and labourers at the bottom.

The responsibility of the private sector in setting the terms on which people engage in markets cannot be overstated. Responsible businesses will respect people's rights to land, water, and other scarce resources. They will create trading relationships that return value to poor women and men through fair and stable pricing arrangements and will facilitate access to the necessary skills, credit, and infrastructure. And they will expect these standards of all participants in the chains they govern. Oxfam is developing a food justice index, which will assess companies against this standard of responsibility.

The focus of the index will be the largest traders and food and beverage companies. These will be ranked according to their policies and practices with regard to use of land and water resources, climate change, small-scale food producers and gender. The index will provide a tool with which to hold companies to account on their policies and practices, and influence the regulatory frameworks within which they operate.

## Access to technology

Corporations exercise enormous power at the 'input' end of the food chain: the production of seeds and agrochemicals. Globally, four firms – Dupont, Monsanto, Syngenta, and Limagrain – dominate over 50 per cent of seed industry sales,[79] while six firms control 75 per cent of agrochemicals.[80]

The research agenda of these companies focuses on technologies geared toward their biggest customers, large industrial farms which can afford the expensive input bundles the companies sell. Such technologies rarely meet the needs of farmers in developing countries, who in any case cannot afford them. Small-scale farmers' technology needs are ignored, despite the fact that they represent the biggest opportunity to increase production and combat hunger. The market is failing, and – with a couple of notable exceptions such as China and Brazil[81] – governments are failing to correct it.

Input companies invest in technology *products*, which can be bundled together and sold as a package – for example, Monsanto's Roundup herbicide and genetically modified Roundup Ready Soy. But what is really needed are technologies of *practice* – techniques not easily be packaged and sold, but which can deliver solutions to stagnating productivity and poor sustainability. Oxfam has seen this first hand in its work with farmers around the world. Recently in Azerbaijan, new sowing practices promise to double wheat yields and reduce seed usage by half.

The modus operandi of the companies also thwarts pro-poor, anti-hunger research by undermining the puplic institutions that serve a wider interest. Seed companies have amassed enormous 'patent banks' – claiming intellectual property rights over huge numbers of genetic traits and other 'innovations'. Public institutions, fearing litigation and lacking the resources to trace the web of patents or pay the licensing fees associated with them, are thus deprived of access to a key research tool.[82]

The misallocation of research and development (R&D) resources that results is mind-boggling. Monsanto's annual research budget is $1.2bn.[83] By comparison, the Consultative Group on International Agriculture (CGIAR), the world-leading group of centres that carry out R&D for developing countries, has an annual budget of just $500m.[84]

## Claiming rights

In the struggle to feed their families, people living in poverty are all too often exploited or marginalized by the huge power imbalances in the food system. But people can and do fight back, by joining together to claim their rights and increase their clout in markets. Labourers form unions to achieve more secure employment and better working conditions. Farmers form producer organizations and co-operatives to engage with markets and companies more assertively, reap economies of scale, and improve production standards. Female producers form women's organizations, as male-dominated producer organizations often fail to defend their interests or do not even allow them in. Consumers influence company behaviours through their purchasing decisions – such as through the Fair Trade, organic, or Slow Food movements – or more forcefully through consumer campaigns.

Such forms of organizing can quickly move from the economic and social spheres to the political. A new generation of producer organizations has taken off over the past two decades: in Burkina Faso between 1982 and 2002 the number of villages with such organizations rose from 21 per cent to 91 per cent,[85] while between 1990 and 2005 in Nigeria the number of co-operatives increased from 29,000 to 50,000.[86]

In the Philippines, a national movement of rural organizations and NGOs formed a remarkable alliance with state reformers during the 1990s, resulting in the redistribution of over a quarter of the country's land in the space of six years.[87] In Colombia, Oxfam supported a campaign by producer organizations that persuaded the Bogotá city council to start supplying city hospitals, schools, and other institutions with their produce – 2,000 small farmers are now benefiting.[88]

In India's impoverished Bundelkhand region, 45,000 fishing families in the Tikamgarh district fought back against the expropriation of their traditional fishing ponds by landlords and contractors, eventually winning legal rights to over 100 ponds.[89] The protests of hungry people in 61 countries across the world in 2008,[90] and the subsequent political changes that came about in a small number of these, demonstrate unequivocally the power of consumers, which governments ignore at their peril.

Women and men across the world are organizing to claim their rights and reform the broken food system from the bottom up – a global movement that is our best hope for meeting the equity challenge.

# 2.4 The resilience challenge

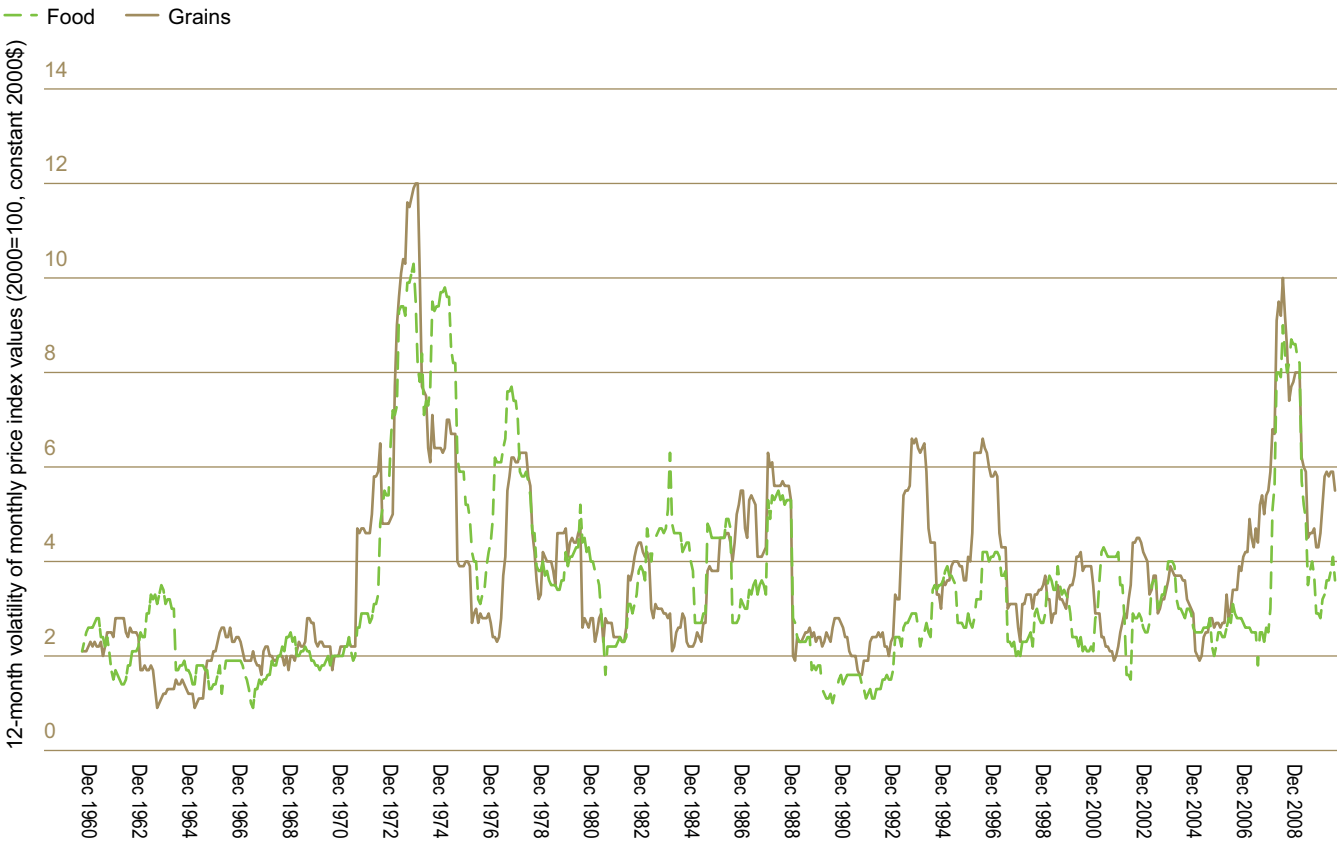
The creaking global food system has come under increasingly dramatic stress, with disastrous consequences for the most vulnerable. Volatile food prices have delivered two global crises in the space of three years, while in the background climate change relentlessly gathers pace.

## Increasing fragility

Who bears the brunt of increasing fragility in the food system is no surprise. Most vulnerable are countries with large populations of women and men living in poverty, and which depend on international markets for much of their food needs. Their food import bills increased by 56 per cent in 2007–08 compared with the previous year, which itself saw a 36 per cent jump.[91] The World Bank estimated that the 2008 price spike pushed over 100 million people into poverty, 30 million of them in Africa.[92]

The real costs are borne at the family level. Poor households spend up to three-quarters of their income on food,[93] making them extremely vulnerable to sudden price changes. In addition to the expected impacts – cutting back on food, struggling to pay health and education costs, taking on debt, or selling off assets – research on the tragic consequences of the 2008 crisis found increases in the abandonment of children and elderly people, crime, and risky sexual behaviour.[94]

**Figure 19: Increasing volatility of food prices**




*Source: Calculated from World Bank, http://data.worldbank.org/data-catalog/commodity-price-data*

**Box 5: Profits from volatility and volatility from profits**

Price volatility causes havoc for women and men living in poverty, but presents big opportunities for agribusiness firms, such as Cargill, Bunge, and ADM that according to one estimate control nearly 90 per cent of global grain trading between them.[95] In times of price stability, trading margins are razor-thin, but instability allows the largest traders to exploit their unrivalled knowledge of reserve levels and expected movements in supply and demand.[96] In the second quarter of 2008 Bunge saw its profits quadruple compared with the same period in 2007. The surge in crop prices during the second half of 2010 helped Cargill to its best results since 2008, which Chairman and CEO Greg Page attributed to a 'resurgence in volatility across agricultural markets'.[97]

Similarly, when the 2010 Russian wheat harvest failed, Bunge's profits ballooned and the company attributed the windfall to 'crop shortages related to the drought in Eastern Europe'. 'I hate to say we benefit,' said CEO Alberto Weisser in an interview.[98]

Some companies' activities create volatility in the first place, such as the diversion of food crops to biofuels. The biofuel lobby consists of an unlikely alliance of agribusiness, farmers' unions, energy companies, and input companies.[99] Its successful push for mandates for biofuel content in gasoline and diesel introduced inelastic demand into food markets, while the subsidies and tax breaks won by the biofuels lobby help transmit price movements from oil markets. Both result in increased volatility.

Attention has also recently turned to pension funds and other institutional investors, because many now aim to have 3–5 per cent of their investments – representing trillions of dollars – invested in commodities, including food commodities. The UN Special Rapporteur on the Right to Food and others argue that this sudden flood of demand is destabilizing and has contributed to price surges. Concerned that increasing volatility in food markets may pose risks to their portfolios, some investors, such as the French state pension fund FRR, the Dutch state pension fund ABP, and the California teachers' fund CalSTRS, have chosen to limit investments in commodities.

For poor farmers, the food price crisis brought an abrupt end to decades of artificially low prices, depressed by rich countries' agricultural dumping. Sadly, few could turn higher prices to their advantage because most were net consumers of food and nearly all lacked the resources to turn the threat into an opportunity. Price volatility and unpredictable weather discourage poor farmers from investing or taking risks, particularly since that may quite literally entail betting the farm.

Left: Suren Barman with the cow he was forced to sell. 'The price of essentials is excessively high. I cannot afford to buy food regularly. I am gradually selling my belongings to maintain my family.' (Dinajpur, Bangladesh 2008)

## Food prices gone wild

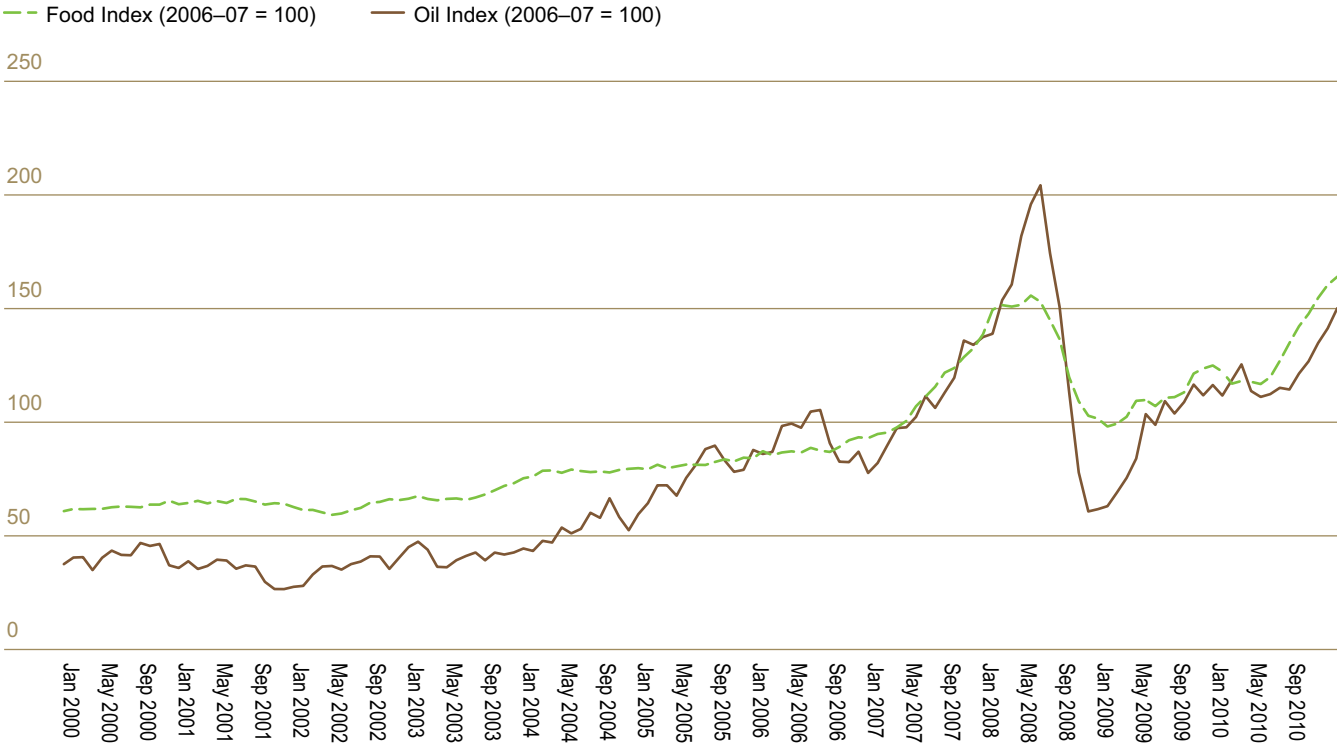
Certainly, the fundamentals that determine long-term food prices are shifting, especially rising demand in emerging economies, although it is not a convincing explanation for short-term price spikes. The dependency of the food system on oil for transport and fertilizers is a key factor in both, as oil prices are expected to rise in the long term and to become increasingly volatile (see Figure 20).

At the same time, food stocks have declined – in 2008 world stock-to-use ratios for wheat, maize and rice were at their lowest since the 1970s to early 1980s.[100] Without reserves to smooth supply, any shock is transmitted directly to prices. Recently, countries have started to panic buy on open markets in an attempt to build up reserves, introducing even more demand into the market. Nervous anticipation of the next crisis is exacerbated by a lack of transparency about the levels of reserves countries hold – nobody really knows how big anyone else's buffers are.

## Climate chaos

Supply shocks are already a problem, and will become a much bigger one as climate change gathers pace. Poor wheat harvests in 2006 and 2007 were identified by some as contributing factors to the last crisis. A record-breaking heatwave in Russia in 2010 reduced the country's wheat crop by 40 per cent,[101] prompting the government to impose export restrictions. Nobody knows what the shock next will be, or when and where it will hit. What if the 2010 heatwave had been centred on the American Midwest – the world's breadbasket – instead of Moscow? Lester Brown estimates that this would have pushed world carryover stocks of grain to below 52 days of consumption – far below the 62 days of stocks that set the stage for the 2008 crisis.[102] Other recent extreme weather – devastating floods in Pakistan and Australia, dry weather in Brazil, heavy rain in Indonesia – has pushed up international prices and disrupted national production.

**Figure 20: Food prices and oil prices are linked**




*Sources: Calculated from FAO, http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/ and US Energy Information Administration, http://www.eia.doe.gov/dnav/pet/PET_PRI_WCO_K_W.htm*

## Government failures

Faced with this alarming outlook, you might think that governments would take urgent action to address fragility in the food system. But up until now, governments have either ignored the problem or made it worse.

Although global investment in renewable energy now exceeds that in fossil fuels, most governments shy away from making binding commitments to reduce their greenhouse gas emissions. Instead, they offer voluntary cuts, collectively putting us on a course for a catastrophic 3–4 degrees of warming.

Governments often exacerbate volatility through their responses to higher food prices. In 2008 the global food system teetered on the edge of the abyss as, one after the other, more than 30 countries slapped export restrictions on their agricultural sectors in a giddying downward spiral of collapsing confidence.[103] Export bans reduce supply on the world market, driving up prices for food-importing countries.

Governments blame each other. In 2008 rich countries, most notably the USA, unleashed barrages of criticism against developing countries' export restrictions. All the while the USA was, and still is, imposing the mother of all export bans, but below the radar. The Renewable Fuel Standard (RFS), combined with tariff restrictions on imported ethanol, effectively mandates the diversion of huge amounts of the US maize crop to biofuel production. The USA is a crucial player in global maize markets, accounting for around one-third of worldwide production, and two-thirds of global exports.[104] Yet since 2004, the amount of maize diverted to biofuel has soared:in 2010 nearly 40 per cent of US corn production went into engines rather than stomachs.[105]

Biofuel mandates such as the RFS, or those of Canada and the EU, introduce into food markets major sources of new demand that are inflexible in the face of changes in supply, amplifying price movements. And by making crops a substitute for oil, biofuels facilitate price contagion between energy markets and food markets.

Food markets may also be increasingly linked to financial markets. Holdings in commodity index funds (the principal vehicle for pure financial investments in agricultural commodities) rocketed from $13bn in 2003 to $317bn in 2008,[106] as investors stampeded to a safe haven from capital markets in meltdown. Many observers argue that excessive speculation in commodities futures has amplified food price movements and may have played a role in the 2008 food price spike. The USA has taken initial steps to rein in excessive speculation in agricultural commodities and is considering further regulation.[107] The issue has also risen to the top of the EU's legislative agenda.

Some governments may have learned from their failures. French President and G20 Chair Nicolas Sarkozy has placed food governance squarely on the G20's agenda. When they meet in November 2011, G20 leaders will discuss agricultural investment, commodity speculation and international trade, presenting a real opportunity to avoid the mistakes of the past.

## A humanitarian system at breaking point

The world's system of humanitarian relief is stretched as never before. Between 2005 and 2009, donors covered only about 70 per cent of the emergency assistance requested in UN appeals. In 2010, the figure dropped to 63 per cent.[108] Demand for food aid could conceivably double by 2020,[109] yet the system is already buckling.[110] Because donors' budgets for food assistance are in monetary terms rather than tonnage, food price hikes erode their value.

In-kind food aid can provide a vital lifeline when food is unavailable, but often the food is there but is simply too expensive. In these cases, providing cash or vouchers is more efficient, and will not undermine the livelihoods of local producers and traders, as in-kind food aid often does. Yet donors continue to push a disproportionate amount of in-kind aid. Why? Because it suits vested interests in donor countries.

The USA is the world's biggest food aid donor, providing roughly half the world's food aid.[111] But its programmes deliver more to the pockets of agribusiness and shipping companies than to the mouths of hungry people. Rather than donating cash to humanitarian agencies, American taxpayers first pay their farmers to produce food, then pay a premium to buy it as food aid, and then pay another premium for it to be transported across the world (see Box 6). As the largest food aid donor, the USA sets a standard for others, and China, which has recently emerged as a major donor of food aid, appears to be following its lead.

Elsewhere, donors have taken bold steps to prise food aid from the clutches of special interests. In 2004, Oxfam Canada and the Canadian Foodgrains Bank, which provides food aid on behalf of 15 churches and faith-based agencies, mobilised their supporters to campaign for untying Canadian food aid, 90 per cent of which by law was sourced from Canadian farms. By September 2005, growing popular pressure gave politicians the opportunity to untie 50 per cent of food aid. Continuing momentum grew until food aid was untied completely in May 2008. Today, Canada chairs renegotiation of the Food Aid Convention, promoting similar reforms to food aid globally.

Untying food aid allows humanitarian agencies to tailor their response to the specific situation: where appropriate, purchasing food on local markets, or providing cash or vouchers so that people can buy their own.

Nor is the *way* humanitarian responses are funded appropriate for a future of increasing price volatility and climate chaos. Donors are nearly always asked for money only once a crisis is already under way, causing delays that could be avoided through a system of assessed contributions, such as that used to fund UN peacekeeping operations.

**Box 6: Food aid for whom, exactly?**

With the exception of 2009, over the past two decades more than 90 per cent of US food assistance has come in the form of subsidized crops grown by American farmers.[112] Yet only 40 cents of every taxpayer dollar spent on US food aid actually goes to buying food.

A big chunk goes straight into the pockets of US agribusiness companies. US legislation specifies that 75 per cent of food aid must be sourced, bagged, fortified, and processed by US agribusiness firms with contracts from the United States Department of Agriculture (USDA). Bidding processes are dominated by only a few corporations, leading to payments on average of 11 per cent above market rates, and up to 70 per cent over the odds in the case of corn.

After the food is purchased, US shipping companies get their turn. Under law, the food must be processed and freighted by American companies on US-flagged ships at taxpayer expense. Nearly 40 per cent of total food aid costs are paid to US shipping companies, where again, restricted bidding limits competition and pushes up prices.

Such aid takes longer to reach those in need. During 2004–08, US food aid to Africa required an average of 147 days for delivery, compared with 35–41 days for food from the African continent.[113] And in situations where shipping food aid from the USA would be an appropriate response, Oxfam estimates that procuring transport on the open market would allow the American taxpayer to provide 15 per cent more food,[114] enough to feed an additional 3.2 million people in emergency situations.[115]

*Source: Barrett and Maxwell (2008)* Food Aid After Fifty Years: Recasting its Role

## National level action

Ultimately, national governments are accountable to their citizens for ensuring their right to food. The dysfunctional international system only increases their responsibility to do so. In the face of climate change, increasing resource scarcity, and food price volatility, governments can and must do more to build the resilience of their populations.

As a first step, governments must invest in agriculture – to improve infrastructure, extend access to productive resources, and ultimately to increase food production and incomes in rural communities where hunger is concentrated. As the examples of India and Brazil show (see Box 7), economic growth is no panacea – growth must be accompanied by broad-based job creation and social transfers if hunger is to be reduced.

Governments must also prioritize climate change adaptation. Their ability to make the needed investments, however, is undermined by the failure to date of rich countries to pin down details of their $100bn a year pledge for climate financing. Nor is current financing much help – recent estimates suggest that as little as 10 per cent is actually being channelled towards adaptation,[116] while most of the $30bn of Fast Start Finance agreed at Copenhagen has turned out to be old aid money, recycled, repackaged and renamed.

If properly planned and adequately funded, adaptation will also help deliver on other challenges. For example, improving crop storage can help meet the sustainable production challenge, while strengthening safety nets and ensuring equitable access to land can help contribute to the equity challenge. Scaling up social protection systems is another crucial strategy in the government tool box. Cash transfer programmes, employment guarantee schemes, weather-indexed crop insurance, and social pensions – all can help vulnerable populations better cope with shocks. Yet today, 80 per cent of the world's population lack access to social protection of any kind – leaving them without a safety net just as risks are multiplying.[117]


Right: US food aid: at a government food distribution centre, a sack of corn-soy blend waits for distribution. (Ethiopia, 2008)

Opposite: Weighing rice at the Gor Khamhi centre for the Public Distribution System. While an important safety net for hungry people, India's Public Distribution System (PDS) doesn't properly satisfy the calorific needs of vulnerable rural communities. (India, 2011)

**Box 7: A tale of two BRICS**

They may both be members of the BRICS group of emerging economies, yet on the question of hunger, Brazil and India are poles apart. Despite more than doubling the size of its economy between 1990 and 2005,[118] India failed to make even a tiny dent in the number of hungry people. In fact, it increased by 65 million[119] – more than the population of France.[120] Today, about one in four of the world's hungry people lives in India.[121]

In Brazil, however, where economic growth has been slower, hunger has been rolled back at an incredible pace – the proportion of people living in hunger almost halved between 1992 and 2007. [122]

Why this marked difference? There are, of course, many factors at play, but ultimately it comes down to government failure in India and government success in Brazil, where a purposeful political leadership was buttressed by a strong citizens' movement led by people living in poverty.

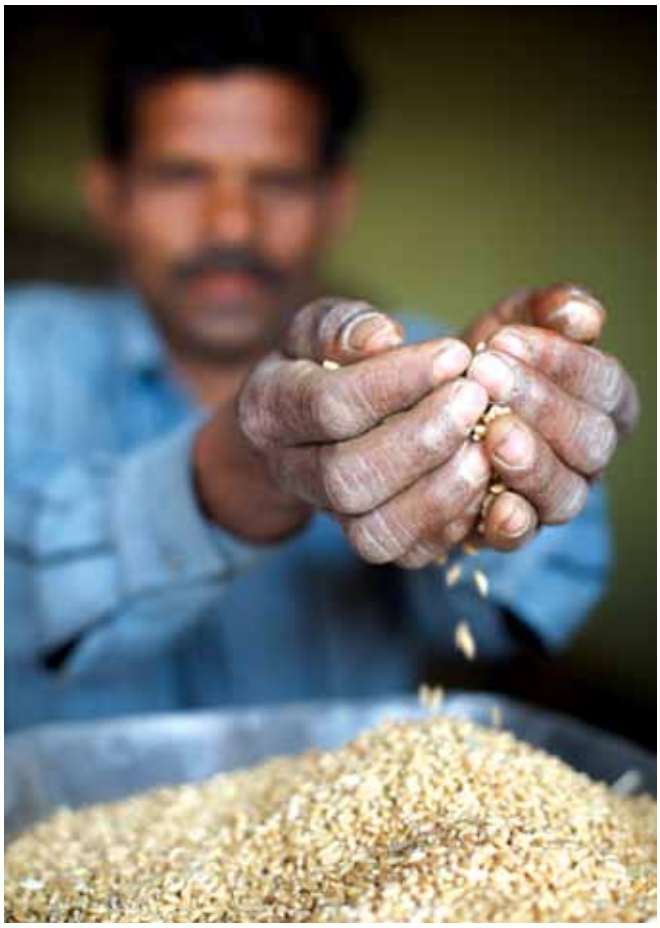
In India, the government has presided over a long period of unequal growth concentrated in the services sector and urban areas, despite the fact that the majority of poor and hungry people live in rural areas. Had the government undertaken effective redistribution, then hunger could still have been reduced. Sadly, India failed to prioritize hunger or develop a coherent strategy. Ambitious initiatives such as the National Rural Employment Guarantee Act to provide 100 days of paid work to rural men and women, or a massive fertiliser subsidy programme, have been unable to make inroads without sufficient political buy-in and support.

In Brazil, the opposite was true. A national cross-sectoral strategy – Fome Zero (Zero Hunger) – launched in 2003, consisted of 50 linked initiatives ranging from cash transfers for poor mothers to extension services for small-scale food producers. Crucially, Fome Zero was championed by then President, Luiz Inácio Lula da Silva, which ensured the buy-in across government necessary to deliver such a broad agenda.

Although the benefits were realized quickly, Fome Zero was a long time coming; the result of 20 years of activism from Brazilian civil society and social movements. They organized and challenged, and helped expand the political horizon, electing politicians with the vision to make a difference.[123]

'Case Study: Brazil's Strategies to Reduce Hunger' www.oxfam.org/grow

'Why India is Losing its War on Hunger' www.oxfam.org/grow



## Time to rebuild

The broken food system is exacerbating the very drivers of fragility that make it vulnerable to shocks. It is locked in a dance of death with the age of crisis it helped to create.

Happily, most of the solutions are known, and many necessary changes are already underway, led by growing numbers of consumers, producers, responsible businesses, and civil society organizations. Overcoming the vested interests at the heart of the system will be the single greatest challenge. History shows that justice tends not to come about through the benevolence of the powerful. Decolonization and independence, the creation of welfare states, the spread of universal suffrage, the creation of international governance: all have been won through struggle and conflict, often linked to destabilizing shocks or periods of flux. The age of crisis is a terrible threat, but also a tremendous opportunity. The prize: a new prosperity in which everyone can have a fair share.

# 3

# THE NEW PROSPERITY

# 3.1 Growing a better future

We know from experience that a more equitable and sustainable kind of human development is possible. Now, from the failing food system to wider social and ecological challenges, the dominant model of development is hitting its limits. The prospect of hundreds of millions more hungry people and billions forced closer to the breadline in the coming years are a wake-up call to us all: it is time to change course.

'More-of-the-same' development demands ever more of our small world's ultimately finite resources. It takes a laissez-faire approach to markets, expecting them to deliver social progress in a way they never can without big shifts in public incentives, regulation and investment. It permits global systems to spin out of control, and vested interests to privatize benefits and socialize costs.

More-of-the-same development obsesses about a narrow notion of economic activity, ignoring the stock of human, social and natural assets. It leans heavily on the false hope that corporations will somehow magically deliver technological fixes to all the challenges we confront. And it fails to see the practical and democratic promise of shared solutions with a human face.

Some elites will be the last to acknowledge the bankruptcy of a model whose benefits they have monopolised. But growing numbers are waking up to the challenge of our generation, and to the exciting opportunities of a transition to a new prosperity.

In this age of interdependence, more efficient, equitable and resilient forms of human development are for the first time not only desirable. They are essential.

We face three interlinked challenges in an age of growing crisis: feeding 9 billion people without wrecking the planet; finding equitable solutions to end disempowerment and injustice; and increasing our collective resilience to shocks and volatility. No 'silver bullet' technology or policy will make these challenges vanish.

The good news is that practical solutions are both urgent and available – from simple common sense acts we can all take, to bold shifts in how we manage shared resources and value social progress. They are good for producers, good for consumers, and good for the planet. Their benefits can be shared by the many, not just the few, and they are built to be resilient in the long run.

Growing a better future will take all the energy, ingenuity and political will that humankind can muster. If the best solutions are to win out, we must mount powerful campaigns to win significant reforms in how our societies manage common threats and resources and create platforms for opportunity. From global negotiations to national decision making, we must work for three big shifts:

- First, we must build a new global governance to avert food crises. Governments' top priority must be to tackle hunger and reduce vulnerability – creating jobs and investing in climate adaptation, disaster risk reduction, and social protection. International governance – of trade, food aid, financial markets, and climate finance – must be transformed to reduce the risks of future shocks and respond more effectively when they occur.
- Second, we must build a new agricultural future by prioritising the needs of small-scale food producers in developing countries – where the major gains in productivity and resilience can be achieved. Governments and businesses must adopt policies and practices that guarantee farmers' access to natural resources, technology and markets. And we must reverse the current gross misallocation of resources which sees the vast majority of public money for agriculture flow to agro-industrial farms in the North.
- Third, we must build the architecture of a new ecological future, mobilising investment and shifting the behaviours of businesses and consumers, while crafting global agreements for the equitable distribution of scarce resources. A global deal on climate change will be the litmus test of success.

# 3.2 A new governance for food crises

As we lurch uncertainly into the age of crisis, facing our second global food price spike in three years, more must be done to build resilience and manage the climatic and economic risks looming on the horizon.

## International reform

As the global food system becomes increasingly volatile and unstable, the risk of a slide into a zero-sum world of resource nationalism – a contest that women and men living in poverty would be guaranteed to lose – becomes more real. Alternatively, the world could move decisively towards a more just, resilient, and sustainable globalization – but only if it tips decisively towards international co-operation rather than competition.

Today's international system – fragmented, ad hoc, low on legitimacy, and high on gaps and friction between governments and institutions – is not yet up to the task of co-ordinating and delivering this outcome. Reform can begin today, with a number of immediate measures to reduce risks, improve co-ordination, and build trust, setting into motion a process of evolution towards a new system of governance that can both mitigate against and manage the shocks coming down the line.

During the 2008 food price crisis, co-operation was nowhere to be seen. Governments were unable to agree on the causes of the price rises, let alone how to respond. Food reserves had been allowed to collapse to historic lows. Existing international institutions and forums were rendered impotent as more than 30 countries imposed export bans in a negative-sum game of beggar-thy-neighbour policy making.[124]

Now with food prices back at a new all-time high, a range of urgent actions is needed.

**1. Manage trade to manage risk**

***Build a system of multilateral food reserves***

One of the reasons that food prices hit such highs in 2008 is that markets were trading so thinly: because reserves were at all-time lows, changes in supply and demand were borne entirely by the price mechanism. Panic buying by governments on international markets, as import-dependent countries seek to build up national stocks, could all too easily worsen the very volatility that it is trying to defend against. Instead of acting unilaterally, governments should work collectively to establish regional food reserves and strategic cross-border trading systems with each other – an approach that creates resilience against volatility while reducing the risk of governments competing against each other.

***Increase market transparency***

The tendency of governments to panic buy and horde is in large part a consequence of poor market information: market participants have very little reliable information on the levels of stocks held by governments or private sector traders. Mandating the FAO, for example, to collect and disseminate aggregated data on stocks, reserves and anticipated supply and demand would help markets to function better.

***Co-ordinate to tackle export restrictions***

Current global rules on food export restrictions are at best modest. Prima facie, such restrictions are banned under the GATT and the WTO Agreement on Agriculture, but in practice vaguely worded and untested exemption clauses allow countries to impose them whenever they like. Revising international trade rules will take time, however, and given the recent resurgence in the use of export restrictions – for example, Russia's ban on wheat exports in summer 2010 – urgent action is needed. Major food exporters ought to publicly commit to refrain from imposing sudden export restrictions, and also commit to exempting humanitarian aid from any such restrictions. This option is already on the agenda for France's G8 and G20 chairmanship in 2011, and should be a top priority for member states.

Overleaf left: Osvaldo Penaranda, 48, with his tomato plants on the elevated seedbeds (camellones). Flooding is increasingly unpredictable in this area of the Amazon Basin. (Bolivia, 2007)

Overleaf right: Noograi Snagsri now spends less time working in her fields thanks to the new integrated farming system where water is piped directly into the fields. In 2007 farmers in Yasothorn Province, north-east Thailand, experienced the longest dry spell in decades. (Thailand, 2010)

***Dismantle support for biofuels***
Support measures for biofuel programmes currently cost about $20bn a year, and this is set to more than double by 2020.[125] Dismantling support measures such as blending and consumption mandates, subsidies, tax breaks, and import tariffs would be good for taxpayers and great for food security.

***Stop trade-distorting agricultural subsidies***
As obscene as biofuel subsidies are, they pale in comparison with the vast sums of money spent in rich countries to support their agricultural sectors. Where these measures distort trade – by restricting market access or by incentivizing over-production and dumping – they directly undermine the development of resilient agricultural sectors in poor countries. Far from reducing the importance of OECD agricultural liberalization, soaring food prices make it more important than ever. At the same time, poor countries need the freedom to determine the extent and pace of their own agricultural market opening.

**2. Reform food aid**

The measures outlined above will help the international community build resilience and mitigate against and manage future crises. But crises will still happen, particularly as climate change continues to gather pace. Without reforms to the way in which food aid is raised and delivered, the strain on the humanitarian system risks becoming unbearable.

The provision of adequate, obligatory, and predictable funding in advance would free humanitarian agencies from frantic fundraising and allow them to be far better prepared. Adequate resources must be available in advance to cover emergency responses, rather than the current system of passing around the hat once a crisis is under way. The international community must move to a system of 100 per cent funding for humanitarian emergencies, via upfront 'assessed contributions'.[126] Other mechanisms to insulate funding from food price rises through hedging or insurance should also be developed. Funding could even move onto a basis of calories rather than dollars – to match precise nutritional needs and to insulate it from price movements.

Breaking the stranglehold of the farm and shipping lobbies on the food aid system would massively increase efficiency and allow agencies the flexibility to pursue more appropriate relief strategies such as cash and voucher distributions, or local purchasing, such as the WFP's Purchase for Progress (see Box 8).[127]

**Box 8: Building resilience and improving food aid in Ethiopia**

In a region recently plagued by drought, sacks of maize stuffed to bursting and piled to the ceiling of a warehouse in Shashemene, Ethiopia, are a welcome sight. But what the blue World Food Programme logo on the sacks doesn't tell you – and which makes this stock of white corn even more remarkable – is where it comes from.

This corn was grown right here. By small farmers in the West Arsi Zone. The World Food Programme's Purchase for Progress Pilot Programme (P4P) was designed to source food aid in local markets in order to provide livelihood opportunities for poor farmers, while addressing the immediate food needs of hungry people. WFP plans to buy up to 126 tonnes of food from Ethiopian farmers over the next five years – to feed Ethiopians.

WFP sources some of this food from a union of 'grain banks' supported by Oxfam in West Arsi. A grain bank is owned and managed by its members, who pay a small fee to join. Following the harvest, banks buy grain from the members at a fair price, holding onto some of it for emergencies and selling the rest at the best rates they can get, including to WFP. Members can divide the profits among themselves or reinvest in the bank. The banks allow farmers to pool their resources to access better market opportunities, and to build up safety buffers for when times are hard.

'We have a stock in our bank and our members are not starving like other people,' said the bank's storekeeper at the time. 'Our experience in the past three years has shown us we can make progress in our lives.'

*Source: Oxfam America*

'Sowing the Seeds of Self-Reliance in Ethiopia' www.oxfamamerica.org/publications

Finally, in an age of crisis, it is essential that humanitarian operations must help go beyond traditional reactive approaches and integrate longer-term programming and disaster risk reduction approaches to rebuild people's assets and address chronic vulnerability. In essence, donors and humanitarian agencies must get better at staying the course, rather than packing up and shipping out once the immediate crisis has receded.

### 3. Regulate commodity speculation

A precautionary approach to speculation in food commodities is needed. Governments can curb excessive speculation while still enabling the legitimate risk-mitigation and price-discovery role of futures markets. Options include requiring increased transparency to allow regulators to monitor speculators and limit their activities if necessary. Price limits can reduce short-term volatility, and position limits can prevent excessive bets on price movements. Limits could be set initially at modest levels and gradually tightened, allowing regulators to monitor for any adverse consequences such as poor liquidity.

Following on progress in the USA, proposals to regulate trading in commodity derivatives are on the agenda of the G20 in 2011, as well as the EU.

### 4. Operationalize and capitalize a new global climate fund

Adaptation is an urgent priority in developing countries, but the resources needed – Oxfam estimates $100bn a year by 2020 – are scant. Moreover, the institutional framework for delivering climate finance is a spaghetti bowl of multilateral and bilateral channels, massively increasing transaction costs for developing countries trying to access the meagre funds available. This has to change – the new global climate fund agreed at the international climate talks in Cancun in 2010 must be up and running as soon as possible. Agreement on a set of innovative mechanisms to raise money for the fund, such as a financial transactions tax or levies on international aviation and shipping, remains a critical priority and is on the agenda of the G20 in 2011.

## National approaches

In addition to investing in agriculture, national governments can do much to build resilience and reduce vulnerability.

### 1. Invest in climate change adaptation

Perhaps the most urgent task for national governments is to help communities adapt to climate change by reducing vulnerability and climate-proofing infrastructure. As a priority, developing country governments must map vulnerability and develop national adaptation plans that prioritize the most vulnerable people. These efforts must be matched by support from the international community – in the form of new and additional public finance.

**Box 9: Successful adaptation to climate change in Thailand**

In 2007 farmers in Yasothorn Province, north-east Thailand, experienced the longest dry spell during a rainy season in decades. Yasothorn, one of the ten poorest provinces in the country, is part of the 'Weeping Plain', named for its barren landscape. The plain's dry conditions have made it suitable for growing fragrant jasmine rice.

The drought was part of a trend. Rainfall records show rains arriving later and later each year, caused at least in part by climate change. Working with local organization Earth Net Foundation (ENF), Oxfam initiated a pilot climate change adaptation project involving 57 men and women from the 509 organic farming households in the province.

Participants received full information on the state of climate change in Yasothorn, and shared ideas about how to adapt. They then designed their own on-farm water management systems, including storage ponds, wells, ditches, sprinkler systems, and pumps – and built them with help from a small ENF loan fund. The farmers also grew vegetables and planted fruit trees.

The following year, Yasothorn was again hit by drought – the 'worst in 57 years', according to one village elder. Excessive rainfall then drowned much of the remaining crops at harvest time. The project farms' overall rice production fell by almost 16 per cent – but things were worse on non-participating farms, where production fell by 40 per cent overall.

*Source: Oxfam research*

'Case Study: Jasmine Rice in the Weeping Plain'
www.oxfam.org.uk/resources

Left: A windmill pumps water to a storage tank to supply Manoon Phupa's farm. In 2007 farmers in Yasothorn Province, north-east Thailand, experienced the longest dry spell in decades. Oxfam has worked with local organization Earth Net Foundation since 2004, to promote organic agricultural production and fair-trade marketing with farmers. (Thailand, 2010)


**2. Expand social protection**

At the height of the 2008 food price spike, many developing country governments – faced with spiralling hunger and discontent – reached for policy options that only made the problem worse. Forty-six developing countries used economy-wide subsidies or price controls to try to contain food prices – responses that can reduce the incentives for food producers to increase output, or place crippling burdens on government budgets.[128]

Social protection programmes tailored to the specific national context can target resources to the most vulnerable people, which are likely to include women and rural producers more generally. In the most sophisticated cases, like Brazil's very successful Fome Zero (Zero Hunger) programme, different approaches are blended into a massive across-the-board push to reduce hunger. Ultimately, governments should aim to establish universal programmes, which tend to be more efficient and by definition protect more people.

Today only 20 per cent of the world's people enjoy access to social protection of any kind – a scandalous gap, yet an improvement upon the situation only a few years ago, largely due to the expansion of provision in China and Brazil. [129] Even in these cases, the measures often lack permanence. The big gaps are in low-income countries, where social protection tends to be donor-led pilot programmes rather than nationally owned approaches.

Predictable funding from aid donors, in the form of direct budgetary support, would allow governments to implement national programmes. Technical support may also be necessary but, critically, approaches must fit specific national circumstances, as there are few off-the-shelf solutions.

Without leadership from within government, no amount of donor support will deliver effective social protection. All too often, politicians shy away from ambitious programmes for fear of long-term fiscal commitments (ignoring the broader economic benefits that will be delivered) or worry that they will simply create dependency (which is not supported by the evidence).[130]

A shared goal, for governments and international institutions, should be universal access to a basic level of social protection sufficient to realise fundamental economic and social rights, including the right to food. The UN Social Protection Floor Initiative[131] provides a perfect platform around which to coalesce.

*'The crèche has been a huge benefit to the people of this community. It allows women to look for part-time work and is providing a really good start to their children's education. The children also get free, nutritious meals, which is a godsend for parents who are unemployed and who struggle to provide regular meals for their family.'*

Eline Carla Machado, Head of the Vila Irma Dulce Crèche, Brazil

Above: Roni, Marta, and Denilson eating their free lunch at the Vila Irma Dulce Creche, Brazil. The community lobbied for the school, the teachers, and the free lunches for the children. (Brazil, 2004)

### 3. Develop integrated hunger strategies

Growth is not necessarily inclusive. One of the reasons India has failed to tackle hunger so spectacularly despite impressive growth is because job creation and rising incomes were not broad-based (see Box 7). Recent research indicates that the majority of the world's poor people live not in the poorest countries, but in middle-income ones[132] – left behind by the economic 'miracles' that have driven *average* incomes higher and higher.

Viet Nam chose a different path, developing a national Hunger Eradication and Poverty Reduction Programme in 1998 to eliminate chronic hunger and reduce inequality. By 2010, the country had halved hunger levels – achieving the first Millennium Development Goal five years ahead of schedule.[133] The take-off started earlier, however, with land reform and the pursuit of agricultural development as a means to provide a critical 'growth spark' for a move into labour-intensive manufacturing and broader industrialization. It worked: previously a rice importer, Viet Nam is now the second biggest exporter in the world and the poverty rate has plummeted, from 58 per cent in 1993 to 18 per cent in 2006.[134]

Today, such national strategies for job creation and inclusive growth must be integrated with approaches to tackle vulnerability via climate adaptation, social protection, and disaster risk reduction.

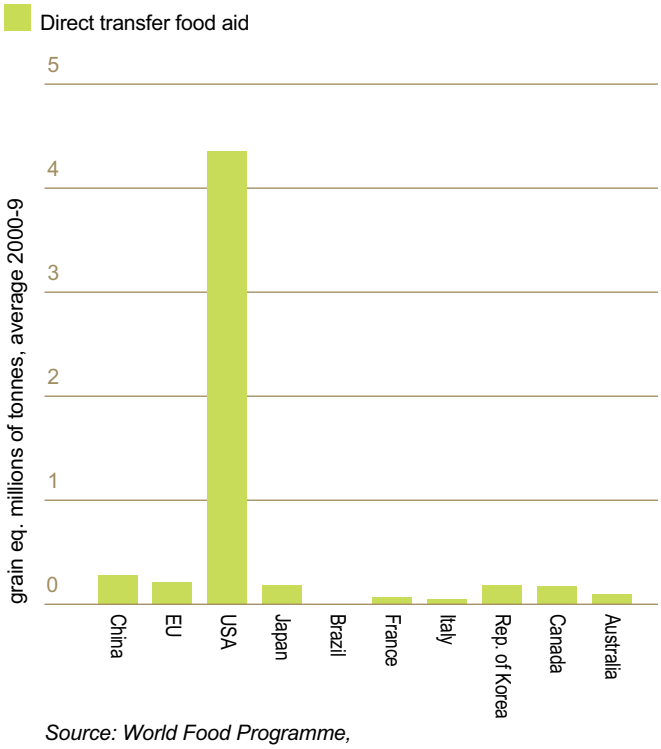
## A new global governance

The G20 can begin the process of international reform this year – by tackling commodity speculation, agreeing new sources of innovative finance for climate change, and reaching consensus on export restrictions, food reserves and increased transparency in commodity markets. But the G20 mainly represents food powers (see Figure 17). Ultimately, governance of the food system must become broader-based, and include those countries most vulnerable to crises and shocks.

The UN's Committee on World Food Security (CFS) provides a forum in which a new governance framework can be negotiated and agreed. It is already working on critical issues such as food price volatility, land investment, climate change, and protecting livelihoods during protracted crises. More importantly, it is the only space in which all governments, civil society, international institutions, and the private sector can formally negotiate measures to ensure international food security.[135]

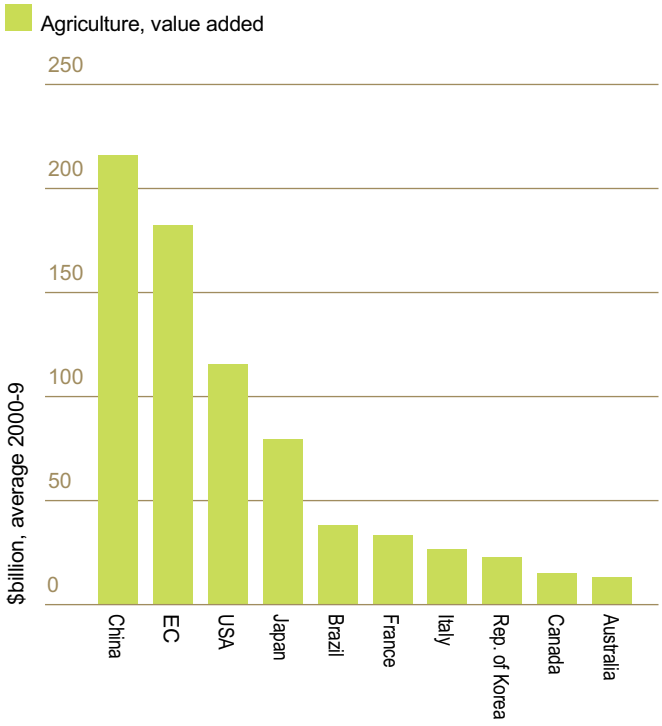
As we lurch uncertainly into the age of crisis, the CFS holds our best hope of ushering in a new era of co-operation – a system of multilateral rules that will enable governments to act collectively in the global interest, resolve conflict, align policies, and allocate resources more effectively.

**Figure 21a: Who are the food superpowers?**



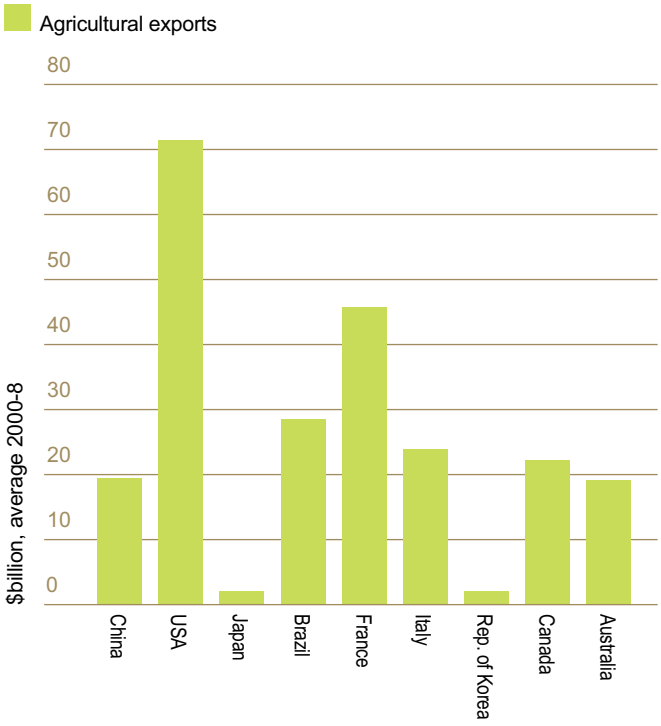

*Source: World Food Programme, http://www.wfp.org/fais/quantity-reporting/*

## Figure 21b: Who are the food superpowers?



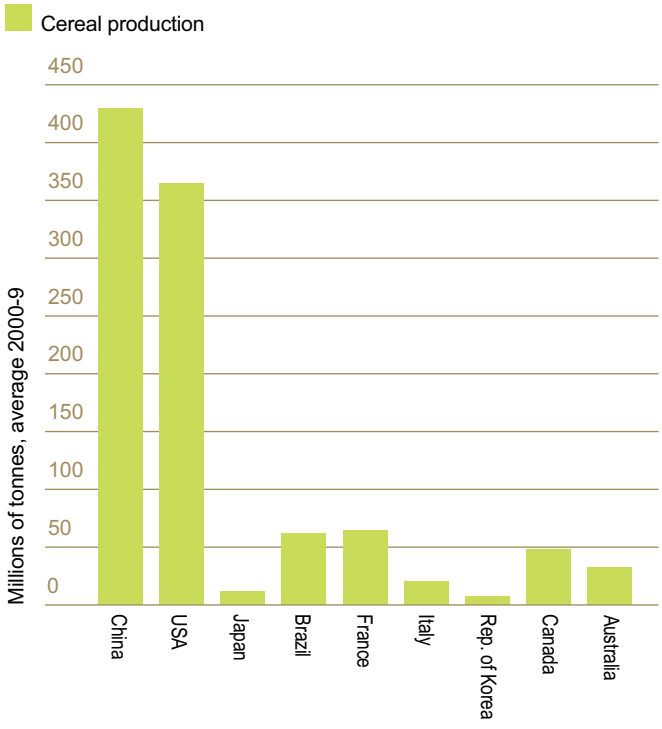

*Source: World Bank, http://data.worldbank.org/indicator/NV.AGR.TOTL.KD*

## Figure 21c: Who are the food superpowers?



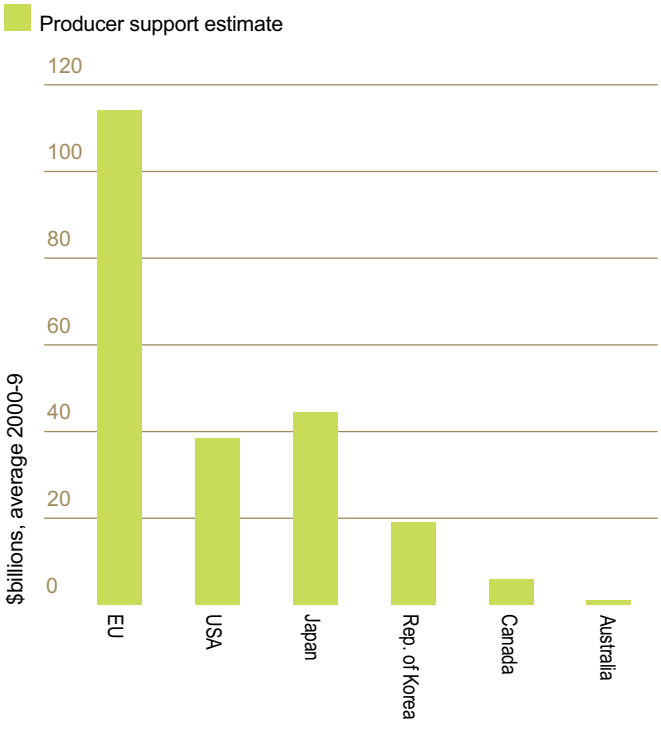

*Source: FAO, http://faostat.fao.org/site/535/DesktopDefault.aspx?PageID=535#ancor*

## Figure 21d: Who are the food superpowers?




*Source: FAO, http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor*

## Figure 21e: Who are the food superpowers?




*Source: OECD, http://www.oecd.org/agriculture/pse*

# 3.3 A new agricultural future

The simple question facing policy makers, especially in developing countries, is who will sustainably generate the agricultural surpluses needed to feed a growing population, and how?

There is no shortage of simple, off-the-shelf blueprints on offer. One group of protagonists maintains, in the words of a widely cited analysis in *The Economist* that, when it comes to farming, 'big is beautiful'. More specifically, that Africa should import the 'Brazilian model' of large-scale commercial agriculture and phase out smallholder farming. Once fashionable among colonial administrators, this camp maintains that large farms are more productive, more innovative, more adept at embracing new technologies, and – ultimately – better at feeding people.

Another set of advocates sees all large-scale agriculture as a threat to the peasant way of life, a source of inequality, and a vehicle for subordinating agriculture to commerce at the expense of human need. This group tends to view new technologies with deep suspicion and is equally sceptical of international trade, concerned that they lead inevitably to the exploitation of poor producers and labourers resulting in deeper poverty and hunger.

Such polarized debates are unhelpful. They continue a long tradition of 'expert opinion' directed towards small-scale food producers. Indeed, it is difficult to think of any constituency in international development that has been subjected to so much irrelevant, and in some cases, harmful advice.

The romanticization of 'the peasant' and rejection of new technologies and trade have the potential to lock farmers into poverty. International trade and new technologies are not magic bullets, but each has a major contribution to make, one which can be increased massively if governments direct them towards delivering public goods.

Left: Local residents of Trinidad, Bolivia, cross a bridge between elevated seedbeds (camellones). Flooding is increasingly unpredictable in this area of the Amazon Basin. (Bolivia, 2007)

Large-scale agriculture also has a role to play in meeting the sustainable production challenge. It is better able to meet the exacting standards that have come to characterize the food supply chains that feed burgeoning cities. Moreover, as economic development takes place, and labour costs rise relative to capital costs, larger, more mechanized modes of production become more viable, in turn providing an exit from agriculture for poor rural people as long as sufficient jobs are created in industry.

It is certainly not the case that big is bad. Whether a farm is 'bad' or not depends upon the practices of the farmer or company running it – these can be exploitative and environmentally destructive whether the farm is two hectares or 20,000 hectares.

Nor is it a case of 'big is beautiful'. Exporting the Brazilian model to Africa combines bad economics with a detachment from social reality, and is a prescription for increased poverty and hunger.

A simple thought experiment demonstrates why. There are around 33 million small farmers in sub-Saharan Africa working plots with an average size of 1.6 hectares – a bit larger than 3 American football fields.[136] In Brazil's *Cerrado* region, a not untypical farm is in excess of 20,000 hectares.[137] Put differently, a single large-scale farm imported from Brazil into Tanzania could displace 12,500 smallholder farms. In the absence of an unprecedented and implausible level of job creation in urban centres, the transition to 'big' agriculture would be anything but 'beautiful' – it would deliver a dramatic increase in poverty, rural hunger, and urban slums.

Moreover, today's large farms tend to suffer from a heavy ecological footprint – due to profligate water use, pollution of groundwater, and reliance on oil-based agro-chemicals and diesel-burning machinery – thus undermining the human and natural resources on which food production must depend.

If we are to meet the three challenges set out in the previous section, then sustainable models of smallholder production must be where the lion's share of effort goes.

The huge untapped potential to increase yields among smallholder farmers is where the real opportunity lies. And while less input-intensive, more climate-friendly agricultural practices are not exclusive to small farmers, they are often well suited to this scale of production, and easily adopted (see Box 10).

Because vulnerability, poverty and hunger are concentrated among the rural poor, investing in smallholder agriculture will build resilience, and boost incomes and food availability in hunger hotspots, especially if the investment is sensitive to gender inequalities.[138] Furthermore, history shows that investing in agriculture has provided a crucial 'growth spark' in the take-off of most successful developing economies.[139]

**Box 10: 'Sustainable intensification'**

Agriculture will have to become less input-intensive and wasteful if the resilience challenge is to be met. Clues as to how this can be achieved lie in a toolkit of practices known as 'sustainable intensification'.

Use of animal and green manure reduce dependency on expensive inorganic fertilizers, the price of which is linked to oil. Agro-forestry and intercropping with leguminous vegetables helps improve soils and diversify income. Integrated pest management techniques reduce the need for expensive chemical pesticides. Water harvesting reduces the need for irrigation and helps deal with unpredictable rainfall. Soil conservation techniques maintain soil nutrients and productivity.

Recent research into these practices has produced exciting results. The most comprehensive study examined 286 sustainable agriculture projects in 57 countries and found an average yield increase of 79 per cent.[140] Another study reviewing 40 sustainable intensification projects in 20 African countries found that average yields more than doubled over a period of 3–10 years.[141]

Precisely because these practices were developed for farmers without access to inputs and machinery and for contexts where conservation of the natural resource base is critical, they have a much lighter ecological footprint. Use of fossil fuel-based agrochemicals and diesel-burning machinery is low; carbon stocks – above and below ground – can be conserved or even increased; and water and soils are used more efficiently and sensitively.

A good example is the System of Rice Intensification (SRI), a low external input approach widely adopted by farmers in India, Indonesia and Viet Nam. It was developed for small farmers to help them boost productivity and reduce reliance on inputs, and promoted by Oxfam and other NGOs in a growing number of countries around the world. The results are startling: studies across eight countries found average yield increases of 47 per cent and average reductions in water use of 40 per cent. This, coupled with reduced use of seeds, synthetic fertilizers, pesticides, and herbicides, allowed farmers to increase their incomes by over 68 per cent on average, while significantly reducing methane emissions – one of the most powerful greenhouse gases.[142]

## Four myths about smallholders

The case against smallholder farms often relies on four key misconceptions, born of a lack of familiarity with the lives of poor farmers.

**1. Low productivity**

Apparently striking data shows that average yields for cereals on small farms in Africa are less than two tonnes per hectare, compared with 50 tonnes on large commercial farms in Brazil.[143] But smallholder farms often have low yields precisely because they use the factors of production more sparingly.[144] Small farms in Africa use tiny amounts of fertilizer – about one-eighteenth of those in India, for example.[145] They use labour rather than capital, and less than five per cent of the cultivated area is irrigated.[146] Furthermore, small farmers can only dream of the lavish subsidies showered upon many large-scale farms.

Accounting for these other factors in the productivity calculation massively narrows the gap. Put another way: if small farmers had the inputs, irrigation, and subsidies enjoyed by large farms, things would look very different. This is why surveys often find that, when the focus is shifted from yields to total productivity, small farms are found to be more efficient.

Oxfam sees this time and again in its work with small farmers all over the world, such as a recent project in Mnembo, Malawi that transformed the lives of 400 families.

Where increasingly erratic rainfall had sent their maize yields into terminal decline, now, thanks to irrigation, new seeds, and fertilizers, production has increased significantly and they have diversified into wheat, rice, and tomatoes.

'Case Study: Support for Small-Scale Production in Malawi' www.oxfam.org/grow

**2. Aversion to technology and innovation**

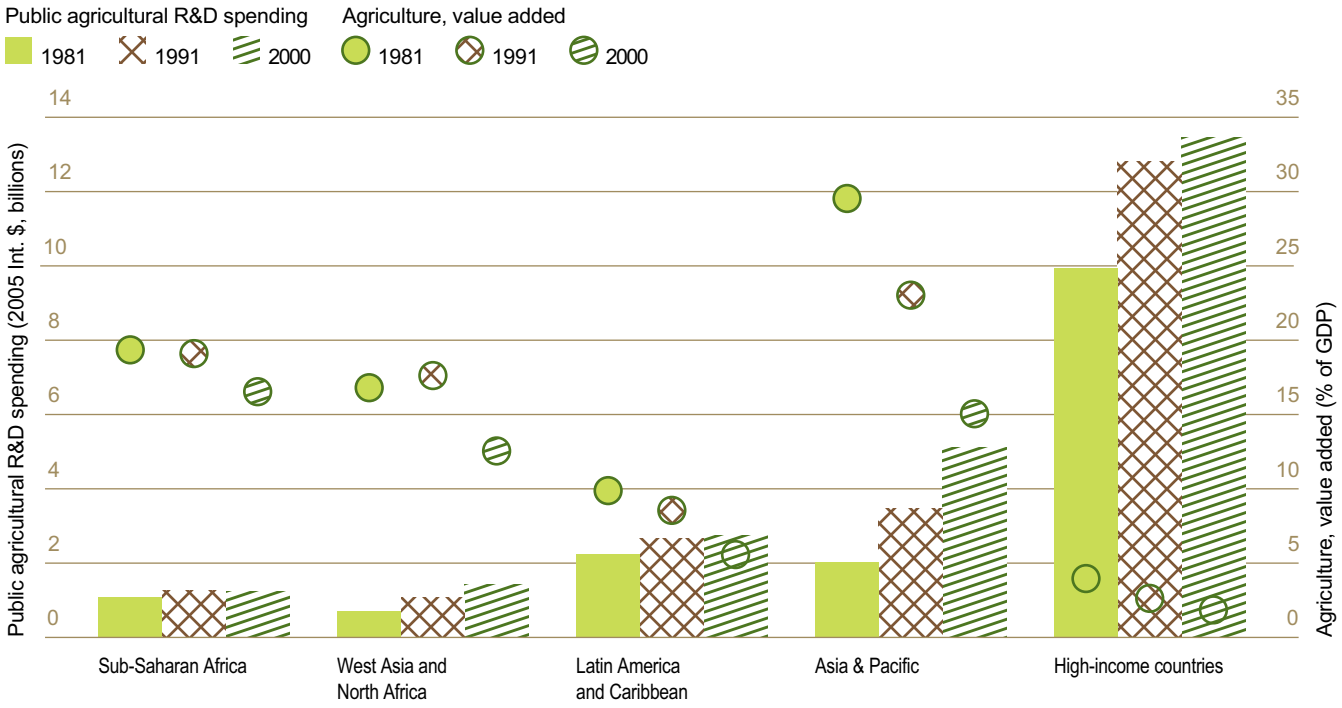
'Big is beautiful' adherents maintain large farms are quicker to adopt new technologies, forgetting perhaps that the Green Revolution in India was led not only by large commercial farms, but also by small-scale producers. Farmers living in poverty do not grind out their existence using primitive technologies and outdated practices as a preferred option, rather because appropriate technologies for small producers have not been a priority for government or the private sector. For example, genetically engineered crop varieties developed overwhelmingly for large-scale industrial farms have failed to deliver for poor farmers, and have failed to make a significant contribution to tackling hunger, poverty or development.

Sub-Saharan Africa has seen countless examples of technological success stories at the forefront of innovation: smallholders have adopted improved maize and rice varieties and cassava resistant to pests.[147] In the Dadeldhura and Dailek districts of Nepal, Oxfam helped 15 communities of women and men planting new drought-resistant seed varieties, building and managing new irrigation systems, and adopting new farming practices.

'Case Study: Improving Food Security for Vulnerable Communities in Nepal' www.oxfam.org/grow

Left: Edward Chikwawa holding the seeds he is about to plant at the Chitimbe Irrigation site. (Malawi, 2008)

## Figure 22: Investment in agricultural R&D ignores Africa




*Sources: FAO, http://www.fao.org/docs/eims/upload//282426/GAT_Report_GCARD_2010_complete.pdf and World Bank, http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS}*

### 3. Aversion to risk

Some argue that small producers are insufficiently entrepreneurial and unwilling to take risks. Of course, surviving on less than $1.20 a day, without recourse to savings or insurance, narrows the scope for taking risk – on a new, unproven crop or seed variety, for example. Survival, not profit maximization, is the overwhelming priority. The solution is to help poor farmers to better manage risks: by providing better weather information and data, storage infrastructure, or access to insurance. Such interventions can help spur innovation and unlock productive potential – especially as climate change rapidly multiplies the risks poor farmers face.

### 4. Aversion to markets

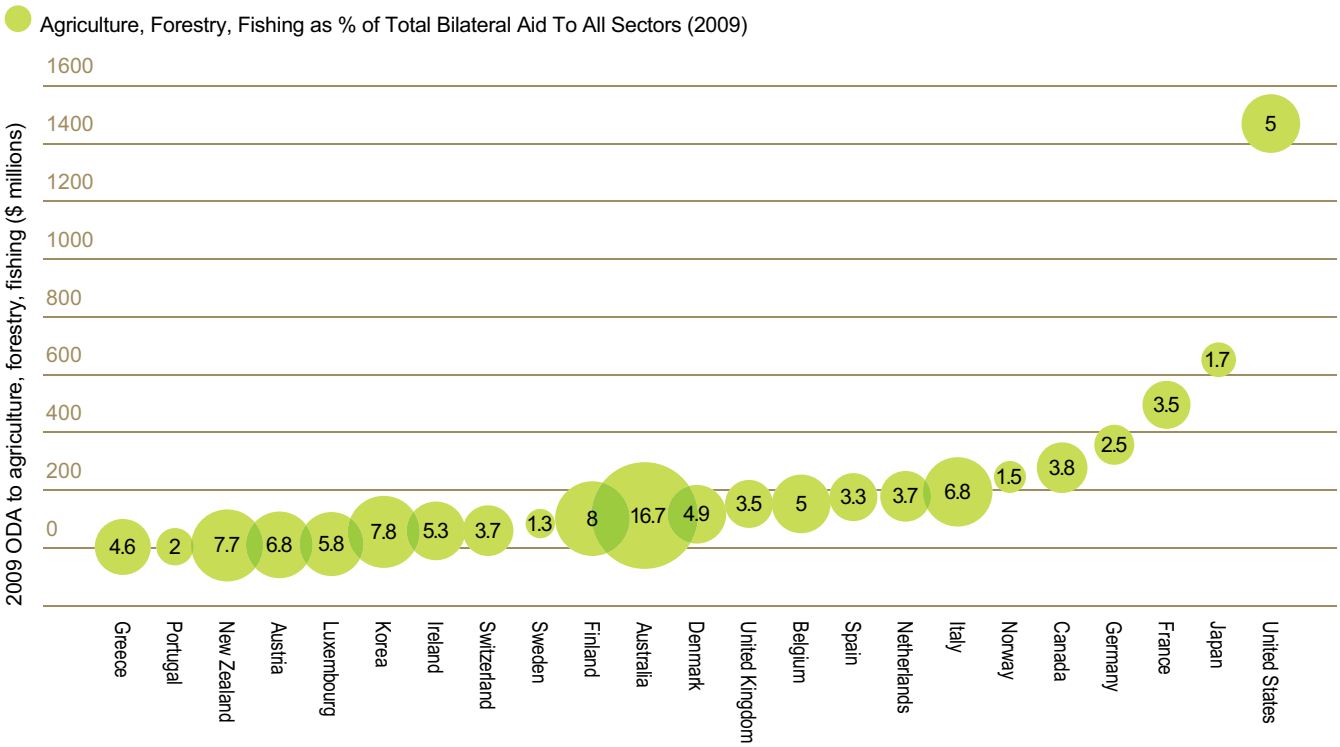
A final myth about smallholders is that they do not respond to market opportunities. This is nonsense. While their priority is feeding their families, this does not mean poor farmers are unwilling to produce and market surpluses. Oxfam has worked with producer organizations and with the private sector on countless occasions to bring poor farmers into markets with astounding results. For example, Oxfam is helping the Sri Lankan company Plenty Foods integrate 1,500 farmers into its supply chain. Plenty Foods estimates that sourcing from small farmers has contributed to an annual growth of 30 per cent over the past four years, while farmers have seen improved access to land, credit, technical support, and markets, and a corresponding rise in their incomes.

Of course, some small producers survive on the absolute margins, working depleted soils using primitve techniques. The nature of their existence makes them unlikely to pursue market opportunities; or for that matter be pursued by market actors. But these are the exceptions, not the rule.

These four arguments do not constitute a case against investing in smallholder agriculture. They are not evidence of inherent failings or inevitabilities. The real problem is that smallholder farmers have never been given the support or been provided with the policy environment they need to flourish. They are efficient on a total-factor basis, but yields are low because of under-investment and a lack of access to resources. Technology uptake is slow because of a lack of appropriate research and development and extension services. Risk-taking is low because of a lack of supports to build resilience and climate adaptation. Engagement with markets is low because of poor infrastructure and reluctance on the part of private sector actors to accommodate them in value chains.

These are not reasons to not invest. They are reasons *to* invest.

**Figure 23a: Who is investing in agriculture?**
**Donor country agricultural ODA**




*Source: calculated from OECD, http://stats.oecd.org/qwids/*

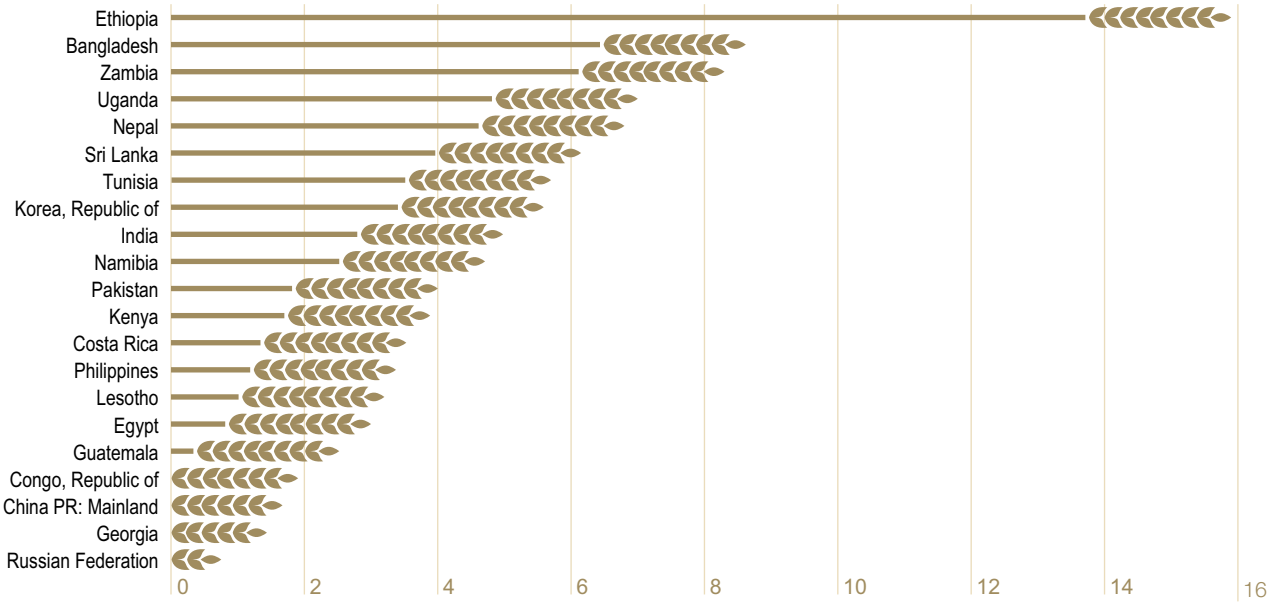
## A new agricultural investment agenda

The case for a massive, government-led investment in smallholder farming and supporting infrastructure is clear. The 500 million small farms in developing countries support almost two billion people, nearly one-third of humanity,[148] and do so without the access to markets, land, finance, infrastructure and technologies enjoyed by large farms. Addressing this gaping inequity offers a crucial opportunity to address the challenges of sustainable production, resilience, and equity.

There are now signs that the disastrous neglect of developing country farming may finally be coming to an end. Agriculture's share of ODA looks to be heading upwards, having bottomed out in 2006, although it still is under 7 per cent of all aid.[149] And in many countries this is being matched by new commitments from governments – most notably the Maputo Declaration, which saw all member countries of the African Union commit to increase the share of agriculture in national budgets to at least 10 per cent in 2003,[150] bringing clear benefits to the continent, where food production per head is now rising again for the first time in decades.[151]

There are also signs that the private sector is taking the challenge seriously. In 2011 at the World Economic Forum in Davos, 17 major companies launched a New Vision for Agriculture committing to increase production by 20 per cent while decreasing emissions by 20 per cent and reducing the prevalence of rural poverty by 20 per cent every decade.[152] Meanwhile, some input companies have entered into partnerships with governments, non-profit organisations and research institutions to produce seeds suitable for developing country contexts.[153]

**Figure 23b: Who is investing in agriculture?**
**Spending on agriculture as a proportion of total spending**




(Latest available data for period 2005–2010, %)

*Source: calculated from IMF, http://www2.imfstatistics.org/GFS/*

But realising this opportunity requires more than a few hopeful examples from donors, governments, and the private sector, important as they are. It requires a sea change in the level and nature of support. Donors and international organisations must continue to raise agriculture spending within overall ODA. Rich countries must end their trade-distorting agricultural subsidies once and for all. New global regulations are needed to govern investment in land to ensure it delivers social and environmental returns. And national governments must invest more in agriculture, while carefully regulating private investment in land and water to ensure secure access for women and men living in poverty.

Companies must embrace the opportunities provided by smallholder agriculture – to diversify and secure supply; to build and strengthen brands; or to develop new technologies. And active states must intervene where companies fear to tread: to direct R&D towards appropriate technologies for poor women and men producers, to build market linkages on equitable terms, to ensure the dissemination of knowledge through extension services, and to provide access to finance.

*'Since we started this, we always have enough food. They gave us open-pollinated variety maize, which is fast-maturing and drought resistant. We have also started planting soya beans and groundnuts. ... The children can now go to school because they have enough food and are not hungry anymore.'*

Jean Phombeya, village head, Mlanga, Malawi

# 3.4 Building the new ecological future

The one thing we know for sure about the future is that it will be different from the past. It better be. More-of–the-same development is unsustainable in every sense. It is undermining the long-term prospects for growth and prosperity, and harming the lives of the poorest people right now.

Over the next decade we need a very rapid transition to a new model of prosperity, which delivers growth, which respects planetary boundaries and has equity at its heart. The outlines of the new model are already clear, but our political leaders must overcome the inertia and vested interests that could strangle it at birth.

This transition will only be possible with clear global commitments and frameworks for action, and effective policy at national and regional levels that mobilises investment and shifts the behaviour of businesses and consumers.

Opposite: Leyla Kayere, 76, weeding her tomatoes. The Oxfam-funded Mnembo Irrigation scheme has helped 400 families in Malawi by transforming their traditional small low-yield crops into year-round, high volume harvests that provide continuous food and a source of income. (Malawi, 2009)

## Equitable distribution of scarce resources

The journey to the future has begun. But we must change gear now if there is to be a happy ending. The soaring rhetoric from global summits on climate change, biodiversity and the green economy is not enough to fuel this transition. Our success or failure in making the transition to the new prosperity will depend on whether our political leaders set clear global targets on climate change, biodiversity, water and other issues, and adopt global frameworks for action that ensure a speedy and equitable transition.

The UNFCCC remains the forum to set the global framework for action on climate change, the most pressing challenge to the new prosperity. An ambitious and binding deal there will confirm that the transition is underway. The G20 can develop a consensus and use its economic and financial might to shift investment and mobilise the necessary finance. But it does not have the global membership or the structures to deliver the transition alone. The 'Rio plus 20' Summit in Brazil in June 2012 may provide just the opportunity required.

In the aftermath of Copenhagen, a fair, ambitious and binding global framework to tackle climate change looked a very long way off. But as climate change continues to gather pace, the momentum for a deal is growing again. It is apparent in the breathtaking speed of Chinese investment in clean energy, the determination of major European countries to unilaterally increase the EU's greenhouse gas targets, and the important steps made to establish a global climate fund at the 2010 UNFCCC Summit in Cancun.

But the pace of the negotiations remains too slow, and their ambition too low. Many leaders in Europe, in particularly vulnerable countries, and in China, India, Brazil, Mexico, and South Africa, have acknowledged that an early shift to a low-carbon economy is the low-cost path to long-term international competitiveness and environmental sustainability. The 'Cartagena Dialogue',[154] which brought together developed and developing countries to build bridges for the UNFCCC, has mobilised countries to move together to a low-emissions future. The EU and China are in close dialogue on low-carbon pathways, building on the ambition of China's five year plan.

Our challenge is to bring ever greater pressure to bear on these and other countries, to overcome the business lobbies that have stifled progress to date. On climate change and in other areas, we need clear global targets for action, and binding frameworks that give certainty and confidence to make these goals a reality.

## An equitable transition

Global agreements matter. They can establish an ambitious shared global commitment to clear goals, and set the rules of the game. But the transition to a global economy that respects planetary limits will come primarily as a result of national and regional action. There is a great deal already happening to tackle emissions, develop technology, and transition to a low-carbon economy. But far, far more is needed.

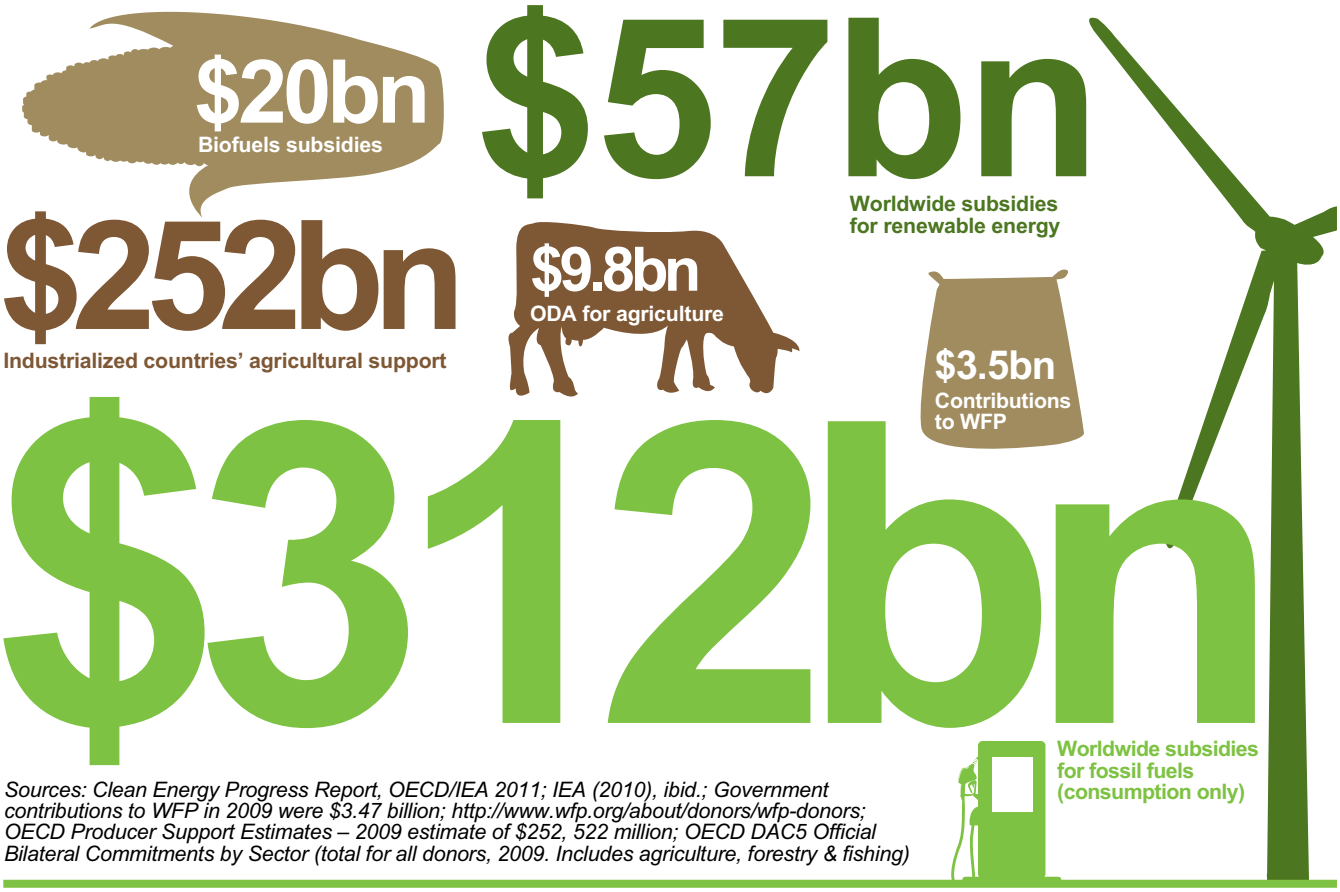
For wealthy countries, this requires a rapid shift towards a new low-carbon energy and transport infrastructure, as well as new financial mechanisms that can both incentivise this shift and finance low-carbon development in poor countries. With the right policy frameworks this shift can be an engine for equitable growth.[155]

For emerging economies, the opportunity is one of leap-frogging the resource intensive patterns of production that have been so socially and environmentally damaging, and to secure global economic advantage. There are huge opportunities for those that get there first.

For the poorest countries, the imperative will continue to be employment and wealth creation to benefit the poorest without damaging the environment on which their future prosperity depends. Fortunately there are many strategies to pursue pro-poor sustainable growth. As we have already seen, the sustainable intensification of agriculture offers big opportunities to increase incomes and food security, build resilience and conserve natural resources. And reducing dependency on fossil fuels is a hugely attractive proposition, as some poor countries spend up to six times as much on importing oil as they do on essential services such as health.[156]

Vertiginous oil price forecasts mean the poorest oil importing countries are staring into an economic abyss: recent research estimates that they could lose 4 per cent of GDP due to future price rises.[157] Hard economic realities such as these, coupled with the fact that they are also the countries on the front lines of climate change, has prompted Ethiopia and the Maldives to completely decarbonise their economies within the next 10–15 years.

**Figure 24: Governments are good at investing in public bads**




*Sources: Clean Energy Progress Report, OECD/IEA 2011; IEA (2010), ibid.; Government contributions to WFP in 2009 were $3.47 billion; http://www.wfp.org/about/donors/wfp-donors; OECD Producer Support Estimates – 2009 estimate of $252, 522 million; OECD DAC5 Official Bilateral Commitments by Sector (total for all donors, 2009. Includes agriculture, forestry & fishing)*

Left to themselves and the vested interests that govern them, markets will not deliver a new ecological future. Governments must intervene to speed up and direct the transition. They can invest in public goods such as R&D in clean energy. They can create incentives through the use of subsidies and tax breaks to guide private capital to where it is needed. They can tax undesirables – such as greenhouse gas emissions – to direct economic activity towards desirable alternatives. And they can regulate: for example, to stop companies polluting or to encourage them to provide goods and services they otherwise would not.

So far governments have tended to back down from regulating big businesses, and have proved better at delivering handouts to well-organized interest groups (see Figure 23) than directing money to where it is needed. But with sufficient public pressure for public money to go towards public goods, this will change.

There are growing numbers of examples where the right kinds of government action are taking place, each making a contribution to the larger transition we all need. India has implemented a new carbon tax on coal producers which it will use to fund renewable energy. The European Union is seeking to bring aviation into its Emissions Trading Scheme. Deforestation in Brazil has fallen to its lowest level on record following concerted government and civil society action.[158] China's twelfth five-year plan contains a host of targets and measures to increase renewable energy consumption and tackle emissions.

Opposite: A grandmother and her granddaughter walk home from the mustard harvest in Belauhi village, India. Belauhi's farmers have been learning new agricultural techniques such as irrigation and the use of new and drought resistant crops including pulses and oil seeds have provided residents with more food security. (India, 2011)

To help guide this transition, we need to start measuring it, but our current yardstick is fundamentally flawed. GDP includes defensive expenditures, such as oil spill clean-ups, while ignoring many valuable social goods such as unpaid caring work in the home and community. Devastatingly for the environment, it counts consumption of natural resources, such as cutting down a forest for timber, as an income, but not as the loss of an asset. Any business run on this basis would fast lose its investors. One major study[159] estimated that including the costs of environmental damage in GDP would show that global output[160] is 11 per cent smaller – or $6.6 trillion less, considerably more than the size of the Chinese economy. On our current course, this ignored cost will have spiralled to $28.6 trillion by 2050, or 18 per cent of global GDP. The food sector was found to be one of the very worst offenders – coming behind only the very dirtiest polluters: power generators, oil and gas, and industrial metals and mining. Simple arithmetic should tell us that we cannot continue to run down an ever increasing proportion of our assets without going bust. It is time to mainstream some of the many new accounting measures for productivity and wellbeing to properly include the social and environmental costs of our activities.

The institutions and policies to deliver a new ecological future can and must be built over the next decade. Starting now. But the power to make this transition is currently held by those who benefit from the status quo. It's time to grasp it from them. To date most governments have failed to stand up to vested interests. To make the new prosperity a reality for those who need it most, we must add our voices to the struggle for a better way.

# 3.5 The first steps: Oxfam's agenda

Achieving the three shifts outlined will take time. Oxfam, with others, proposes the following agenda in the immediate years.

1. In order to build a new global governance to avert food crises, Oxfam will campaign with others to:

- Reduce volatility and the likelihood of global food price crises through an increase in public pressure to fix the main problems, including opaque international markets, an inability to deal with export restrictions, damaging biofuel policies, and excessive speculation.
  - The G20 and its members should agree specific measures to rein in and re-govern markets, including measures to increase transparency, deal with export bans, and regulate excessive financial speculation. In the medium term, the Committee on World Food Security should lead coordination mechanisms to address these issues more broadly.
  - The EU and USA must dismantle support for biofuels
- Mitigate the impacts of food crises at different levels, working to:
  - Establish local, national, and regional food reserves;
  - Encourage national governments and donors to create and sustain safety net programmes in developing countries targeting food insecure people and women in particular;
  - Encourage national governments and donors to invest in improved and more effective early warning systems, disaster risk reduction, and climate adaptation.
- Ensure a fast and fair response in the event of crises, including by international institutions (such as the World Bank) that supply balance of payments support; and those donors and institutions responsible for the provision and delivery of food aid.
- Stop investors and corporations undertaking irresponsible large-scale land investments which undermine vulnerable people's access to resources and food security:
  - Naming and shaming investors or corporations whose value chains or direct investments are implicated in land and water grabs;
  - Making sure that institutions and norms that influence investor behaviour are held to high standards in relation to land and natural resources;
  - Helping ensure that agribusiness sectors or commodity chains, starting with food and beverage companies and traders, adopt responsible investment policies and practices in relation to land.

2. In order to build a new agricultural future, we will actively campaign to increase public and private investment in small-scale food production. We will seek change that guarantees:

- Donors and governments invest in the productivity, resilience, and sustainability of small-scale food producers. For that purpose:
  - Major donors should adopt policies that promote sustainable, resilient and inclusive agriculture and adaptation. Donors will be held to account against their l'Aquila commitments to invest in agriculture and food security, and their Copenhagen commitments to invest in climate adaptation.
  - National governments (and regional bodies) should agree adaptation strategies and agricultural development policies and frameworks that promote sustainable, resilient and inclusive agriculture. These should be backed by public investment, and ensure that small food producers and women producers participate in decision making.
- Companies invest in the productivity, resilience and sustainability of small food producers. We will contribute to this by:
  - Advocating for major companies to invest in sustainable, resilient smallholder agriculture. This will include the design and development of a food justice index that will evaluate the progress of different private actors against this objective.

- Advocating for donors and financing bodies, such as the International Finance Corporation, to promote private sector investment that builds resilient, sustainable and inclusive agriculture.

• Encourage the implementation and enforcement of policies that strengthen the land and natural-resources rights of women and other small scale food producers through:

- Legislation to improve secure access to land and natural resources, and national campaigns to empower women and men to claim their rights of access.

- Strong voluntary guidelines on land and natural resources tenure agreed by the CFS that inform national action.

3. In order to build the architecture of a new ecological future, we will campaign for a global deal on climate change that stops excessive greenhouse-gas emissions from devastating food production. Oxfam will work with others to:

• Raise awareness of the human impact of climate change, particularly in rich and rapidly developing countries to underpin the urgency of action on climate change;

• Build a consensus among governments around their fair shares of the emissions cuts needed to prevent catastrophic levels of global warming;

• Press for further progress on climate finance, targeting in particular:

- The operationalization of a fair global climate fund, with specific provisions to meet the needs of women and other vulnerable groups, including: the creation of a dedicated adaptation window with guaranteed resources to address the adaptation funding gap; strong gender principles in the composition and programmes of the fund; and mechanisms to ensure the full participation of affected communities in the governance of the fund's resources;

- The establishment of new sources of reliable, long-term climate finance to ensure the fund is not an empty shell, including fair budgetary contributions by rich countries, alongside a financial transactions tax or measures to raise revenues from international transport.

Above: Tomatoes, Malawi

# 4

# CONCLUSION

Our global food system works only for the few – for most of us it is broken. It leaves the billions of us who consume food lacking sufficient power and knowledge about what we buy and eat, almost a billion of us hungry, and the majority of small food producers disempowered and unable to fulfil their productive potential. The failure of the system flows from failures of government – failures to regulate, to correct, to protect, to resist, to invest – which mean that companies, interest groups, and elites are able to plunder our resources and to redirect flows of finance, knowledge, and food to suit themselves.

Every day, it leaves 925 million people hungry.

And now we have entered an age of growing crisis, of shock piled upon shock: vertiginous food price spikes and oil price hikes, devastating weather events, financial meltdowns, and global contagion. Behind each of these, slow-burn crises continue to smoulder: creeping and insidious climate change, growing inequality, chronic hunger and vulnerability, the erosion of our natural resources. The broken food system is at once a driver of this fragility and highly vulnerable to it.

Without urgent action to tackle the interlinked challenges of production, equity, and resilience, the future will be one of zero-sum competition between states, resource grabs by powerful elites, and ecological collapse.

The age of crisis is a terrible threat, but also a moment of tremendous opportunity – a period of flux in which a new consensus can be forged, and course set towards a new prosperity. This alternative future is one of co-operation rather than division, where we properly value each other and our environment, and in which everyone enjoys a fair share. Getting there will take all the energy, ingenuity and political will that humankind can muster. We must mount powerful campaigns to win significant transformations in how our societies face common threats and manage common resources.

We will have to overcome the vested interests that stand to lose out, and which will strongly resist. The powerful elites in poor countries that control land and block reform. The farm lobbies of rich countries that plunder public purses, tipping the playing field against poor farmers. The dirty industries that block action on climate change at every turn. The seed companies whose myopic pursuit of patents undermines public research and leaves poor farmers on the margins. The multinational traders who profit as food markets unravel. The financial institutions that bet on them doing so.

Governments must renew their purpose as custodians of the public good rather than allowing elites to drag them by the nose. They must make policy in the interests of the many rather than the few. They must protect the vulnerable. They must regulate companies that are too powerful. They must correct markets that are failing. The examples of Brazil and Viet Nam, among others, show that strong political leaders with a clear moral purpose can drive government success.

Left: Spices for sale, India

Right: Nilanthi (right) alongside Kusumawathi (left) picks tea on her own land and is secretary of the Diriya Smallholder Tea Society representing 42 smallholder tea producers in the area, all of whom own less than an acre of land.

The economic crisis means that we have moved decisively beyond the era of the G8, when a few rich country governments tried to craft global solutions by and for themselves. Old battle lines between North and South are increasingly irrelevant. Power – over food, resources, and emissions – is concentrated among the G20 countries, where the emerging economies still have much to improve upon, but fresh energy and solutions to offer. Brazil has a lot to teach the world about tackling hunger, and in 2012 will host the crucial Rio+20 summit. China is the world's biggest investor in renewable technology[161] and has increased its trade with Africa ten-fold in a decade – overtaking the USA and EU as the largest trading partner in many areas.[162] In 2011, South Africa assumes the chair of the UNFCCC climate talks from Mexico.

Now the major powers, the old and the new, must co-operate, not compete – to share resources, build resilience, and tackle climate change. And the governments of poorer nations must also have a seat at the table, for they are on the front lines of climate change, where many of the battles – over land, water, and food – are being fought.

Responsible businesses also have a crucial role to play. They can break ranks with vested interests, strengthening the will of politicians and governments to resist. They can embrace progressive regulation rather than seek to undermine it or water it down. They can direct their business models and practices towards addressing the challenges we face.

The benign actions of responsible business and far-sighted governments alone will be unable to overcome the elites and vested interests that seek to block change. Governments must be galvanized to resist them and to regulate, correct, protect, and invest. Citizens must demand this of them. The incentives under which businesses operate must shift so that they can no longer impose their social and environmental costs on others, and instead flourish by making the most of resources. Customers must demand this of them.

The decisions we take, and the choices we make, matter.

Inspired by such ideas, and motivated by a desire for a better future, organizations, businesses, movements, and networks for a new prosperity are appearing, growing, and connecting up all over the world. Poor farmers' organisations demanding fair shares from national budgets and market chains. Development NGOs working on sustainable agriculture. Environmental organizations calling for a sustainable future. Women's groups claiming their rights to resources. Communities leading low-carbon lifestyles. Movements, such as Fair Trade, which link ethical consumers and the private sector. Grassroots campaigns calling for the right to food to be respected. The list is long and growing.

Oxfam is proud to stand alongside them.

# Notes

1 http://data.worldbank.org

2 In Niger 44 per cent of children suffer from chronic malnutrition, World Food Programme, http://www.wfp.org/countries/niger

3 http://hdrstats.undp.org

4 http://www.fao.org/hunger/hunger_graphics/en/

5 J. Von Braun (2008) 'Food and Financial Crises: Implications for Agriculture and the Poor', IFPRI Food Policy Report. Washington DC: International Food Policy Research Institute.

6 http://www.fao.org/news/story/0/item/20568/icode/en/

7 For example, Nike and Apple publicly left the US Chambers of Commerce when it refused to back US climate legislation. http://www.businessgreen.com/bg/news/1800576/greenpeace-heat-oil-giants-linked-astroturf-protests

8 http://www.unep.org/publications/ebooks/annual-report09/Content.aspx?id=ID0EXEAC

9 The IPCC AR4 Working Group on Mitigation (Working Group III) found that, 'For the lowest mitigation scenario category assessed, CO2 emissions would need to peak by 2015'. See: IPCC (2007) 'Climate Change 2007: Synthesis Report, An Assessment of the Intergovernmental Panel on Climate Change', Geneva: IPCC: Footnote 20.

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11 http://esa.un.org/wup2009/unup/index.asp?panel=1

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14 M. Cecchini, F. Sassi, J.A. Lauer, Yong Y Lee, V. Guajardo-Barron, D. Chisholm (2010) 'Tackling of unhealthy diets, physical activity, and obesity: health effects and cost-effectiveness', *The Lancet*, Vol. 376, 20 November 2010, pp.1775–83.

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17 R. Trostle (2008), *op. cit*.

18 The total area under irrigation is forecast to increase by only 9 per cent between 2000 and 2050, Global Water Security (2010) 'Engineering the Future'. See also Bruinsma (2009) 'The Resource Outlook to 2050: By How Much Do Land, Water Use and Crop Yields Need to Increase by 2050?', paper presented at the Expert Meeting on How to Feed the World in 2050, Food and Agriculture Organization of the United Nations, Rome. This argues that the area equipped for irrigation could increase by 11 per cent from 2005 to 2050, with the expansion concentrated in East and South Asia, and Near East/North Africa.

19 In the semi-arid tropics – which lie primarily in developing countries where agriculture is almost entirely rain-fed and largely comprises poor, smallholder farms – potential yields under high inputs and advanced management are on average 3.6 times more than current average yields. Soil moisture management and rainwater harvesting could add an additional 10% on average to these high input potentials, while further reducing the variability in yields and number of failure years. See http://www.iwmi.cgiar.org/assessment/files_new/publications/ICRISATReport_54.pdf

20 Calculated from OECD DAC5 database 'Official Bilateral Commitments by Sector'; includes forestry and fishing.

21 OECD Producer Support Estimate in 2006 was $252,508m, see http://www.oecd.org/dataoecd/30/58/45560148.xls?contentId=45560149

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27 World Bank, http://is.gd/P5cylT

28 One major review recently concluded that 'we should work on the assumption that there is little new land for agriculture', Foresight (2011) 'The Future of Food and Farming, Final Project Report', The Government Office for Science, London, http://www.bis.gov.uk/foresight/our-work/projects/current-projects/global-food-and-farming-futures/reports-and-publications. Another quantifies 'little' as an increase in arable area of 12.4 per cent in the developing world – where the vast majority of potential new land is found – by 2050, see http://goo.gl/64ZAI

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31 R. Clarke and J. King (2004) *The Atlas of Water,* London: Earthscan Books.

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34 Brown (2011) 'The Great Food Crisis of 2011', *Foreign Policy*, January 10, 2011.

35 Middle Eastern states are estimated to account for over a fifth of identified investments in sub-Saharan Africa. http://www.commercialpressuresonland.org/monitoring-land-transactions]

36 Demand for land in Africa has been estimated by the World Bank as 39.7m hectares in 2009, compared with a mean annual area expansion of 1.7m hectares over the period 1961–2007.

37 From preliminary data of a monitoring project of large-scale land acquisitions by Oxfam, CIRAD, CDE at University of Bern, and International Land Coalition. The data (March 2011) is currently being verified and will be released in full in September 2011. Land deals included in the database run from 2001 onwards, though the majority of deals are from 2007 to 2011.

38 Obtaining reliable data on land investments is almost impossible: transparency is minimal and deals are often shrouded in corruption and malfeasance. Oxfam is working with the International Land Coalition, the International Centre for Agricultural Research for Development, and the Centre for Development and Environment at the University of Bern to verify and aggregate existing data and to collect new data from the field. More details can be found at http://www.commercialpressuresonland.org

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56 Oxfam International (2008) 'Another Inconvenient Truth', *op. cit*.

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58 This background paper aims to contribute to this Oxfam report by exploring a range of scenarios through the GLOBE model. The methodology and assumptions on which it is based are fully detailed in the background research report, available at www.oxfam.org/grow.

59 The IFPRI model shows 49 million fewer malnourished children in developing countries by 2050 (baseline) than in 2010; with climate change it shows 37 million fewer. See www.ifpri.org/sites/default/files/publications/climatemonograph_advance.pdf

60 World Bank (2008) 'Rising Food and Fuel Prices: Addressing the Risks to Future Generations', see http://siteresources.worldbank.org/DEVCOMMEXT/Resources/Food-Fuel.pdf The model considers two opposite effects at work that determine the food share in total household expenditure. With rising per-capita income the food share drops – rich households/countries spend a far lower proportion of their income on food than poor ones. Rises in food prices relative to other goods have an opposite effect on the food share.

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76 This aggregate figure masks important differences between countries even within the same region. In Africa, for example, the share of landowners who are women ranges from less than 5 per cent in Mali to over 30 per cent in Botswana, Cape Verde and Malawi.

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113 US Government Accountability Office (GAO) (2009) 'International Food Assistance: Local and Regional Procurement Can Enhance the Efficiency of US Food Aid, but Challenges May Constrain Its Implementation Purchase', GAO-09-570. Washington, DC: GAO. http://www.gao.gov/new.items/d09570.pdf

114 Oxfam America (2011) 'Under Pressure: reducing disaster risk and enhancing US emergency response capacity in an era of climate change'.

115 Based on 2009 food aid volumes. Oxfam calculation based on data from http://www.usaid.gov/our_work/humanitarian_assistance/ffp/fy09.ifar.pdf Note: The USA has begun pre-positioning its food aid at strategic points around the globe. This has decreased the amount of time it takes for food aid to arrive at its destination, however, it may actually increase the total cost of delivery due to storage costs at the strategic points and in an additional transport step. This may lower the 15.2% figure, and therefore the absolute number of additional beneficiaries, slightly.

116 Oxfam International (2010) 'Righting Two Wrongs: Making a New Global Climate Fund Work for Poor People', see http://www.oxfam.org/en/policy/righting-two-wrongs

117 UN High Level Task Force on the Global Food Crisis, Comprehensive Framework for Action 2008, p.9.

118 World Bank, World Development Indicators.

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122 The proportion of people undernourished in Brazil fell from 11% in 1990–2 to 6% in 2005–6 (reduction of 45%), see http://www.fao.org/docrep/013/i1683e/i1683e.pdf

123 CONSEA 2009 'Building up the National Policy and System for Food and Nutrition Security: the Brazilian experience'

124 World Bank (2008) 'Double Jeopardy', *op. cit.* See http://goo.gl/BhRWa

125 IEA (2010) 'World Energy Outlook 2010' estimates support for biofuels in 2009 was $20bn, the bulk of it in the USA and EU. This figure is projected to rise to $45bn by 2020 and $65bn by 2035.

126 There has been limited progress in this area with the creation of the UN Central Emergency Response Fund (CERF) in 2006, to ensure that resources are available for underfunded emergency responses and sudden-onset crises. It is a central fund, and most of its money is not earmarked for any specific use. However, while this has eased the problem of a lack of voluntary donor funding for some emergencies, it merely shifts the problem to another arena, since the CERF itself depends on donor willingness to replenish it.

127 There has also been limited progress towards more cash-based programming. WFP has embraced the idea but in 2010–11 only devoted 7 per cent of its portfolio to cash programming. (J. Prout, WFP, 'Cash and Vouchers', presentation to WFP 2nd Global Cash and Vouchers Workshop, 22–3 November 2010, Rome). Donors, too, are changing, but many still devote the bulk of their funding to food aid. For example, DG ECHO currently allocates about 10% of its food assistance portfolio to cash, while 60% goes to in-kind support (the remainder goes to a mix of the two). DG ECHO, 'DG ECHO Perspectives on Cash Transfer Programming', presentation to CaLP global learning event, 16 February 2011, Bangkok.

128 World Bank (2008) 'Double Jeopardy', *op. cit.*

129 UN High Level Task Force on the Global Food Crisis (2008) *Comprehensive Framework for Action*.

130 For example, on cash transfers, see http://www.dfid.gov.uk/r4d/PDF/Articles/Evidence_Paper-FINAL-CLEARAcknowledgement.pdf

131 The UN Social Protection Floor (SPF) Initiative promotes universal access to essential social transfers and services. Calculations by various UN agencies show that a basic floor of social transfers is globally affordable at virtually any stage of economic development, even if the funding is not yet available everywhere. The SPF corresponds to a set of basic social rights, services and facilities that all people should enjoy. See http://www.ilo.org/gimi/gess/ShowTheme.do?tid=1321

132 http://www.ids.ac.uk/go/idsproject/the-new-bottom-billion

133 Oxfam International (2010) 'Halving Hunger', *op. cit.*

134 *Ibid.*

135 A key deliverable for the CFS is a new Global Strategic Framework on Food Security and Nutrition – a dynamic framework which can provide a set of rules to ensure co-operation and policy coherence between countries and which can evolve to meet the challenges arising in the age of growing crisis.

136 FAO High-Level Expert Forum (2009) 'The Special Challenge for Sub-Saharan Africa', http://www.fao.org/fileadmin/templates/wsfs/docs/Issues_papers/HLEF2050_Africa.pdf

137 *The Economist*, August 26 2010, 'The Miracle of the Cerrado', http://www.economist.com/node/16886442?story_id=16886442

138 Agriculture is the most important source of employment for women in rural areas in most developing country regions, FAO (2011) 'State of Food and Agriculture'.

139 Growth originating in agriculture, in particular the smallholder sector, is at least twice as effective in benefiting the poorest people as growth from non-agricultural sectors, FAO (2010) 'How to Feed the World', p.2. See also Ha-Joon Chang (2009) 'Rethinking Public Policy in Agriculture: Lessons from History, Distant and Recent', *Journal of Peasant Studies*, 36:3, July 2009, pp.477-515.

140 Jules Pretty et al., 'Resource-Conserving Agriculture Increases Yields in Developing Countries', Environmental Science and Technology, 40:4, 2006, pp. 1114−9. The 79% figure refers to the 360 reliable yield comparisons from 198 projects. There was a wide spread in results, with 25 per cent of projects reporting a 100% increase or more.

141 J. Pretty et al., 'Sustainable Intensification in African Agriculture', *International Journal of Agricultural Sustainability*, 9:1, forthcoming in 2011.

142 Africare, Oxfam America, WWF–ICRISAT Project (2010) 'More Rice for People, More Water for the Planet', WWF–ICRISAT Project, Hyderabad, India.

143 P. Collier and S. Dercon (2009) 'African Agriculture in 50 Years: Smallholders in a Rapidly Changing World?', Presentation in the FAO High-Level Expert Forum, ftp://ftp.fao.org/docrep/fao/012/ak983e/ak983e00.pdf

144 Low yields do not mean low productivity. The former measures harvest per unit area. The latter measures harvest divided across all factors of production: land, capital, and so on.

145 'A Special Report on Feeding the World', *The Economist*, Feburary 24, 2011.

146 UNEP (2010) *Africa Water Atlas: Improving the Quantity, Quality and Use of Africa's Water*, http://na.unep.net/atlas/africaWater/downloads/chapters/africa_water_atlas_123-174.pdf

147 IFAD (2011) 'High-yielding varieties of rice have been adopted on more than 200,000 hectares of farmland', *Rural Poverty Report,* http://www.ifad.org/rpr2011/report/e/rpr2011.pdf

148 http://www.ifad.org/operations/food/farmer.htm

149 Down from 20.4% in 1983. Calculated from OECD DAC5 Official Bilateral Commitments by Sector database. Includes forestry and fishing.

150 Progress has been uneven – but the number of countries reaching or exceeding the goal had doubled by 2006, CAADP (2009) 'How are Countries Measuring up to the Maputo Declaration?', CAADP Policy Brief, June 2009.

151 *The Economist*, 25 February 2011.

152 http://www.weforum.org/issues/agriculture-and-food-security/index.html

153 The food and drinks company, Mars, recently entered into a collaboration with IBM and the US Department of Agriculture to sequence the cocoa genome and make it publicly available, arguing that in the long-run this will improve the sustainability of cocoa production, most of which comes from small farmers. See www.cacaogenomedb.org

154 The Cartagena Dialogue for Progressive Action is an informal space open to all countries negotiating towards an agreement under the UNFCCC. It aims to provide a forum in which parties can step outside of their traditional negotiating blocs and openly discuss their positions and the rationales behind them, with a view to consensus building and furthering progress within the formal negotiations. It is currently attended by 30 countries.

155 UNEP (2011) *Towards a Green Economy.*

156 'Sustainable Bioenergy: A Framework for Decision Makers', UN–Energy, 2007.

157 Based on a one-third increase in oil prices over the next two years. http://blogs.odi.org.uk/blogs/main/archive/2011/03/16/oil_prices_poor_countries_africa_shocks_vulnerabilities.aspx?utm_source=mediarelease&utm_medium=email&utm_campaign=20110316

158 http://news.mongabay.com/2010/1201-brazil_deforestation_2010.html

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162 http://www.ft.com/cms/s/0/85632536-74ed-11df-aed7-00144feabdc0,dwp_uuid=e11d5c1a-74ee-11df-aed7-00144feabdc0.html#axzz1IGpyVZcG

# Images

Cover: Farmers in Astuare region, Ghana. Chris Young/Oxfam

p3 The Phon family work farm their rice paddy in Kompong Thom, central Cambodia. Abbie Trayler-Smith/Oxfam

p4 & 25 Rice sellers Sok Nain and Mach Bo Pha in Dem Kor Market in Phnom Penh. Sellers say their profits have fallen by 30 per cent as rice prices in Cambodia soared in 2008. (Cambodia 2008) Abbie Trayler-Smith/Oxfam

p6 Families in Flinigue, Niger receive food vouchers from Oxfam. The vouchers give them the freedom to choose what they buy in a specified store. (August 2010) Caroline Gluck/Oxfam.

p7 Kimba Kidbouli, 60 years, Niger. Caroline Gluck/Oxfam.

p9 Women from Dola village construct a pond to irrigate their vegetable gardens. Nepal's hill districts have lacked investment in agriculture and are faced with a rise in food prices and reduced crop yields as a result of climate change. (Nepal 2010). Tom Pietrasik

p10 Yolanda Contreas Suarez, 53, 8 children, farmer and housewife, San Crostóbal. Lucy Brinicombe/Oxfam

p14 Charles Kenani standing in his rice field. The Oxfam-funded Mnembo Irrigation scheme has helped 400 families in Malawi by transforming their traditional small low-yield crops into year-round, high volume harvests that provide continuous food and a source of income. (Malawi, 2009). Abbie Trayler-Smith

p16 Rice prices in Cambodia soared in 2008. The pile of rice on the left was bought in 2008, and the pile on the right shows what the same money would have bought in 2007. (Cambodia, 2008). Abbie Trayler-Smith/Oxfam

p28 & 45 Noograi Snagsri now spends less time working in her fields thanks to the new integrated farming system where water is piped directly into the fields. In 2007 farmers in Yasothorn Province, north-east Thailand, experienced the longest dry spell in decades. (Thailand, 2010). Mongkhonsawat Luengvorapant/Oxfam

p29 Harvested palm fruit, the raw material for palm oil, used to produce various food stuffs, soap and biofuel. Tom Greenwood/Oxfam GB

p33 Farmer Norma Medal Sorien. Norma has no legal right to farm the land, which belongs to her brother. But she feels hopeful because this is the first year of a drip-water project, funded by Oxfam, which will make irrigation more effective and reduce the amount of water used. (Mexico, 2010). Lucy Brinicombe/Oxfam

p37 Suren Barman with the cow he was forced to sell. 'The price of essentials is excessively high. I cannot afford to buy food regularly. I am gradually selling my belongings to maintain my family.' (Dinajpur, Bangladesh 2008). Oxfam GB

p40 US food aid: at a government food distribution centre, a sack of corn-soy blend waits for distribution. (Ethiopia, 2008). Sara Livingston/Oxfam America

p41 Weighing rice at the Gor Khamhi centre for the Public Distribution System. While an important safety net for hungry people, India's Public Distribution System (PDS) doesn't properly satisfy the calorific needs of vulnerable rural communities. (India, 2011). Tom Pietrasik/Oxfam

p42 Single mother and farmer Bayush has hopes of a better life now that she is being trained as part of the Enterprise Development Programme to sell sesame seed oil. The Oxfam-supported Assosa farmers' enterprise aims to earn more from their vegetable and seed crops. (Ethiopia, 2010). Carol Salter/Oxfam

P44 Osvaldo Penaranda, 48, with his tomato plants on the elevated seedbeds (camellones). Flooding is increasingly unpredictable in this area of the Amazon Basin. (Bolivia, 2007) Mark Chilvers

p48 A windmill pumps water to a storage tank to supply Manoon Phupa's farm. In 2007 farmers in Yasothorn Province, north-east Thailand, experienced the longest dry spell in decades. Oxfam has worked with local organization Earth Net Foundation since 2004, to promote organic agricultural production and fair-trade marketing with farmers. (Thailand, 2010). Mongkhonsawat Luengvorapant/Oxfam

p49 Roni, Marta, and Denilson eating their free lunch at the Vila Irma Dulce Creche, Brazil. The community lobbied for the school, the teachers, and the free lunches for the children. (Brazil, 2004). Gilvan Barreto/Oxfam

p52 Local residents of Trinidad, Bolivia, cross a bridge between elevated seedbeds (camellones). Flooding is increasingly unpredictable in this area of the Amazon Basin. (Bolivia, 2007). Jane Beesley/Oxfam

p54 Edward Chikwawa holding the seeds he is about to plant at the Chitimbe Irrigation site. (Malawi, 2008) Nicola Ward/Oxfam.

p59 Leyla Kayere, 76, weeding her tomatoes. The Oxfam-funded Mnembo Irrigation scheme has helped 400 families in Malawi by transforming their traditional small low-yield crops into year-round, high volume harvests that provide continuous food and a source of income. (Malawi, 2009). Abbie Trayler-Smith

p61 A grandmother and her granddaughter walk home from the mustard harvest in Belauhi village, India. Belauhi's farmers have been learning new agricultural techniques such as irrigation and the use of new and drought resistant crops including pulses and oil seeds have provided residents with more food security. (India, 2011). Tom Pietrasik

p63 Tomatoes, Malawi. Abbie Trayler-Smith

p64 Mandefro Tesfay joined an Oxfam-funded seed multiplication programme in Ethiopia in 2005. Farmers learn to improve yields and get access to fertilizers and improved drought-resistant and early maturing seeds. (Ethiopia, 2009). Caroline Gluck/Oxfam

p66 Spices for sale, India. Tom Pietrasik

p67 Nilanthi (right) alongside Kusumawathi (left) picks tea on her own land and is secretary of the Diriya Smallholder Tea Society representing 42 smallholder tea producers in the area, all of whom own less than an acre of land. Caroline Gluck/Oxfam

Back cover: Olive harvest at the Sir cooperative. David Levene/Oxfam

**The global food system works only for the few – for most of us it is broken. It leaves the billions of us who consume food lacking sufficient power and knowledge about what we buy and eat and the majority of small food producers disempowered and unable to fulfil their productive potential. The failure of the system flows from failures of government – failures to regulate, to correct, to protect, to resist, to invest – which mean that companies, interest groups, and elites are able to plunder resources and to redirect flows of finance, knowledge, and food.**

This report describes a new age of growing crisis: food price spikes and oil price hikes, devastating weather events, financial meltdowns, and global contagion. Behind each of these, slow-burn crises smoulder: creeping and insidious climate change, growing inequality, chronic hunger and vulnerability, the erosion of our natural resources. Based on the experience and research of Oxfam staff and partners around the world, *Growing a Better Future* shows how the food system is at once a driver of this fragility and highly vulnerable to it, and why in the twenty-first century it leaves 925 million people hungry. The report presents new research forecasting price rises for staple grains in the range of 120–180 per cent within the next two decades, as resource pressures mount and climate change takes hold.

*Growing a Better Future* supports a new campaign with a simple message: another future is possible, and we can build it together. Over the coming years, decisive action around the world could enable hundreds of millions more people to feed their families and prevent catastrophic climate change from destroying their (and our) futures. Networks of citizens, consumers, producers, communities, social movements and civil society organizations will demand change – shifting political and business incentives through the decisions they take and the choices they make. Oxfam's Grow Campaign will work with these groups, and many others like them, to build irresistible momentum for change.

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