

FEEDING FRENZY

The New Politics of Food

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INTRODUCTION

A gleaming steel fence is going up in a remote part of Africa. An alien construction, it dissects a landscape of open fields, mud huts and dirt tracks, where straight lines are elusive. On one side, diesel-powered tractors chew up the soil, containers packed with seed and fertiliser wait to be opened, and foreign managers look forward to a bumper harvest. On the other side, a local farmer in a tattered shirt scratches at the soil with a simple hoe, fearing that he may not be able to grow enough food for his family. Villagers cluster around the gate to the property, looking for work but muttering that the land rightly belongs to them. There are rumours that the young men are arming themselves so they can resist what they regard as a foreign 'land grab'.

This story is playing out on the western fringes of Ethiopia, in a steamy region close to the border with South Sudan. The land has been acquired by a billionaire sheikh as part of an initiative launched by the Saudi government, which wants to grow more of its food abroad. Ethiopia, like most of Africa, may be better known for food scarcity and famine, rather than food abundance and exports, but this is one of dozens of similar projects to be launched across the continent since 2008.

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The appearance of steel fences and satellite-guided tractors in one of the poorest parts of the world is a direct result of the turmoil that has gripped global food markets over the past five years. Food prices more than doubled between 2007 and 2008. Grain stocks fell to a dangerous level, and there were fears that supplies would not be available at any price. After a brief dip, prices rebounded in 2010 and jumped again in 2012. Food is a lot more expensive than a decade ago and does not look like getting any cheaper. We seem to be stuck in a never-ending food crisis.

Everyone can see the effect in their supermarket and restaurant bills. Higher food prices squeeze our incomes, meaning there is less to spend on everything else. But for the poor of the world the impacts are more dramatic. About one in eight people now go hungry each year. Millions of people have been forced deeper into poverty. High prices have sparked food riots and demonstrations in more than thirty countries. In January 2011 an iconic photograph emerged of a protester in Tunisia facing down riot police armed with nothing more than a baguette – a symbol of how anger over food helped spark the ‘Arab Spring’.

Ferment in food markets has been seized upon by professional doom-mongers who believe the human race is living beyond its means. ‘The Coming Famine’, ‘World on the Edge’, ‘Climate Change Peril’, ‘Peak Food’, ‘Peak Oil’, even ‘Peak Dirt’ – these are some of the ideas and book titles that have circulated in recent years, all warning of an impending food collapse. Malthus, the nineteenth-century prophet of population catastrophe, is back in fashion. And another controversial idea is re-emerging after a long period of stigmatisation – population control. Rich people in rich countries are once more telling poor people in poor countries to have fewer children.

There is no doubt that we are entering a challenging time. The human population will grow from 7 to 9 billion

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over the next forty years. Every year there are an extra 80 million mouths to feed. As the global middle class swells in size, people are demanding more expensive diets, which adds to the pressure on the planet's resources. There is a question mark over the sustainability of modern agriculture because of its dependence on fossil fuels, the damage it inflicts on the environment and its vulnerability to a changing climate. Even the UK government's chief scientist, Professor Sir John Beddington, has warned that 'the food system is failing'.

Can we feed a world of 9 billion by 2050? Is the current market turmoil an early sign that the global food system will not cope?

This book tries to answer these questions. It describes how the global food system works today, highlighting the huge inequalities and imbalances that pervade it. It reveals the real reasons behind the recent increase in food prices, exploring issues such as the role of biofuels, climate change, financial speculation and the rise of the Asian consumer. It looks at how demand for food is likely to develop over the next forty years and investigates whether food supplies will be able to keep up.

At the most basic level, this means assessing the biophysical potential of our planet – the amount of land, water, energy and other natural resources that is available. It is a matter of hard science. But just because we can produce enough food does not mean that everyone will eat. Food security is determined not only by how much food is available but by whether people can access it and afford it. Therefore, the real answer will depend on the social, economic and political dimensions of the global food system. In particular the fate of millions of people will be determined by whether nations choose to compete or collaborate in a time of relative scarcity.

Judging by the response to the recent crisis, we are in for a period of intense competition. This book lifts the lid on

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the extraordinary scramble for food that is now taking place around the world. It reveals how countries are manipulating trade and hoarding agricultural surpluses, even if this starves their neighbours; how financial investors are distorting markets through their willingness to bet on anything; how private corporations are rushing to secure supply chains before their competitors can get there; and how a bizarre array of fortune-hunters and policymakers are scrambling to acquire farmland in some of the poorest countries of the world, in ways that echo the colonialism of the past. Many people no longer trust markets to provide. Food has become a geopolitical issue of the highest importance.

If these trends continue, they could lead to a nightmare scenario of exploitation, hunger and conflict. But this book also maps out an alternative vision that could deliver better outcomes. It is a way forward that addresses the heated debates that often flare up in connection with the future of food and farming. It overcomes simple dichotomies such as organics versus genetic engineering, family farms versus large commercial estates, free trade versus government subsidies. It builds on the work of innovators all around the world who have found ways to produce more food with fewer resources while generating wealth for farmers and consumers. Which path will the world choose? The answer will matter to politicians and generals, to farmers and investors, to consumers and citizens – and, not least, to the African farmers watching the steel fences go up around their land.

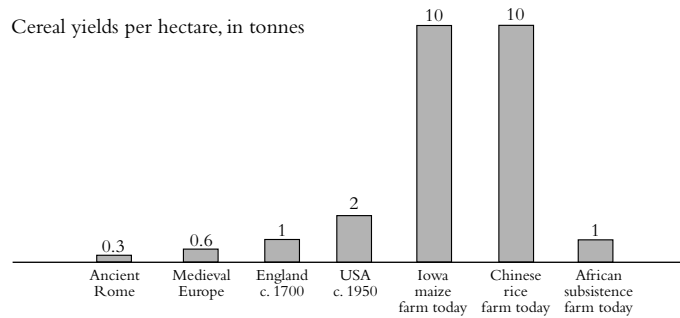
The sense of crisis that pervades the world's food system is surprising because it came after a long period when food and agriculture were taken for granted. When I grew up in Ireland in the 1980s, the newspapers were full of stories of butter mountains and wine lakes forming across the European

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Community. For the next twenty years, the main issue was what to do about food prices that were too *low*. Politicians fretted about what to do with food surpluses; farmers clamoured for more government subsidies; development experts lamented the poverty being inflicted on peasants in poor countries. Yet, beneath a veneer of equilibrium, the world's food system was marked by injustice, inequality and a basketful of economic perversities. Maybe it was inevitable that it could not be sustained. The next two chapters of the book explain how this situation came about.

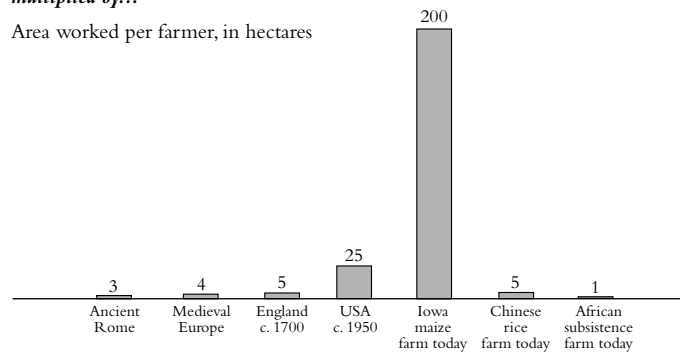
THE UNEVEN PACE OF AGRICULTURAL INNOVATION

Cereal yields per hectare, in tonnes



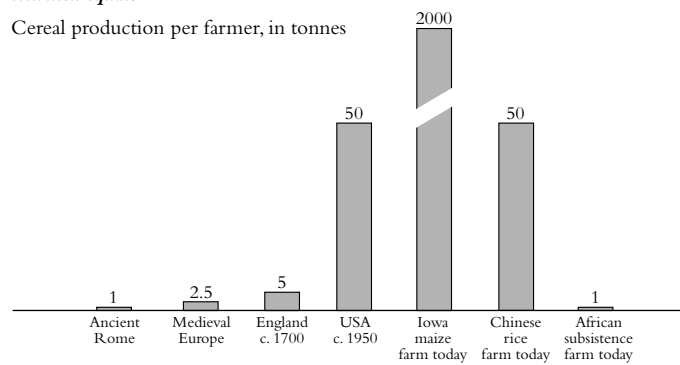
multiplied by...

Area worked per farmer, in hectares



...which equals

Cereal production per farmer, in tonnes



Source: M. Mazoyer & L. Roudart, *A history of world agriculture from the neolithic age to the current crisis*, Earthscan, 2006

A BRIEF HISTORY OF FOOD

The origins of agriculture, how it developed and the huge gaps that exist between farmers today

Shennong, Emperor of the Five Grains, the Divine Farmer, is venerated as the father of Chinese agriculture. According to legend, he was born with the head of an ox and the body of a man. He spoke after three days, walked within one week, and was able to plough a field at the tender age of three – not only that, but he is said to have invented the plough in the first place. Legend goes that before he appeared his people were starved and sickly, barely surviving by eating grass. Shennong taught them how to farm and introduced plants that could serve as food, herbs and medicines. A walking laboratory, he had the unusual benefit of a transparent stomach and was able to test hundreds of plants by seeing the effect they had inside his body. One story tells how he became the first person to taste tea, after some charred leaves were blown into a pot of boiling water. But his most important discoveries were the five grains that underpin Chinese civilisation – wheat, rice, millet, soybean and sorghum. Thanks to these grains, his people enjoyed hundreds of years of peace and abundance.

The story of Shennong reveals the building blocks of agriculture, which societies have tried to improve and perfect ever

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since. It starts with the selection and cultivation of plants that can turn solar energy into the carbohydrates, proteins, fats and micronutrients we need to survive. The world has roughly 250,000 plant species, of which about 50,000 are edible, and of which we regularly eat no more than 250. They include a range of cereals, roots, tubers, fruits, vegetables, herbs, nuts, spices and oils. In addition, we have domesticated animals, which convert less palatable plants into more nutritious forms. Today, meat and dairy products provide about one quarter of human protein intake (and fish another 5–6 per cent). Nevertheless, the legend of Shennong shows how our farming systems have been designed around a small number of crops that provide energy in bulk. Today, 15 crops supply 90 per cent of our calories, and 3 crops – wheat, rice and maize – provide 60 per cent of our calories. The latter are grass plants, which have particular advantages because their grains are energy-rich, contain valuable proteins, store well and can be processed into many kinds of food.

The other building blocks of agriculture serve to maximise the production of these useful plants. All living things need water to grow. Shennong taught his people how to build wells and how to plant seeds at the right time to benefit from seasonal rains. Plants require nutrients such as nitrogen, phosphate and potassium, which are taken from the land when each crop is harvested. Shennong renewed fertility by resting fields and recycling dung and urine from farm animals. Another challenge is minimising the impact of weeds and pests. Shennong invented the plough and the rake, which helped farmers to break up weeds. All these interventions require work, which brings us to the last component of agriculture – applying power. Mechanical power is needed to pull ploughs, harvest crops, herd animals, process food and transport loads to and from the fields. Being half ox, Shennong had little

A BRIEF HISTORY OF FOOD

trouble pulling heavy implements through the fields. For mere humans, it was more of a struggle.

These five processes – selecting plants and animals, managing water, renewing fertility, protecting from pests and applying power – constitute the basics of a farming system. They appeared in different parts of the world, starting about 10,000 years ago, bubbling up like springs from the underlying reserves of human ingenuity. These streams of agricultural development then proceeded at various paces, sometimes accelerating, at other times stagnating, sometimes joining together to follow a common path, at other times breaking off in unique directions. The pace of change accelerated in the twentieth century, propelling some societies forward but leaving others high and dry. This history can help us understand the contours of the global food system today.

Early origins

Archaeologists believe that farming developed independently in China, Central America, Papua New Guinea, tropical Africa and, probably earliest of all, in the Fertile Crescent, an arc stretching from present-day Iran, through southern Turkey and down to the Levantine coast of the eastern Mediterranean. This region was unusually rich in wild varieties of grass plants, for example wheat and barley, which could be adapted for human cultivation. It also contained wild animals, such as sheep and goats, whose herding instincts made them amenable to domestication.

Farming communities first developed in the fertile river valleys. The annual floods not only provided water but also deposited a fresh supply of nutrients on the land after each harvest, renewing fertility. The soils on the flat, open flood plains were easy to work. To kill weeds, farmers scratched the soil with an ard, a basic v-shaped wooden implement that

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functioned more like a hoe than a plough. In most cases, they hauled the ard themselves – people were the beasts of burden.

This farming system underpinned the ‘hydraulic civilisations’ that emerged on the Tigris, Euphrates, Nile and Indus rivers from about 3500 BCE (Before Common Era). Flood waters were controlled by a network of canals and dykes, and building and maintaining this infrastructure required a high degree of social organisation. A ruling class emerged to organise the people, together with the earliest forms of writing, mathematics and government administration. This system generated a reliable food surplus – each farming household produced more than was needed to sustain itself. This freed others to become soldiers and priests, shoemakers and metalworkers, scribes and bureaucrats, kings and pharaohs. The idle time between one season’s harvest and the next planting also meant that large numbers of people could be put to work erecting grand monuments in honour of their gods and rulers. There would have been no pyramids without full granaries.

As populations grew, and farmers stepped out of the river valleys, they faced new challenges. Perhaps the most daunting was how to replace soil nutrients without the benefits of annual floods. It might be possible to get a good crop for one or two years, but yields would then inevitably fall as the soil was exhausted. In response farmers turned to shifting cultivation, also known as swidden agriculture or ‘slash and burn’. Farmers cut the native vegetation, set it on fire, and, after allowing the ash to fertilise the soil, planted a crop. Rather than trying to maintain the fertility of the land, they simply moved on once yields dropped. They would then return many years later, after the natural vegetation had regrown, to start the cycle again. With a low population density, this system could be practised within an area indefinitely, so long as enough time was given for the land to recover. But population pressure, together with