

# Thirteen

## 'WE ARE WHAT WE EAT': THE AGRO-FOOD INDUSTRIES



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## TRANSFORMATION OF THE FOOD ECONOMY: THE 'LOCAL' BECOMES 'GLOBAL'

The production of food addresses the most basic of all human needs. Like the activities discussed in the previous chapter, it is based upon the *extraction* of materials from the natural environment. In principle, food production is a *renewable* activity, although over-production, soil erosion and water shortages can, in effect, make agriculture impossible under certain conditions. Having changed relatively slowly over long periods of time,<sup>1</sup> the production, distribution and consumption of food have been transformed during the past four decades. They have become increasingly *industrialized*.<sup>2</sup> Basic subsistence is still the norm for millions of people, and starvation is always imminent, but for millions of others food has become as much a statement about lifestyle as about survival. According to the UN Food and Agricultural Organization, '842m people – one in eight – already go hungry. At the other end of the scale, many countries face ballooning health bills because of overweight populations'.<sup>3</sup> 'Abundance amidst scarcity' is a glaring paradox of today's world.<sup>4</sup>

In some respects, the modern agro-food industries may seem little different from other manufacturing industries. But, despite the industrialization of much food production, these are highly complex and geographically differentiated activities. The basic fact remains that food production is fundamentally different from other manufacturing industries in one particular way: it is literally *grounded* in biophysical processes:

The role of biology in plant and animal growth is key ... on a farm – unlike a factory – it is the biological time necessary for plant and animal growth that dictates the work schedule ... In addition, the land-based character of farm production poses severe constraints to industrialization ... because land is a fixed and limited resource, and because land markets are deeply colored by localized social conditions, farmers cannot easily or quickly adjust their investment in land.<sup>5</sup>

Food *production* remains an intensely *local* process, bound to specific climatic, soil – and often socio-cultural – conditions. At the same time, certain kinds of local production, notably high-value foods, have become increasingly *global* in terms of their *distribution* and *consumption*. For the affluent consumer, with access to the overflowing cornucopias of supermarket shelves, the seasons have been displaced by 'permanent global summertime' (PGST).<sup>6</sup> But such apparently idyllic circumstances for affluent consumers have a dark and contentious side.

Producing food for a global market requires huge capital investment and gives immense power to the transnational food producers and the big retailers. It creates serious problems – as well as opportunities – for food suppliers as they become increasingly locked into (or out of) transnational agro-food production networks. Global food production and distribution create huge environmental disturbances in terms of excessive

exploitation of sensitive natural ecosystems, the application of chemical fertilizers and pest controlling agents, the increasing attempts to genetically modify seeds, plants and even animals and to ‘patent life’, and the transportation of high-value foods (HVF) over vast geographical distances. These processes make agro-food an intensely sensitive industry, raising the fundamental question of ‘who owns nature?’<sup>77</sup>

Food safety, including the ethics of genetic modification of seeds, plants and animals, has become a central issue. In the past few years, for example, there have been several serious food safety scares: BSE ('mad cow disease'), foot (hoof) and mouth disease, avian flu, swine flu and, most recently, the 'horse meat scandal' in Europe. These have a huge impact on agro-food trade and on the livelihoods of farmers, growers and distributors. They create massive fluctuations in consumer buying patterns, often out of ignorance. At the same time, there is widespread scepticism – and considerable fear – of genetic modification (GM). Both food safety and GM help to stimulate consumer resistance to the products of the global agro-food industries and to reinforce demands for a return to local sourcing of organically grown products. The agro-food industries have become a battleground with several ‘fronts’: between producers and consumers, between producers and governments (not least because agro-food is one of the most heavily regulated industries), and between governments.

## AGRO-FOOD PRODUCTION CIRCUITS

Production circuits in the agro-food industries are immensely varied. In the case of traditional commodities, like grains, the circuit is relatively simple (though more intricate than in the past). In the case of high-value foods, however, which are the primary focus of this chapter, the situation is far more complex. We provide several examples here.

Figure 13.1 shows the highly complex structure of the US chicken (broiler) production circuit, an industry which has become increasingly dominated by very large integrated producers. From a producer’s perspective, a major advantage of integrated chicken production is that it facilitates the coordination of chicken raising processes which are subject to intrinsic biological lags. It is not possible to speed up the ‘assembly line’ as can be done in automobiles. It is, however, as much a ‘just-in-time’ system as that in automobile production. At the same time, integration gives closer control over product quality and food safety.

Figure 13.2 displays the fresh fruit and vegetable production circuit between Kenyan and Zimbabwean producers and European consumer markets. The key point to make about the fruit and vegetable production circuit is that it is driven by the large supermarket chains, rather than by the producers of the crops themselves.

Figures 13.1 and 13.2 both depict conventional agro-food production circuits. However, there are other, ‘alternative’, circuits which involve the production of organic food and/or the involvement of various kinds of non-economic actors, notably fair trade organizations. Such alternative food networks are driven by

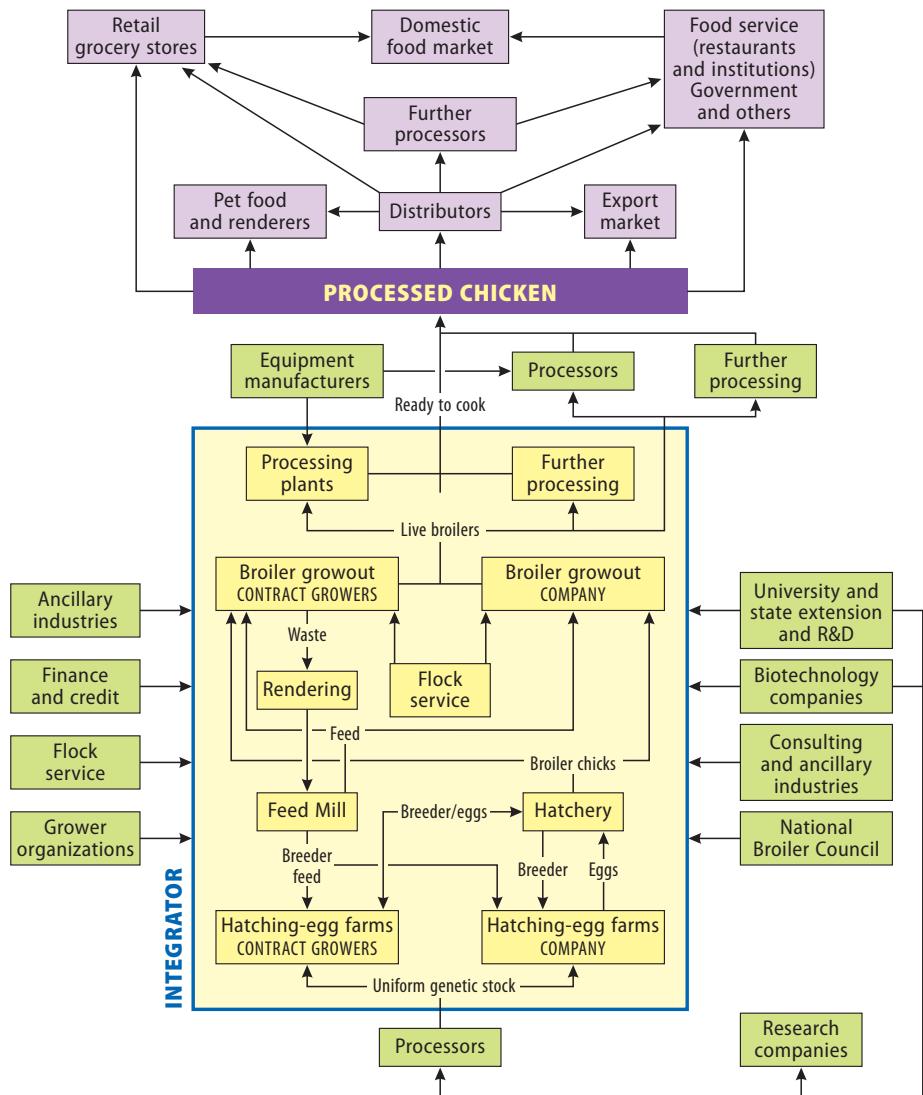


Figure 13.1 The US chicken production circuit

Source: based on Boyd and Watts, 1997: Figure 8.4

increasing concerns with food quality, food safety and fairer treatment of farmers/growers in developing countries. These networks ‘redistribute value through the network against the logic of bulk commodity production ... reconvene “trust” between food producers and consumers ... and ... rearticulate new forms of political association and market governance’.<sup>8</sup> Figure 13.3 provides one example of an alternative agro-food production circuit: fair trade coffee.<sup>9</sup>

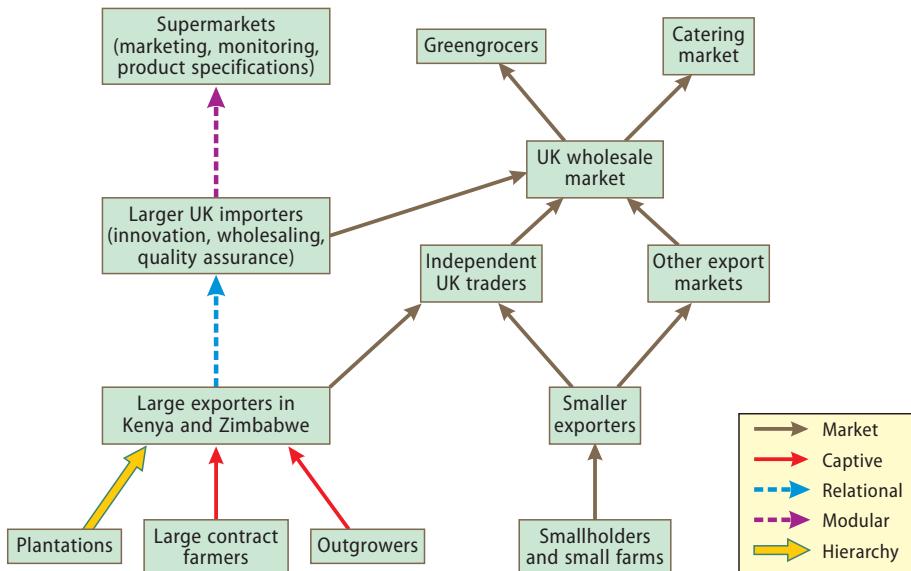


Figure 13.2 The fresh vegetable production circuit

Source: based on Dolan and Humphrey, 2002: Figure 3

The kind of food circuit shown in Figure 13.3 is just one of several alternatives to the tightly controlled, highly integrated, industrially based agro-food circuits that have become so dominant in recent years. Currently, there is also a growing (re-)emergence of explicitly *territorially based* food production networks.

Overall, the agro-food industries seem to be polarizing into:<sup>10</sup>

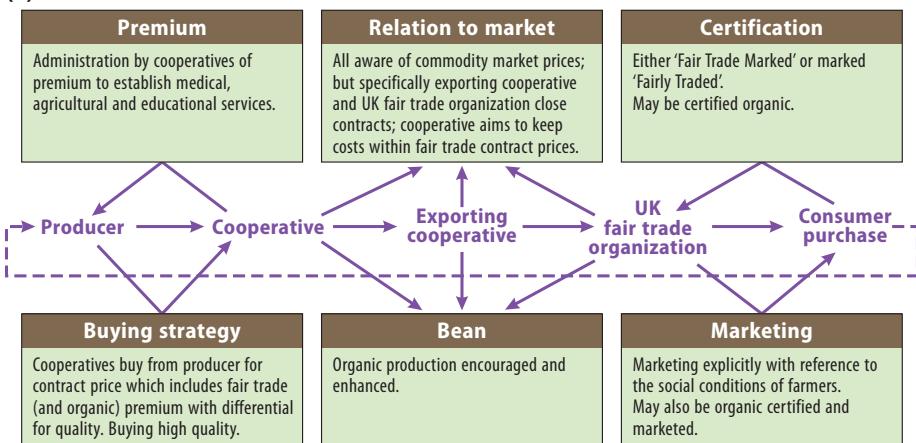
- *standardized-specialized* production processes responding to economic standards of efficiency and competitiveness;
- *localized-specialized* production processes trading on the basis of environmental, nutritional or health qualities.

## GLOBAL SHIFTS IN THE HIGH-VALUE AGRO-FOOD INDUSTRIES

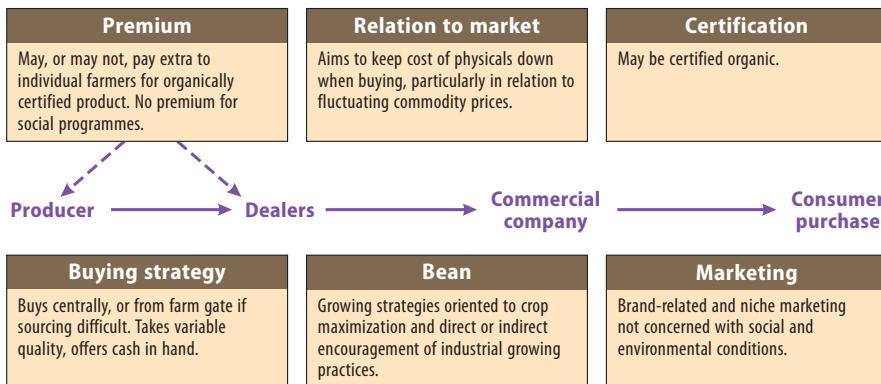
Globally, *chicken* production is dominated by three countries, the USA, China and Brazil, which, together, account for almost half the world total (Figure 13.4). Until very recently, the USA was also the world's leading exporter of chickens but it has been overtaken by Brazil.

Fresh fruit and vegetable production is also heavily concentrated at the global scale (Figure 13.5). China (38 per cent of the world total) is by far the world's biggest

## (a) A fair trade coffee network



## (b) A commercial coffee network

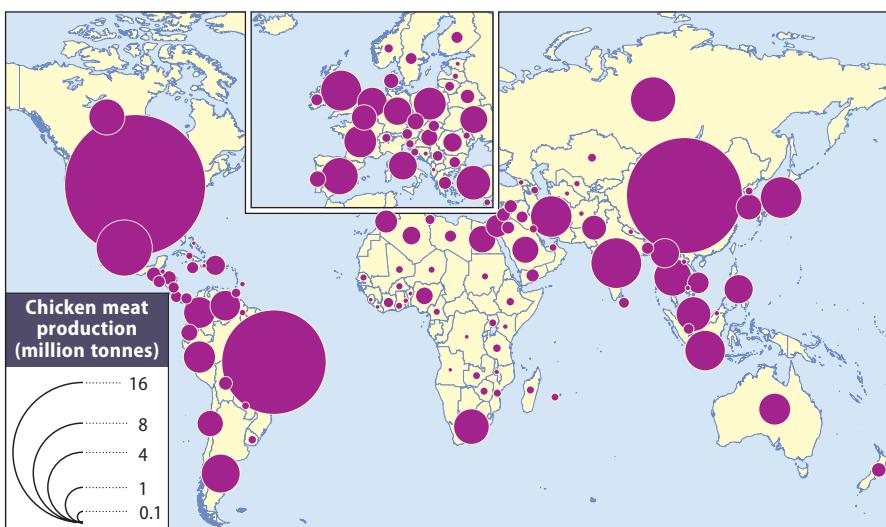


**Figure 13.3** 'Alternative' agro-food production circuits: fair trade and commercial coffee

Source: based on Whatmore and Thorne, 1997: Figure 11.2

producer. India is far behind at 9 per cent, followed by the USA (4.5 per cent), and Brazil (3.4 per cent). However, the composition and pattern of trade in fruits and vegetables has changed markedly during the past two decades.<sup>11</sup> Export growth rates of traditional products (e.g. oranges, canned pineapples, canned mushrooms, concentrated orange and apple juices) were very low. Non-traditional products grew most rapidly: 'Some commodities – mangoes, frozen potatoes, single-strength orange and apple juices, fresh mushrooms, garlic, sweet corn (prepared or preserved), and avocado – achieved, or were close to, double-digit growth rate in their exports.'<sup>12</sup>

The geography of global trade in fruits and vegetables (Figure 13.6) is strongly regionalized. Not only are Europe and North America the leading importers of such products (along with Japan), but they are also substantial exporters. Both



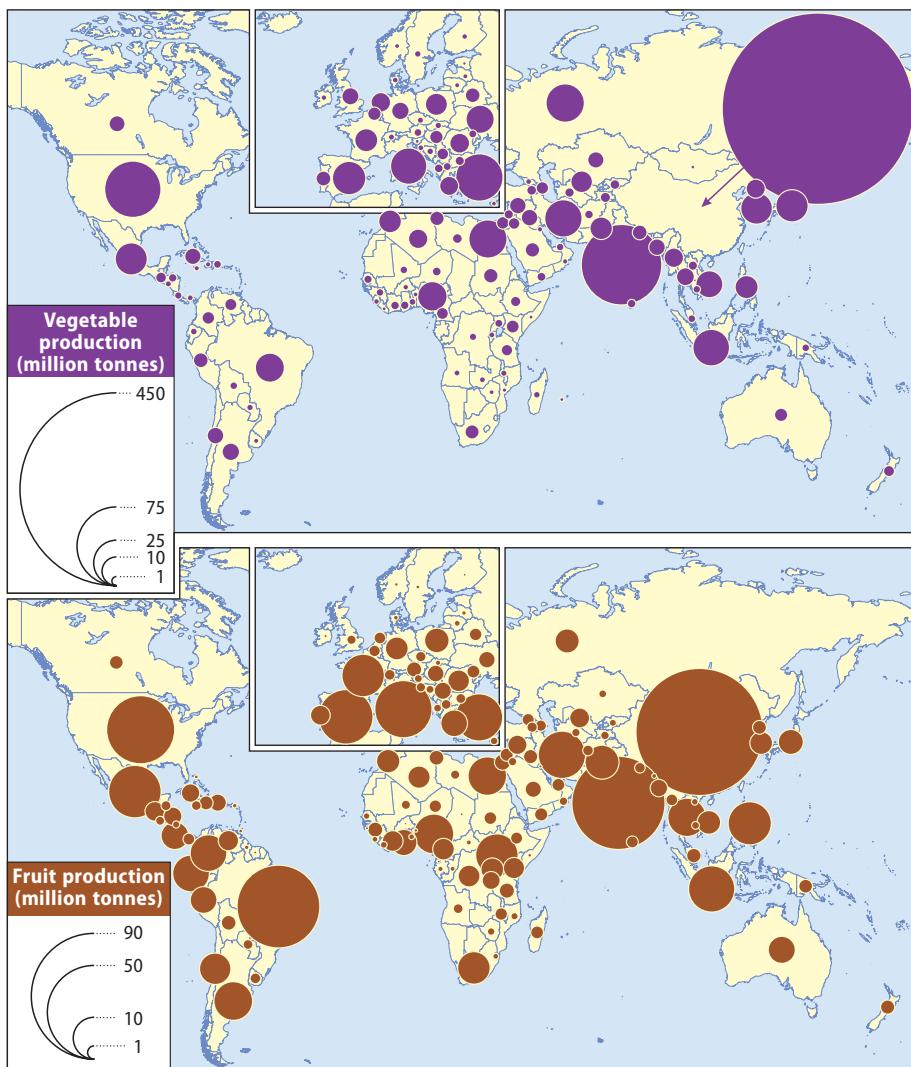
**Figure 13.4 Global production of chickens**

Source: FAO Statistical Yearbook, 2009: Table B11

regions contain a variety of climatic conditions conducive to certain kinds of fruit and vegetable production: the Mediterranean rim in the case of Europe; Mexico and the Caribbean in the case of North America. Increasingly, southern hemisphere countries have become especially significant, producing and exporting a wide variety of products for the affluent markets of the northern hemisphere. The key, of course, is the seasonal difference between the two hemispheres.

Finally, Figure 13.7 maps global exports of coffee. As coffee aficionados will know, there are two major types of coffee bean: arabica beans, grown at higher altitudes and more difficult to grow; and robusta beans, grown on the low lands in the humid tropics. In general, arabica beans are regarded as being of higher quality. Four countries generate 60 per cent of total coffee exports: Brazil (28 per cent, of which 95 per cent is arabica), Vietnam (17 per cent, all robusta), Colombia (8 per cent, all arabica) and Indonesia (6 per cent, 67 per cent robusta).

The geography of production and trade in high-value food combines elements of global, regional and local scales. Globally, the emergence of southern hemisphere producers, basing their advantage on their seasonal complementarity with the temperate markets of the northern hemisphere, generates massive flows of long-distance trade. Regionally, the existence of areas of more exotic production within the major regional markets of North America, Europe and East Asia has led to strong intra-regional trade flows of high-value foods. Locally, the increasing interest in alternative food networks, especially those which focus on local (often organic) production, has created much shorter movements of agro-food products.

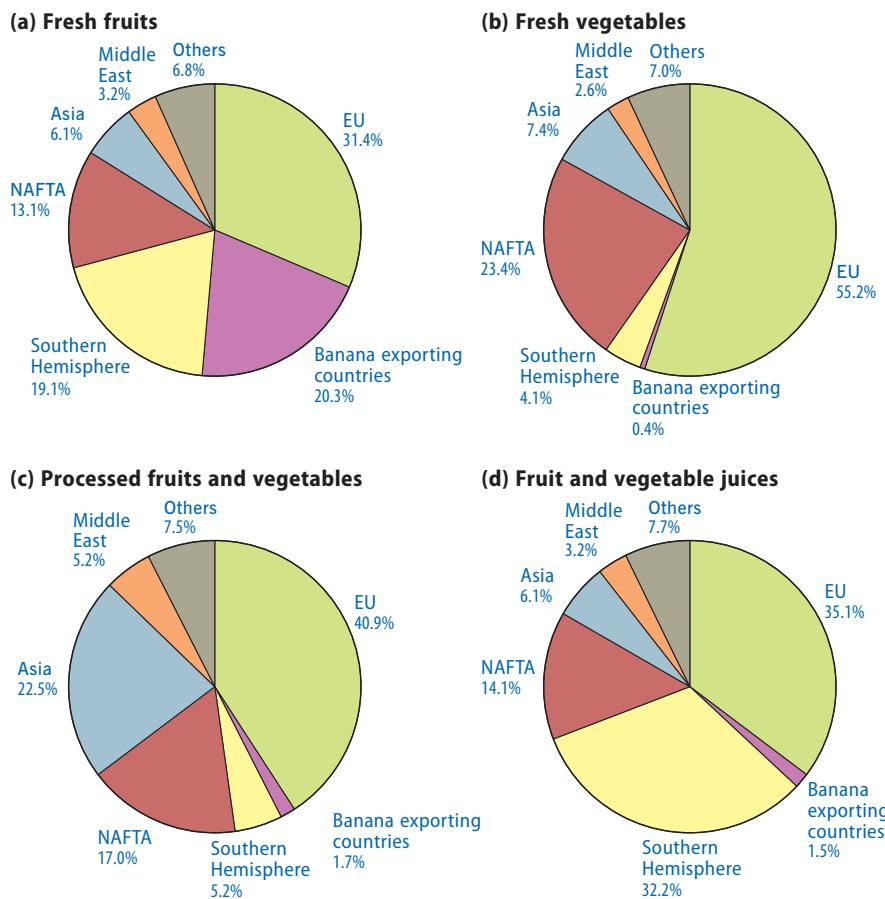


**Figure 13.5 Global production of fruits and vegetables**

Source: FAO Statistical Yearbook, 2009: Tables B6, B7

## CONSUMER CHOICES – AND CONSUMER RESISTANCES

For most of human history people have had to struggle to obtain enough food to survive. Only a minuscule proportion of the population could afford to obtain the more exotic foods from distant places. That is still the case for millions of people



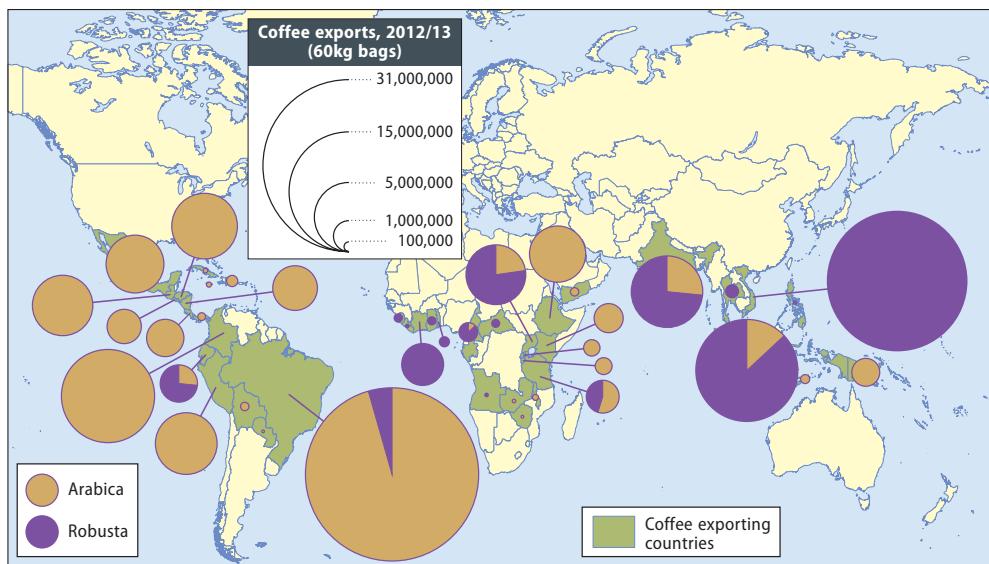
**Figure 13.6** Origins of imports of fruits and vegetables to the world's 30 leading importers

Source: based on Huang, 2004: Figure 2.2

in the poorest countries and for many people in affluent countries. But as incomes have risen for many through economic growth, and with the associated urbanization of the population, demand for food has changed dramatically.

The relationship between food production and consumption is complex. What we choose to eat has become a far more intricate process: a mix of taste, culture, religion, health concerns, ethical position and lifestyle as well as of disposable income. On the one hand, food producers strive to produce and market foods that will attract the largest number of consumers (and enhance profits); on the other hand, consumers themselves have widely varying 'food agendas'.

In the affluent consumer markets of North America, Europe and parts of East Asia, it is the *changing patterns* of demand and consumption, rather than the overall level of food consumption, that are especially important. Increasing affluence



**Figure 13.7 Exporters of coffee**

Source: International Coffee Organization data, 2013

stimulates a desire for greater choice in food products. As a result – but also driven by the marketing strategies of the transnational food producers – the market for food has become highly segmented.

At one level, this is reflected in the huge diversity of products sold through the major supermarkets and, especially, their provision of all-year-round perishable foods from across the globe. It is reflected in the rapid growth of new food products such as the chilled convenience food market. It is reflected in the ever-changing dietary fashions of the affluent in search of the route to beauty and long life and in the development of specialist ‘lifestyle’ drinks markets, for example the ‘coffee revolution’ driven by Starbucks’ colonization of much of the world.<sup>13</sup>

At the same time, however, there is increasing *consumer resistance* to many of the food products being sold through the big supermarkets, as well as to the more traditional providers of fast food. In the case of GM foods, there is considerable difference in consumer attitudes between the USA, where GM crops tend to be more acceptable, and Europe, where there is greater resistance.<sup>14</sup> There are also pressures to ‘re-localize’ food production: both to rely more on local sources and to stimulate and protect areas of local production of key products. Such resistances derive from a combination of concern over environmental damage and fears about the safety of foods grown using what are increasingly regarded as suspect or ethically unacceptable methods. For example, ‘fresh’ supermarket food

is predicated on a new nature-defying order where every conceivable fruit and vegetable grown anywhere is available all the time ... PGST

[Permanent Global Summertime] may look good, but in the name of consumer choice and public health the irregularity and diversity that is part of the natural order has been eliminated, not to benefit consumers but to fit the way our big food retailers like to do business. In essence, this means sourcing vast quantities of easy-to-retail, long shelf-life standard varieties, grown to rigid size and cosmetic specifications, that can be supplied 365 days a year ... 'Hi-tech, low-taste, odour-free produce is the norm.'<sup>15</sup>

Not surprisingly, there has been significant growth in the ethical consumer movement in the agro-food industries.<sup>16</sup> For example, some 7 million farmers and workers in around 60 developing countries are now covered by the 'Fairtrade' charitable scheme, which pays a guaranteed price covering basic costs and a surplus to reinvest in further development. Fairtrade is especially active in such foods as coffee (see Figure 13.3), tea, bananas and chocolate. According to the Fairtrade Foundation, 'Fairtrade accounts for 10% of all tea sold in the UK, just over 27% of all roast and ground retail coffee is Fairtrade certified.'<sup>17</sup>

Set against these kinds of consumer resistance, we have to recognize that such movements are, at least in part, facilitated by the choices of the affluent consumer. While there is no doubt that demand is growing from consumers for food whose quality and geographical provenance are regarded as being superior to food from the large-scale sources, for most people the overwhelming need is still for enough food to survive. For every 'enlightened' consumer pursuing their organic food, or for the lifestyler drinking designer coffee, there are many for whom such foods are out of reach. For people working long hours, for the poor and for the elderly, the availability of convenience foods is a major benefit. The fact that such foods may not be especially healthy is another issue. Clearly, demand for, and consumption of, food is an extremely complex set of processes. It has major implications for the changing technologies of food production, for state regulatory policies and for the strategies of the transnational food producers.

## TRANSFORMING TECHNOLOGIES IN AGRO-FOOD PRODUCTION

### Global cool chains

Traditionally, food production and consumption were predominantly local. No longer. Developments in transportation, together with innovations in refrigeration and food-freezing technologies – the development of 'global cool chains' – transformed the availability of a much wider range of agricultural products over vast geographical distances.<sup>18</sup> Long-distance trade in fresh foods depends critically on controlled atmosphere (CA) technologies to move fragile and perishable products

without destroying their ‘freshness’.<sup>19</sup> Technologies of fresh food preservation are also greatly enhanced by the use of air freight to transport low-weight/high-value exotic foods to distant, affluent markets.

Consequently – and controversially – many food products travel vast distances. For example, a basket of 20 fresh foods bought from major UK retailers was found to have clocked up a total of 100,943 miles.<sup>20</sup> On the other hand, long-distance movement of agricultural produce also makes possible the continued existence of many traditional producers through their access to a larger market (including that of Fairtrade production). The carbon footprint per pound of food of the biggest container ships is significantly lower than that of much ‘local’ sourcing.<sup>21</sup>

There is, in fact, no easy equivalence between long-distance movement and environmental impact, as an analysis of some New Zealand (NZ) products shipped to the UK reveals:<sup>22</sup>

- The UK uses twice as much energy per tonne of milk solids produced as NZ, even including the energy associated with transport from NZ to the UK.
- The energy used in producing lamb in the UK is four times higher than the energy used by NZ lamb producers, even after including the energy used in transporting NZ lamb to the UK.
- NZ energy costs for the production of apples are a third of those in the UK. Even when transport is added, NZ energy costs are approximately 60 per cent of those in the UK.

## Industrialization of food production and the shift towards biotechnology

The technologies of agro-food production have been transformed by their *industrialization* and, most recently, through the introduction of *biotechnologies*. Such developments are intimately related to the increasing role of very large agro-food corporations in all aspects of food production.

The application of industrially produced chemicals to agricultural production (fertilizers to stimulate higher crop yields, pesticides to inhibit disease and insect damage) has been common for decades. The development of newer varieties of crops has also been a continuing process. The so-called ‘Green Revolution’ of the 1960s and 1970s was the most significant combination of such practices: an attempt to solve the food problems of poor countries through the development of new varieties of basic crops such as wheat, rice and maize, using fertilizers, pesticides and irrigation.

The Green Revolution was, in many ways, a precursor of what has become the most controversial aspect of agro-food production: genetic modification (GM). As before, the objective is to improve plants’ resistance to disease and to herbicides, to increase yields and to improve nutritional value by changing basic genetic structures and producing new varieties of seeds.<sup>23</sup> Such GM techniques are

immensely complex and costly. They involve massive levels of capital expenditure that can only be afforded by the big biotechnology and agro-food companies. Not least, they encourage the patenting of what had hitherto been regarded as ‘public’ goods: the seeds needed to produce the next generation of crops. This is the patenting of life itself. Traditionally, a farmer would set aside some seeds from one year for use in the following year. GM seeds, in contrast, ‘belong’ to the seed company, which produces ‘terminator’ seeds that cannot be reproduced by the user, who has to purchase the next year’s seeds from the seed company. Planting of GM crops increased to 160 million hectares globally in 2011, an increase of 8 per cent over 2010. Growth was especially rapid in Brazil (+19 per cent) but the biggest area of GM crops is the USA. Around 90 per cent of the US production of maize, soya beans, cotton and oilseed rape is through GM.<sup>24</sup>

The application of biotechnologies is relatively recent, and mainly applied in the early stages of the agro-food production circuit. The use of chemical additives in food products themselves has been common for much longer. Increasing industrialization of food production can remove some of the desirable qualities of taste, texture, colour, and so on. To counteract these changes, and to enhance the attractiveness of food products, producers have developed a bewildering variety of food additives: preservatives, antioxidants, emulsifiers, flavourings, colourings. One calculation is that some 4,500 different flavouring compounds are available to food manufacturers and that 90 per cent of additives are purely cosmetic.<sup>25</sup>

## What about the workers?

The impacts of technological transformations in how food is produced, and how far and how quickly it can be transported, are immense. In addition to their effect on what people eat – and the potential effects on health – they also impact greatly on those people who work in agriculture. The proportion of the labour force working on the land has fallen markedly, especially in developed countries. The industrialization of agro-food processes has, in effect, shifted the locus from the field to the factory or to the packaging plant. The seasonal rhythms of agricultural work have been displaced by the mechanical rhythms of food processing and packaging assembly lines. Indeed, many workers in the agro-food industries are more like workers in automobile or electronics production, engaged in ‘lean and flexible production’, than farmers.<sup>26</sup>

Because governments are heavily involved in regulating their food industries for health and safety reasons (see next section), the working conditions in processing and packaging plants are more tightly monitored than in some other industries (such as clothing). The work itself may be mind-numbingly boring and repetitive, but so, too, are many other jobs in today’s society (and not just in manufacturing: think of telephone call centres). Of course, wide variations in working conditions

exist despite, or perhaps because of, the ubiquitous involvement of the big supermarket chains in sourcing from such plants.

Although some jobs in food processing and packaging are permanent or full-time, agro-food is the largest user of *casual labour* of all modern industries. These industries depend fundamentally on a huge floating labour force of workers, employed only when the producer needs them and often organized by subcontractors or ‘gangmasters’. Since the supply of such labour invariably exceeds demand, wages are extremely low and working hours very long. The majority are migrants, with virtually no bargaining power and often very little protection from abuse. The seasonality of agricultural processes creates vast periodic movements of migrant workers within and across borders.<sup>27</sup> In the USA, the majority of these workers are Hispanic (especially Mexican); in Europe, they come predominantly from Eastern Europe or from North Africa.

An Oxfam Report on American agriculture provides graphic details of what the report terms ‘sweatshops in the fields’:

Farmworkers are among the poorest – if not *the* poorest – laborers in the US ... farm labor is also one of the most dangerous jobs in America. At work, farmworkers suffer higher rates of toxic chemical injuries than workers in any other sector of the US economy, with an estimated 300,000 suffering pesticide poisonings each year. They also suffer extremely high rates of workplace accidents ...

Farmworkers are much more likely to have temporary jobs ... Just 14% of all workers in crop agriculture are employed full time in year-round positions, while fully 83% work on a seasonal basis ... 56% of farmworkers in crop agriculture are migrant workers, travelling more than 75 miles to get a job ...

Thirty per cent of migrant workers (or 17% of all crop workers) are characterized as ‘follow-the-crop’ migrants, moving year-round like those portrayed in John Steinbeck’s *The Grapes of Wrath* ... Farmworkers in general and immigrant farmworkers in particular, have low levels of education ... Their literacy and communication skills in English are especially limited ...

Finally, yet perhaps most significantly, these immigrant workers typically lack work authorization ... Given the vulnerabilities of their legal status, US farmworkers tend to face widespread workplace and human rights abuses, and are rarely able to take the risk of challenging abuses when they occur.<sup>28</sup>

While some of these characteristics of the agro-food workforce are far from new, they have intensified as agro-food production circuits have become more tightly controlled by larger and larger producers and buyers.

## THE ROLE OF THE STATE

The agro-food industries are among the most highly regulated, heavily subsidized and vigorously protected of all economic activities. The involvement of the state is ubiquitous in these industries.

### Regulating agro-food industries

A vast array of government agencies and departments operates to oversee various parts of the agro-food industries. Food safety is a primary focus, a problem greatly exacerbated by the growth of international trade in food. Before the 1970s, as much as 90 per cent of world food production was consumed in the producing country itself. That situation has changed dramatically. As a result, national food regulatory measures have become increasingly embedded in international codes, such as the Codex Alimentarius, set within the Food and Agricultural Organization and the WHO. This consists of 'over 200 standards, forty codes and guidelines for food production and processing, maximum levels for about 500 food additives, and 2700 maximum-residue limits for pesticide residues in foods and food crops'.<sup>29</sup>

A striking feature of regulatory policies in these industries is that they are deeply intertwined with the strategies of the major food producers:

The biggest funder of the establishment of the Codex Alimentarius Commission was not the US state but the US food industry ...  
Indeed, the Codex has become one of the more industry-dominated international organizations.<sup>30</sup>

In other words, there is a substantial amount of 'private' regulation in the agro-food industries sanctioned by national governments. A major problem facing food safety regulators is the continuing proliferation of new products that cross the boundaries between food and medicine: the development of so-called functional foods or 'nutriceuticals', which claim to improve various aspects of health.<sup>31</sup>

The vastly increased geographical complexity and lack of transparency in food supply chains has created huge problems for their regulation. This was demonstrated in graphic terms during the so-called 'horsemeat scandal' in Europe in early 2013. This involved, at least initially,

horsemeat from a Romanian abattoir being sold to a French supplier by way of a Cypriot trader, and then passed on to a French food-processing company before landing on supermarket shelves in Britain and France.<sup>32</sup>

This case demonstrated just how difficult it is to trace the origins of contaminated materials in processed food when the supply chains involved are so complex and cross

many national boundaries. In the EU, it is the *national* inspectors of the 27 member states who are responsible for tracking meat shipments and testing food samples; the EU acts as coordinator. Clearly, there is a need for much greater international regulation.

The case of GM food is one of the biggest sources of difference between states and one that spills over into trade disputes, especially between the USA and the EU. The US position is that GM foods are not only safe, but also vital to increasing food supply in poor countries. Driven by consumer resistance (see earlier), the EU has taken a more restrictive position. Although it lifted its six-year moratorium on GM food in 2004 and allowed limited approvals of GM products, several EU states continue to ban them.

There is also considerable variation in national regulations governing the operation of foreign food retailers. Retail markets tend to be a highly sensitive national and local issue. Many countries have protected their domestic retail sector either by keeping out or by constraining the entry and operations of foreign food retailers. Restrictions on ownership (e.g. by insisting on local partners or minority foreign ownership) have been very common and continue to exist, especially in emerging economies where there is a great fear of the domestic retailing sector (primarily a small-firm sector) being swamped by foreign incursion.

## Subsidizing and protecting agro-food industries: *the major focus of trade conflict*

For reasons that lie deeply embedded in national emotions, as well as in the need to guarantee a secure food supply, most countries have adopted policies to nurture, sustain and, where felt necessary, protect their agro-food industries from external competition. Such policies include the trade measures shown in Figure 6.8, as well as direct financial support (subsidies) for domestic farmers. Agricultural subsidies are heavily concentrated in particular countries:

More than 90 per cent of the dollar value of agricultural support in OECD countries is provided by the European Union (which alone provides about half); Japan; the US; and the Republic of Korea.<sup>33</sup>

For example, both Japan and Korea have adopted highly protectionist policies towards their rice industries, which have deep cultural, as well as dietary, significance. In Europe, the French, in particular, regard the rural economy as sacrosanct. In the USA, farming remains a national obsession, a reflection of the country's desire for food security as well as the emotional connotations of the development of the national space in the nineteenth century. Subsidies to US farmers began in the 1930s under the New Deal programme.

The EU's Common Agricultural Policy (CAP) has long absorbed the largest single share of the EU's total budget and has become a source of dissatisfaction for

several member states. The CAP has become increasingly controversial, not only within the EU itself, but also in the context of the WTO trade negotiations. The CAP was reformed most recently in 2003, when the level of subsidy to farmers was separated from production, a practice which had led to notorious cases of over-production. Instead, subsidy was linked to ‘compliance with environmental, food safety, and animal welfare standards’ and part of the process of ‘transforming the CAP from a sectoral policy of farm community support to an integrated policy for rural development’.<sup>34</sup> To some member states (Austria, Denmark, Finland, the Netherlands, Sweden and the UK) further radical reform of the CAP is regarded as essential.

The issue of agricultural subsidies has become possibly the biggest bone of contention in the current WTO negotiations, especially in the context of the Doha ‘development round’ (see Chapter 11). It has been pointed out, for example, that the average subsidy per cow in the EU is more than the \$2 per day on which half the world’s population has to live, while US farm subsidies allow ‘farmers to export wheat at 28 per cent less than it costs to produce, corn at 10 per cent less and rice at more than a quarter less than cost price’.<sup>35</sup> Financial subsidization of some, or all, agricultural production continues to be common in many countries, although there has been some movement within OECD countries:

The average support to agricultural producers fell from 37 per cent of the gross value of farm receipts in 1986–88 (the beginning of the Uruguay Round) to 30 per cent in 2003–05 ... [however] ... while the 7 percentage point decline in support is progress, the amount of support increased over the same period from \$242 billion a year to \$273 billion.<sup>36</sup>

Despite the general reduction in tariffs and subsidies, many agricultural products remain heavily protected to the detriment, especially, of poor countries.

## A new phenomenon: state land grabs

Fears over future food shortages have led, in recent years, to ‘land grabbing’: state-supported actions to acquire agricultural land in foreign countries.<sup>37</sup> Although this is a highly complex situation which does not just involve powerful states and TNCs taking land from weaker states, it has become a major, and highly controversial, phenomenon:

In just over one year, from March 2008 to April 2009, an estimated 40 million hectares of land changed hands; the latest figures from the World Bank suggest that this was twenty times higher than the average annual level of land transfers for the preceding forty years.<sup>38</sup>

While it is virtually impossible to establish the precise scale of land transfers, the identity of the major investors is clearer:

The big investors tend to be capital-exporting countries with large worries about feeding their own people. Their confidence in world markets has been shaken by two food-price spikes in four years. So they have sought to guarantee food supplies by buying farmland abroad. China is by far the largest investor, buying or leasing twice as much as anyone else.<sup>39</sup>

These land deals invariably come with the promise of jobs for the local population, technology and skills transfer, and tax revenue for the local economy. But such promises rarely materialize:

In Mozambique ... one project had promised 2,650 jobs and created a mere 35–40 full-time positions ... 99 smaller projects in Benin, Burkina Faso and Niger reported 'hardly any' rural job creation ... Most land deals contribute little or nothing to the public purse. Because markets for land are so ill-developed in Africa and governments so weak, rents are piffling: \$2 per hectare per year in Ethiopia; \$5 in Liberia ... It is not unusual for foreign investors to pay less tax than local smallholders. And upfront compensation to local farmers for use of their land is derisory: often just a few months of income for agreeing to a 100-year lease.<sup>40</sup>

## CORPORATE STRATEGIES IN THE AGRO-FOOD INDUSTRIES

### Concentration and consolidation

The massive transformation of the agro-food industries during the past few decades is inexorably bound up with the increasing dominance of very large trans-national firms. This is apparent at all stages in the production circuit, from seeds, through growing, to processing and retailing. What was historically a highly fragmented set of industries – although some parts were always more concentrated than others – has become one in which a relatively small number of giant trans-national firms shape what food is produced, how it is produced, who produces it, and how it is marketed and distributed to final consumers.

Figure 13.8 lists the 10 leading companies in the world in four agro-food industries: seeds, pesticides, food and beverage manufacture, food retailing. Although there have been some changes in detail since these data were compiled, the general pattern remains much the same today. Notably, there are many cross-links,

| <b>Top 10 seed companies</b> |             | \$m sales<br>2007 | <b>Top 10 pesticide companies</b> |             | \$m sales<br>2007 |
|------------------------------|-------------|-------------------|-----------------------------------|-------------|-------------------|
| 1. Monsanto                  | US          | 4,964             | 1. Bayer                          | Germany     | 7,458             |
| 2. DuPont                    | US          | 3,300             | 2. Syngenta                       | Switzerland | 7,285             |
| 3. Syngenta                  | Switzerland | 2,018             | 3. BASF                           | Germany     | 4,297             |
| 4. Groupe Limagrain          | France      | 1,226             | 4. Dow AgroSciences               | US          | 3,779             |
| 5. Land O'Lakes              | US          | 917               | 5. Monsanto                       | US          | 3,599             |
| 6. KWS AG                    | Germany     | 702               | 6. DuPont                         | US          | 2,369             |
| 7. Bayer Crop Science        | Germany     | 524               | 7. Makhteshim Agan                | Israel      | 1,895             |
| 8. Sakata                    | Japan       | 396               | 8. Nufarm                         | Australia   | 1,470             |
| 9. DLF-Trifolium             | Denmark     | 391               | 9. Sumitomo Chemical              | Japan       | 1,209             |
| 10. Taikii                   | Japan       | 347               | 10. Arysta Lifescience            | Japan       | 1,035             |

| <b>Top 10 food &amp; beverage companies</b> |                | \$m sales<br>2007 | <b>Top 10 food retailers</b> |         | \$m sales<br>2007 |
|---|----------------|-------------------|------------------------------|---------|-------------------|
| 1. Nestlé                                   | Switzerland    | 83,600            | 1. Wal-Mart                  | US      | 180,621           |
| 2. Pepsi Co.                                | US             | 39,474            | 2. Carrefour                 | France  | 104,151           |
| 3. Kraft Foods                              | US             | 37,241            | 3. Tesco                     | UK      | 72,970            |
| 4. Coca-Cola                                | US             | 28,857            | 4. Schwarz Group             | Germany | 58,753            |
| 5. Unilever                                 | UK/Netherlands | 26,985            | 5. Aldi                      | Germany | 55,966            |
| 6. Tyson Foods                              | US             | 26,900            | 6. Kroger                    | US      | 52,082            |
| 7. Cargill                                  | US             | 26,500            | 7. Ahold                     | UK      | 50,556            |
| 8. Mars                                     | US             | 25,000            | 8. Rewe Group                | Germany | 49,651            |
| 9. ADM Co.                                  | US             | 24,219            | 9. Metro Group               | Germany | 49,483            |
| 10. Danone                                  | France         | 19,975            | 10. Edeka                    | Germany | 45,397            |

**Figure 13.8 Dominant firms in the global agro-food industries**

Source: based on data in ETC Group, 2008

especially between seed and pesticide companies as vertical integration has increased. For example, the Swiss company Syngenta has become 'the Apple of the agro-chemical world. By selling seeds, pesticides, fertilisers and advisory services it keeps farmers from their first purchase right through to – and beyond – harvesting'.<sup>41</sup>

Global seed production is dominated by European and US firms. US dominance increased following Monsanto's acquisition of Seminis in 2005 to create the world's largest seed company. US firms also dominate food and beverage production, although the world's biggest food manufacturer, Nestlé, comes from one of the smallest European countries, Switzerland, while the fifth largest is the Anglo/Dutch company Unilever. In global food retailing, on the other hand, eight of the top ten companies are European, and only two are American, including by far the largest, Wal-Mart.

Overall:

- Almost three-quarters of the world seed market is controlled by the leading 10 companies, compared with two-thirds in 1967.
- Almost 90 per cent of the world pesticide market is controlled by the leading 10 firms.
- Over a quarter (26 per cent) of the world packaged food market is controlled by the leading 10 firms.
- The leading 100 global food retailers account for 35 per cent of total world grocery sales. The top three produce half of the total revenues of the top ten.<sup>42</sup>

Virtually all of this increased concentration is the result of *merger and acquisition*. These have been among the most takeover-intensive industries in recent years, as firms have striven not only to acquire a wider portfolio of brands (as well as to drive out competition for their own existing brands), but also to extend their reach into new geographical markets. Much of this activity has been driven by the increased *financialization* of the leading firms: ‘the prioritization of objectives to boost “shareholder value”’.<sup>43</sup>

Take the case of the US tobacco company Philip Morris. In 1985 Philip Morris acquired General Foods; in 1988 it acquired Kraft Foods; in 1989 these were combined to form Kraft General Foods, the largest food company in the USA; in 2000 it acquired Nabisco Holdings of the USA and integrated Nabisco brands into Kraft Foods worldwide; in 2007 the entire Kraft Foods business was sold and became the world’s third-largest food company; in 2010, Kraft controversially acquired the major UK company Cadbury.

Among the diversified food companies, Unilever acquired Brooke Bond in 1984, to make it the world’s leading tea company; in 2000, the company acquired the US food company Bestfoods, as well as Ben & Jerry’s ice cream; in 2007 Unilever acquired the Buavita vitality drinks brand in Indonesia and Inmarko, the leading ice-cream business in Russia. The more narrowly specialized food companies have also grown through acquisition as well as through organic growth (no pun intended). Tyson Foods, for example, the world’s biggest poultry company, began its ‘expand or expire’ strategy in 1963 by acquiring the Garrett Poultry Company of Arkansas and then made 19 further acquisitions between 1966 and 1989. In 1995, Tyson purchased Cargill’s US broiler operations and has subsequently made acquisitions in other food companies outside poultry, notably IBP, the huge beef and pork company.

Merger and acquisition have also been important factors in the growth of the major transnational food retailers. One of the biggest deals was Wal-Mart’s acquisition of the British supermarket chain Asda, for almost \$11 billion. Because of national regulatory restrictions, the major food retailers have often had to enter foreign markets through joint ventures with local partners. Examples include Tesco’s alliance with Samsung in Korea.<sup>44</sup>

## Strategies of combining ‘global’ brands with ‘local’ products

The agro-food producers are dominated by the drive to introduce, develop and sustain *branded products*. Indeed, the degree of product differentiation through branding is probably greater in the agro-food industries than in most others. Each of the leading agro-food companies has a vast portfolio of brands serving different market segments. At the same time, all the leading food companies are actively rationalizing their brand portfolio through sell-offs.

The primary aim is to sell each brand to the largest number of consumers; the ideal would be brands that sell everywhere without any need for modification. But agro-food markets are not like that. A major problem for the big agro-food producers, therefore, is to create *global* brands in circumstances where much food consumption is still very strongly influenced by *local* tastes and preferences. A distinction must, of course, be made between the manufacture of a product for a global market (based on large-scale production plants serving geographically extensive markets) and the way that product is actually sold to the local consumer. A product may be sold overtly as a global brand but it may also be sold under a more local label and packaging, even if the product itself is the same everywhere.

While some food companies do market their products as global brands, others are less inclined to do so. Nestlé, for example, dismisses the idea of ‘global brands’:

There is a trade-off between efficiency and effectiveness in global brands ... Operational efficiency comes from our strategic umbrella brands. But we believe there is no such thing as a global consumer, especially in a sector as psychologically and culturally loaded as food. As a result, Nestlé retains its brand strength by using ... very strong local brands.<sup>45</sup>

The increased consumer interest in food health and safety has important implications for food producers’ strategies. Capitalizing on the enhanced interest in local and organic foods becomes increasingly important. All the big food companies have to deal with these market changes. They are doing so in various ways: for example, by acquiring local companies and by retaining their brand identities rather than rebranding them with the new corporate identity. Thus, Nestlé announced its intention to ‘accelerate the evolution of Nestlé from a respected, trustworthy Food and Beverage Company to a respected, trustworthy *Food, Nutrition, Health and Wellness Company*’.<sup>46</sup> Note the very significant change of emphasis. This shift in emphasis towards ‘healthy’ products has become virtually universal among the large food companies. Unilever boasts about how it is ‘bringing Vitality to life’ and launched the ‘Unilever Health Institute – a centre of excellence in nutrition, health and vitality’.<sup>47</sup> Likewise, Kraft Foods has a ‘health and wellness strategy’.<sup>48</sup>

## Changes in organizational and geographical architectures

Traditionally, the major food manufacturers expanded overseas by setting up (or acquiring) operations in each of their major geographical markets. The existence of highly protected domestic food markets, together with the idiosyncrasies of local consumer tastes, make each national market distinctive. As a result, the leading transnational food producers established organizational structures that were

strongly *multinational*, with all the characteristics shown in Figure 5.12.<sup>49</sup> The agro-food industries, therefore, are the clearest example of the ‘global–local tension’ discussed in Chapter 5. Because the traditional organizational–geographical structures are less and less effective, all the major food producers are engaged in large-scale reorganization programmes. Two cases illustrate these processes.

*Nestlé* currently has operations in 80 countries and employs 250,000 people. Organizationally, *Nestlé* is changing from a decentralized multinational company to a global and, ultimately, a global multifocal company.<sup>50</sup>

In fact, *Nestlé* has been involved in substantial geographical reorganization for some time, as its actions within South East Asia reveal.<sup>51</sup> With the increasing liberalization of agro-food trade within ASEAN, *Nestlé* progressively rationalized its multidomestic operations there (in the early 1990s it had more than 40 factories in the region). Under the ‘centres of excellence’ programme, the company established such centres for production of breakfast cereals in the Philippines, chocolate and confectionery in Malaysia, non-dairy creamer in Thailand, soya sauce in Singapore and instant coffee in Indonesia. It has a major R&D centre in Singapore.

*Unilever*, like *Nestlé*, had long operated a decentralized multinational strategy but it, too, has made strenuous efforts to create a more efficient and responsive global structure. In the late 1990s, *Unilever* operated around 300 food factories, with a presence in virtually every country in the world. The acquisition of Bestfoods brought in a further 70 factories in 60 countries. In its various strategies since the late 1990s, *Unilever* has drastically rationalized and reorganized its entire food production and supply chain activities. The focus on a much smaller number of brands has involved closing a large number of plants in favour of concentrating production on a much smaller number of key sites.

Such organizational and geographical restructuring – often with a strong *macro-regional* dimension – is typical of all the major multibrand food producers:

Global firms had launched a restructuring process aimed at developing large macro-regional factories specialized by product lines and serving the entire region, with the objective of generating scale economies and productivity increases. These macro-regional factories had been progressively replacing traditional national factories through continuous restructuring and cost cutting programmes, involving plant closures and lay-offs at the national level ... [for example] ... in the early 2000s, *Nestlé* launched its own version of a macro-regional production system in ice cream, distinguishing between ‘global factories’ that would perform initial production stages for global or macro-regional markets, and ‘finishing factories’ in which products would be adapted to local markets ... The adoption of global strategies in marketing and production entailed a centralization of support functions such as sourcing, aimed at controlling and coordinating the activity of local buyers.<sup>52</sup>

## 'Big Food' and 'Big Retail': two sides of the same coin

These developments in the strategies of the major transnational food producers have to be seen within the context of the retailing systems through which their products are sold. There is a deep symbiotic relationship between the big food producers and the big supermarket chains:

'Big Food' and 'Big Retail' are really two sides of the same coin. Big global food manufacturers need big supermarket chains to get their products on to the shelves and our big supermarkets need big food processors ... Mass-produced food that can be churned out over and over again in vast, uniform quantities, made by a handful of big manufacturers who jump to the big retailers' tune, processed food lends itself to supermarket retailing: it gives them the ability to put a standard, regular product into every store nationwide, a product that does not require any specialist handling ... Industrial food lends itself to the supermarkets' heavily centralised, highly mechanical distribution systems.<sup>53</sup>

This is an arena of continuous power struggles in which power lies increasingly with the big transnational food retailers. And there is no doubt that the biggest food retailers have become increasingly *transnational* after being essentially domestically oriented for most of their histories.<sup>54</sup> But the extent of transnationalization differs between firms; the biggest food retailers are not invariably the most transnational, as the case of Wal-Mart shows. The world's biggest food retailer in overall sales is far less so in terms of international sales. Figure 13.9 maps the distribution of stores of three of the leading transnational food retailers. There are some significant differences between them in the specific geography of their overseas activities but all share a common characteristic: a very strong focus on their home region.

Wal-Mart has 68 per cent of its stores in North America (primarily the USA, plus Canada and Mexico). Its stores outside North America are concentrated in East Asia (China and Japan – it disposed of its Korean stores), Latin America (particularly Brazil, Chile, Argentina) and Central America, where it acquired a substantial equity stake in the region's largest retailer from Ahold. In contrast, Wal-Mart's only European base is in the UK through its acquisition of Asda. Its attempts to establish a presence in Germany failed, largely because of its inability to understand the fundamental differences between the German and the US retail food markets.

The French company Carrefour has 47 per cent of its stores in its home market and 90 per cent in Europe. Elsewhere, it has a significant presence in Latin America (primarily Argentina and Brazil) and in East Asia (particularly China). Brazil and China seem destined to be a major focus in the near future. Carrefour has a policy of getting out of countries in which it cannot become one of the top three retailers.<sup>55</sup> It withdrew from Japan and Mexico, and sold its stores in the Czech Republic and Slovakia to Tesco. At the same time, it bought Tesco's Taiwan

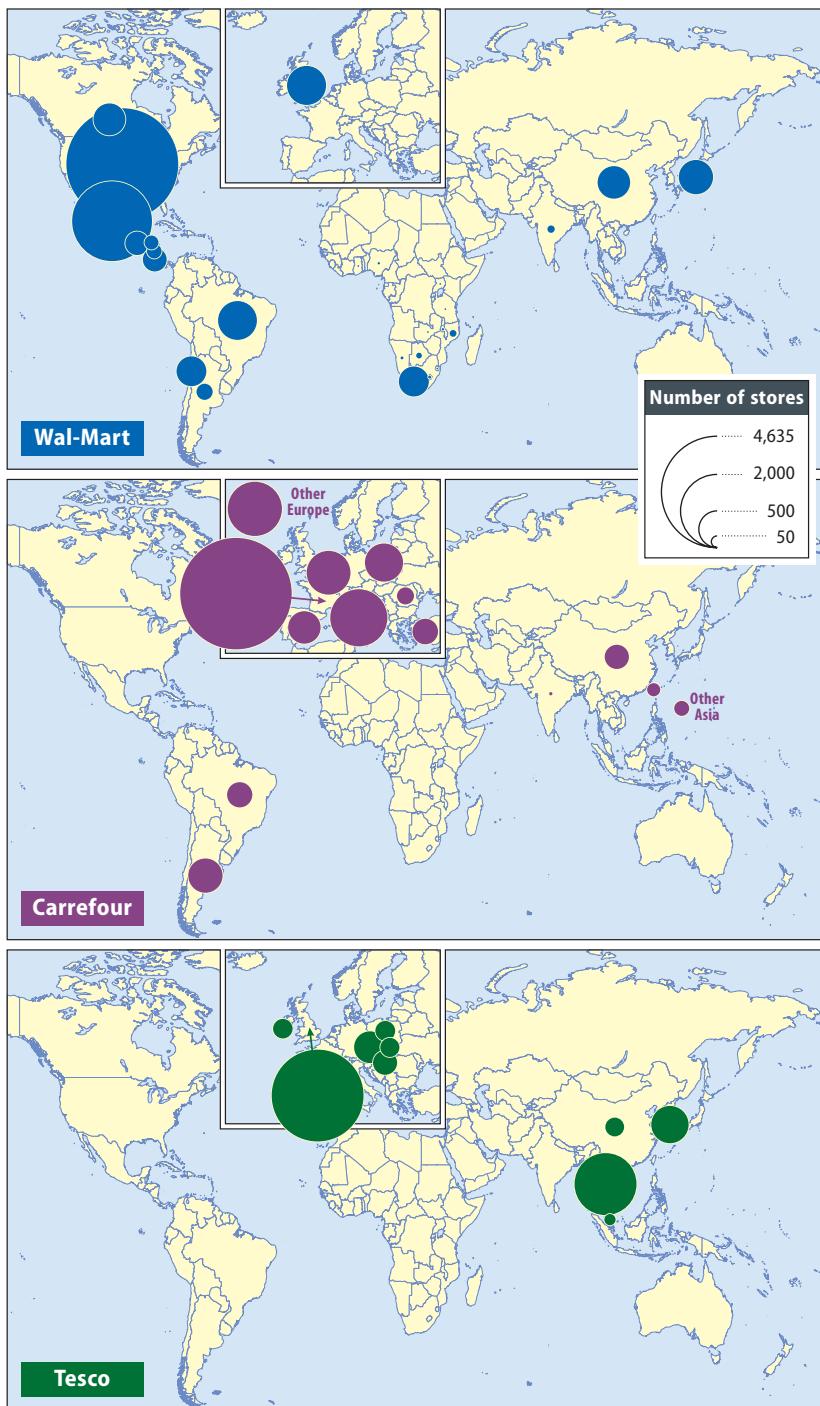


Figure 13.9 The global geographies of leading transnational food retailers

Source: company reports

operations. Significantly, Carrefour has no stores in North America, having failed to transfer its hypermarket model to the USA.

The biggest UK food retailer, Tesco, has pursued a very aggressive – but geographically focused – transnationalization strategy, based on expansion in East Asia and Eastern Europe. Tesco has no stores in Western Europe outside the UK and Ireland. Its recent buying and selling deals with Carrefour are part of this strategy, strengthening Tesco's position in Eastern Europe. In East Asia, Tesco's major store concentrations are in Thailand, Korea<sup>56</sup> and China. (Tesco sold its Japanese operations in 2012.) But Tesco's biggest setback occurred in 2013 when it announced it would dispose of its heavily loss-making US operations 'Fresh & Easy', established amid much fanfare only in 2008. Tesco's global ambitions have been severely dented.

Overall, therefore, there has been considerable growth in the transnational – or, more accurately, regional – operations of some of the leading retail chains. But such expansion has not been problem-free, as the sell-offs listed above demonstrate. The use of local partners within a joint venture often helps to avoid the problems of misunderstanding local market conditions. But even joint ventures are not without their difficulties, especially if the foreign partner fails to learn from the knowledge embedded in the local partner. While the strength of most of the leading retailers is based on their high levels of profitability in their home market, their returns on international operations are often far lower.

So, the transnationalization of food retailing is far from being a straightforward or unproblematic process. Competing head-to-head with local firms is particularly difficult in this sector. A major problem is identity. Because food retailing has traditionally been very much a domestic activity, there is little knowledge of foreign retail store brands (as opposed to product brands). For many customers outside the USA, for example, Wal-Mart is a totally unknown quantity. The same applies to non-French residents' knowledge of Carrefour, or non-UK residents' awareness of Tesco. Yet building up a respected and trusted brand identity takes a long time. Meanwhile, local competition remains, in most cases, a very serious problem for transnational food retailers.

## Supplier relationships

A second dimension of food retailers' strategies is from whom, and from where, their products are sourced. The big retail chains have vastly increased the geographical extensiveness of their supply networks as well as exerting increasing power and influence over their suppliers. As in the case of clothing (Chapter 14), the major retailers dominate their supply networks, forcing suppliers to meet their increasingly stringent demands on price, delivery and quality. There is a great deal of criticism of the treatment of suppliers by the big supermarkets, although suppliers are often afraid to object out of fear of losing their contracts. An investigation of the accounts of transnational food retailers claimed that they gain huge financial benefits simply by delaying payments to their suppliers:

stock is turned into cash at the check-out counters long before suppliers have to be paid ... In effect, suppliers have acted as surrogate bankers ... [however] ... the burden is not shared equally ... the most powerful manufacturers are able to shunt the burden of increased trade debt down the supply chain ... life is very much tougher for smaller suppliers who do not have the luxury of their burden down the line.<sup>57</sup>

It is also increasingly common practice for the big supermarket chains to ask the major food producers to pay for 'preferred status'.<sup>58</sup>

As the big food retailers have increased their direct presence in foreign countries (especially in the emerging market economies) they have also drastically changed the geography and organization of their sourcing networks, both for their local stores and for their entire network.<sup>59</sup> Typically, the degree of centralization of procurement has greatly increased. When a transnational retailer establishes operations in a specific country, one of its first actions is to replace 'a per store procurement system with the distribution centre (DC) model used in established markets. Each DC may have responsibility for a particular range of products or a particular territory'.<sup>60</sup>

A further aspect of the changing procurement practices of transnational retailers is the changing balance between global and local sourcing:

On the one hand, transnational retailers have increased levels of global sourcing for their home markets ... On the other hand ... there are the supply chain impacts that result from the retailers establishing store operations *within* the various markets ... The foreign subsidiaries of retailers such as Tesco, Ahold, and Carrefour commonly source over 90% of products from within the country ... contra accounts of the continuing rise of global sourcing, local sourcing may actually *increase* over time as the supply base develops and retailers therefore import fewer products.<sup>61</sup>

However, the recent strategic shift of Wal-Mart towards a more global sourcing system reflects what may become an increasingly common practice:

Wal-Mart intends a drive ... to cut billions of dollars from its supply chain by combining its store purchasing across national frontiers in a fresh stage of the globalization of its business ... It is ... shifting to direct purchasing of its fresh fruit and vegetables on a global basis, rather than working through supplier companies.<sup>62</sup>

The recent crises over food safety and contamination highlight the problems of operating supply networks involving many suppliers in very different locations across the world. As a result, food retailers like Tesco have had to issue high-profile public apologies in the national media and to promise to reform their system:

The problems we've had with some of our meat lately is about more than burgers and bolognese. It's about some of the ways we get meat to your dinner table. It's about the whole food industry. And it has made us realise we really do need to make it better ... We know that our supply chain is too complicated. So we're making it simpler ... For farmers to do what they do best, they need to know they've got our support ... We know that, no matter what you spend, everyone deserves to eat well. We know that all this will only work if we are open about what we do.<sup>63</sup>

The need for such ‘confessions’ epitomizes one aspect of the sensitivity of the agro-food industries. But, of course, there are many others, as this chapter has demonstrated.

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