MAJOR AGRICULTURAL PRODUCTION AREAS HOLD SWAY IN THE MARKETS

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Despite appearances, the agriculture and mining industries have several things in common, not least the race to scale up and up. This is old news in mining. But, contrary to perceived wisdom, the same is true of farming, at least when it comes to supplying global markets. Huge farms supply the agri-food industries and supermarkets' purchasing groups. These farms often focus on producing a single product. They are not scattered randomly but concentrated in a small number of highly specialised agricultural regions.

In the middle ages, Europe was dotted with small lead, zinc, tin, copper and other mines. Having become too small, isolated and unprofitable, these mines and associated industrial units in the Massif Central region of France, Thuringia in Germany and Bohemia in the Czech Republic barely survived the First World War. Despite their glorious pasts, the mines in the coal fields of northern France, Belgium and Great Britain and even the Ruhr were in turn shut down one by one after the Second World War.

The only mines that survive worldwide are gigantic operations in places like Canada, Chile, Mauritania, South Africa and Australia. These are open-cast mines that process enormous quantities at very low production costs. They are linked by railways to specialist ports where large cargo ships dock to load.

The same kind of mergers are now happening in agriculture, albeit a few years after they happened in the industrial sector. Today, the big agricultural production areas supply world markets. They are made up of huge holdings covering tens or even hundreds of thousands of hectares. For example, 47,000 Brazilian farms are more than 1,000 hectares in size (a quarter of them are over 10,000 hectares) and account for nearly half of the farmed area in the country, while 5,700,000 farms of less than 100 hectares farm less than 21% of the farmed area. In Ukraine, one holding manages over 600,000 hectares and several firms in the hands of Russian oligarchs are over 1 million hectares in size. These massive businesses are fully equipped, managed rationally, and obviously employ salaried workers. Harvests are transported to loading ports by water, train or a constant toing and froing of trucks. This happens on the North American plains, via the Mississippi and St Laurence rivers, in the "Black Sea" countries where produce is taken to ports on the Sea of Azov, and in Argentina, where the Rosario terminal on the Paraná River is the destination.

But despite their size, these production areas cover only a fraction of cultivated land worldwide and satisfy only a minority share, albeit a large one, of human dietary needs. The vast majority of these needs are met by hundreds of millions of very small holdings. Of course, these micro-farms play only a very marginal role in supplying world markets. But they are essential for feeding the general populations of rural areas and even neighbouring cities.

The main export-focused agricultural regions

A few large production areas dominate all these international markets, whether for grain, sugar, oilseeds or dairy products. And the same is true of bananas, avocados, coffee, cocoa and tea. This is because each of these large crops comes from a very small number of highly specialised regions able to supply huge quantities of products that comply with strict standards at very competitive prices. It is these precise characteristics that are sought by the large traders, agri-food manufacturers and purchasing groups in buyer countries and ultimately the retail sector.

Of course, consumers benefit in turn, year round, from a regular supply of low-price, consistently high-quality produce. But obviously this produce might come from the other side of the world, because the market decides.

Let's take the case of **wheat**. This grain crop, widely grown and eaten around the world, needs a lot of space. But most of the areas supplying the world market with wheat are located in regions that are particularly conducive to this crop because of their soil and weather conditions and arable production arrangements. This applies to the North American plains between the Great Lakes and the Rocky Mountains (nearly 20 million hectares of wheat fields), the Pampas in Argentina, the black-soil regions of Ukraine and southern Russia, and the plains of the European Union.

In 2019-20, global wheat production is predicted to total 765 million tonnes. Around 175 million tonnes (22.6%) might be traded internationally. Out of this total, the Black Sea countries are forecast to export 60 million tonnes, the US and Canada 24 to 25 million tonnes each, and the EU nearly as much (including 11.7 million tonnes by France). To this we can add Argentina, which exports 14 million tonnes, with a similar amount from Australia, although it is, even more so than other countries, exposed to very frequent unpredictable weather conditions. In total, this handful of countries will export 162 million tonnes of wheat, or nearly 93% of the global total.

On the other side of the scales, there are many more importer countries. And some have large trade deficits as a result of growing needs and structurally weak harvests. For example, in 2019-20, the five North African countries will likely import 28 million tonnes of wheat. But the Middle East, Indonesia, South Korea and Japan are also big importers, while sub-Saharan Africa's wheat imports are growing rapidly.

If we move on to all grains except rice, we need to add to this small group the major corn exporters, who are, essentially, besides the US, Brazil and far behind it South Africa.

The **soya** market is even more concentrated because three countries, the US, Brazil and Argentina, account for almost all production and exports. China takes in 60% of these, and the EU

a good proportion of the remainder. The same is true for **palm oil**, which is essentially produced in Indonesia and Malaysia, and mainly imported by China and India.

The market for **dairy products** is dominated by New Zealand and the EU, with the US a distant third.

The production of exotic fruit, vegetables and flowers is also very concentrated. Take **bananas**. They are consumed in large quantities in the US and Europe and are produced by huge plantations in the small, rich coastal plains of four Central or South American countries (Costa Rica, Guatemala, Colombia and Ecuador). If we add the Philippines, these five countries account for 83% of international banana production. The plantations and trade are controlled by large consortia such as Chiquita, Dole and Del Monte, which each cultivate tens of millions of hectares.

Ghana and Ivory Coast, meanwhile, account for 60% of **cocoa** production, while **coffee** production is dominated by Brazil, Vietnam and Ivory Coast.

This concentration of agricultural production therefore offers major and obvious advantages for big farmers, middlemen and processors, but also, at least in the short term, for consumers. However, it also presents serious drawbacks.

A very fragile global balance

According to the FAO, our food system now relies on just nine plants, from which most of our everyday foods are derived. That is a very small number when you consider that there are so many other plants on the planet that have been cultivated in the past, but are now being grown less and less or not at all. Of course, these nine plants have been the focus of all the research intended to improve varietal characteristics. The yields achieved for others are poor and are scarcely improving. This is true of millet and sorghum, despite the appeal of these crops in drought-affected regions, and of numerous legumes and tubers.

Humankind would therefore be at the mercy of a large-scale health incident were one of these plants to be ravaged by some devastating parasite.[1] Without even imagining such a catastrophe, the concentration of sources of supply of major agricultural products increases the risks resulting from routinely unpredictable weather conditions. A severe drought in Russia or Ukraine, for example, would cause prices to spike on the grain markets, to the great misfortune of disadvantaged populations in importer countries. Speculators would of course profit, as was the case when prices rose sharply in 2008.

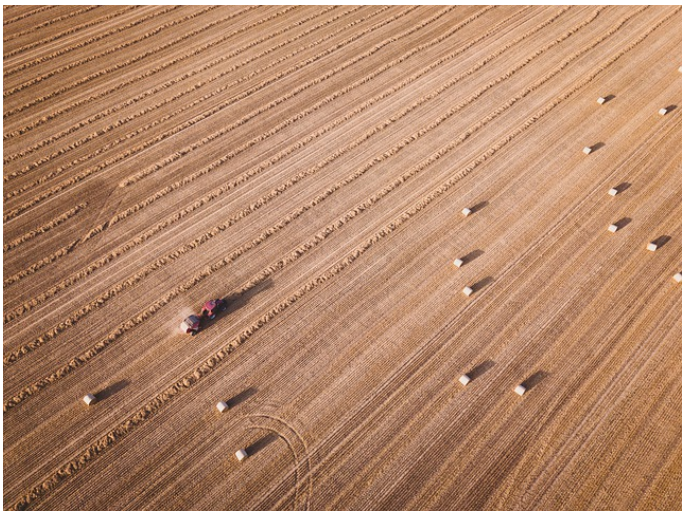
This fear of soaring prices explains the importance of the grain stocks that China and India constantly maintain. But there is another source of consumer protection in the event of a prolonged crisis. This is the 375 million tonnes of grains (more than 10% of the global harvest) that is used to produce ethanol every year, largely in the United States. This choice currently helps to support domestic prices in America, but also globally. If necessary, a change of allocation in favour of human consumption is always possible.

[1] In the livestock sector, the swine fever that has been sweeping through Chinese and Vietnamese farms in recent months has pushed up the price of pork on Chinese markets by 65%, and by almost as much on international markets.

A bipolar global agricultural sector has taken root

The agricultural world is now divided between two large and totally opposed segments:

- On the one hand, a small number of huge agricultural holdings which are clustered in highly specialised production areas and are mainly focused on exports.
- On the other hand, hundreds of millions of micro-farms headed by an overabundant, under-trained, unproductive family labour force that consumes most of what it produces but nonetheless meets the food needs of nearly 80% of the world population.



It is true that in Western Europe, Quebec and southern Brazil, for example, there are still plenty of mid-sized farms. With the help of cooperatives, they are trying their best to escape the duality that reigns everywhere else. But at a global level, they are exceptions which are struggling to grow and in many cases even to survive.

Competitive global agriculture tends to be concentrated in the large, fertile, well-watered or easily irrigable plains. As the markets they supply grow, this agriculture needs ever more space. The reclamation of land farmed by small farmers is possible, but it is a slow and complex process. It is easier to clear forests, as is happening in the Amazon, the Gulf of Guinea and south-east Asia.

In southern and eastern Asia, Africa and the Andean countries, large agricultural regions are still farmed by hundreds of millions of small farmers. They consume their own produce or sell the surplus on local markets, and are largely excluded from international trade, partly because the quantities available are tiny and of very uneven quality.

However, there are exceptions. For example, production of cotton, coffee and cocoa is still largely controlled by small farmers provided they have enough space to devote, in addition to their subsistence crops, to one or other of these cash crops. This is true of cotton from southern Mali to northern Cameroon, cocoa in Ghana and Ivory Coast, and even coffee in Mexico, Ivory Coast and Ethiopia. But this produce is nevertheless bought by traders or large agri-food companies like Nestlé. Companies with de facto monopolies. The buyers set their price, as low as possible of course. Having no control over prices and mediocre levels of productivity, these small producers' revenues are very low, so they achieve only a very modest additional revenue stream and cannot modernise.

Most of global trade in (and processing of) agricultural produce is controlled by four international traders: the main one, ADM (Archer Daniels Midlands Company), followed by Cargill, Louis Dreyfus Négoce and Bunge Limited. These companies own hundreds of ships (300 in the case of Cargill) and factories around the world (270 in the case of ADM plus 420 buying facilities). They have hundreds of thousands of employees (Cargill has 143,000, Bunge 25,000). Only

multinational companies like Unilever or Nestlé can, in part, do without the services of these giants.

Ineffective agricultural policies

How can a coherent agricultural policy be implemented when the sector may encompass a small number of huge capitalistic operations but also millions of micro-farms that often scarcely exceed one or two hectares in size? Governments waver between contradictory or unsuitable measures. The situation is especially complicated when these two types of agri-business co-exist in one country. Faced with this dilemma, the Brazilian government even ended up creating two ministries, one for the big farms, the other for small producers.

But most often, agricultural policies favour industrial farming because the big operators have lots of lobbying clout, but also because their farms are significant cash cows. This is the case in Brazil of course, but also in Argentina, Russia and Indonesia, for instance. Even in countries where small farms are very dominant, governments openly favour the big industrial plantations.

It is true that international organisations like the IMF and World Bank have long operated like this. They have forced countries in financial difficulties to eliminate subsidies for small farms. In contrast, these organisations have recommended the development of plantations aimed at international markets.

Conversely, a **policy of food sovereignty** could enable countries suffering shortages of basic products to improve their self-sufficiency rates and partly escape the conditions imposed on them by the big traders. Such a policy is defined as an international right allowing a country, or a group of countries, to adopt a policy of aid to its farmers (especially small farmers) and protection at its borders. It entails a complete overhaul of the rules of the World Trade Organisation (WTO), which forbids these practices. Of course, exporter countries are vigorously opposed.

A shake-up of a large country's economic policy might disrupt conventional trade patterns. The trade war between China and the US has led the Chinese government to source its soya from South America, thereby undermining the prospects and revenues of North American farmers. Similarly, after Russia's invasion of Crimea, an embargo was placed on European agricultural products, disrupting trade patterns even though they were profitable for both parties.

Environmental protection is the elephant in the room

Eager to increase their profits and encouraged by steadily growing international markets, the bosses of large farms are striving to expand their cultivated areas wherever possible. The various methods at their disposal include appropriating land cultivated by neighbouring small or medium-sized farms[2], clearing forests as in Brazil or south-east Asia, returning abandoned land to cultivation in Russia, and repurposing grassland in Argentina.

The same opportunities are rarely available to small farmers because very often all the available land is already cultivated. Conversely, many are forced out of business, in particular by

[2] It is known that in sub-Saharan Africa in particular, some governments have "granted" foreign investors the right to farm land previously occupied by small collectives of sedentary farmers or nomadic breeders, without worrying about the opinions of the interested parties.

prolonged drought. In addition, many nomadic herders have seen their grazing land deteriorate to such an extent that they are having to give up livestock farming and their ancestral ways of life. If small farmers abandon these lands, they will end up as wasteland, desert, or in the best case scenario, forest. There are probably tens of millions of hectares of land facing uncertain, if not definitively compromised, futures.

Whether as a result of profit-seeking by large companies or overpopulation in rural areas, a growing number of large one-off or incremental land clearances are occurring wherever possible. Neither large companies nor small farmers worry about protecting wooded areas or natural grazing land. On the contrary, deforestation is gradually destroying large forests and high-quality grassland is being replaced by cash crops, as sub-standard grazing land is abandoned.

In their routine business activities, large operators and small farmers alike overlook environmental protection, the fight against climate change, or biodiversity. Given this situation, it will be very difficult to make any of them change their behaviour in the immediate future in order to combat climate change. The agriculture and agri-food sector is responsible for 30% of greenhouse gas production. It is unthinkable that it should not contribute to efforts made by society as a whole. But so much remains to be done to force the various stakeholders to play their part.

As small farming struggles to modernise, if it is not being marginalised entirely, large capitalistic agriculture is booming. Holding sway in large production areas, it supplies the majority of solvent markets, and international markets in particular. Yet these are booming precisely because population growth, increasingly variable weather conditions and rising living standards in some countries are combining to keep demand for agricultural produce growing.

In the 1980s, the United States in effect imposed their "green power" on the rest of the world. Should we fear the prospect of other future attempts to establish agricultural hegemony? For example, if the Black Sea countries consolidate still further their position in the arable sector, will they be satisfied with leveraging their low production costs to gain a little extra market share? And what might the consequences for international trade be of a far-reaching agreement between two giants like China and Brazil?

More generally, will industrial agriculture alone, in other words without the input of small-scale farming, be able to meet the inevitable future rises in demand? The answer is probably "yes" in the short term, but it is much less likely to do so in the longer term.