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From biomedical to politico-economic crisis: the food system in times of Covid-19

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ABSTRACT



The Covid-19 disease is quickly developing into a deep, global and enduring politico-economic crisis that involves a rapid disarticulation of the production, processing, distribution and consumption of food. The badly balanced world market and the high degree of financialization of both primary agricultural production and food chains are decisive factors in this. The crisis highlights that the real economy is far too dependent on the financial economy. Financial capital operates as a paralyzing force. In this situation food sovereignty, peasant agriculture, territorial markets and agroecology emerge as indispensable ingredients for a recovery.


KEYWORDS

Covid-19 pandemic; food chains; peasant agriculture; food sovereignty

Introduction

The emergence and subsequent spread of the Covid-19 disease has triggered an unprecedented politico-economic crisis. A crisis that will probably persist far longer than the present biomedical risks. Covid-19 has revealed, in a merciless way, some of the main weaknesses of late capitalist economies. This applies especially to the hegemonic patterns for the production, processing, distribution and consumption of food. These are increasingly descending into disarray and there are worrying indications that a fully-fledged hunger crisis is developing.¹ Although there is still considerable uncertainty on how this multi-faceted crisis will evolve, this article examines how the biomedical crisis is beginning to disrupt the global food system, a situation that could continue to get worse. It does *not* delve into the discussions over the origins and causes of the Covid-19 pandemic (for a well-equilibrated synthesis see IPES 2020). It strictly limits itself to the *transmission* of this biomedical phenomenon into the wider economy, considering three interrelated levels: the nation-state, food chains and agricultural production.

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¹A range of sources has been used to gather up-to-date news about the unfolding crisis. Foodlog.nl gives a daily overview of the most relevant press releases (including international newspapers). The e-newsletter (via-info-en@viacampesina.org), bulletins and #StayHomeButNotSilent of La Via Campesina have also been highly useful. Data have been only used if encountered at least in two different and reliable sources.

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The article begins by looking at the level of nation-states. Here one witnesses an awkward diversity, not only in the impact of the Covid-19 tragedy and the way it has unfolded but also in the wide diversity of how it has translated at the politico-economic level. The second level relates to the organization of 'food chains'. At this level, Covid-19 has turned out to be a giant searchlight that ruthlessly exposes the major weaknesses of these chains. I argue that an analysis of these weaknesses brings new insights into our understanding of capital and capitalism. The analysis highlights that, in the current global economy, capital is acting as a *de-activating* instead of a productive force. The third level is that of primary production. Here special attention is paid to the structural divides that exist within agriculture, notably between peasant-like and entrepreneurial styles of farming.²

The analysis proceeds with an examination of the assumed 'return to normal'. It argues that an eventual 'restart' will most probably be hampered by the same mechanisms that translated the biomedical problem into an overall politico-economic crisis in, and of, the food-system. The prospect of a persistent paralysis cannot be excluded.

Finally, the article considers the contours of the much-needed alternatives. It includes a synthesis of the main contradictions that will probably characterize the post-Covid-19 period. Food sovereignty, peasant agriculture, territorial markets and agroecology are proposed as the main components for alternatives. These components have been developed in the many sided struggles against the dominant food regime over many years (Akram Lodi 2015; Rosset and Altieri 2017) and now turn out to be more valid than ever. At the same time, many uncertainties still have to be faced and a wide range of new questions will need to be explored.

The hegemonic narrative these days seems to carry the strength of simplicity. The Covid-19 pandemic has catalysed the lockdown of considerable and increasing parts of society (starting with restaurants and schools and then onwards to other parts of society). These lockdowns slow down the economy, bring misery, require the utmost endurance of people and induce unprecedented public spending aimed at mediating (at least parts of) this misery. Once the virus is under control, the economy will supposedly return to its normal routines and rhythms. The sequence going from virus to lockdown and then to the economic crisis is the backbone of this hegemonic narrative. In contrast, I will indicate that the de-activation of the economy specifically originates from the financial economy and the way it subordinates the real economy. The specificity of the current Covid-19 crisis comes to the fore when we compare the current pandemic with the Spanish Flu that ravaged the world in 1918. From the biomedical point of view, Spanish Influenza was far more deadly than Covid-19. Its politico-economic impact, though, was far less damaging. Garrett notes that 'society as a whole recovered from the 1918 influenza quickly' (2007, 22). He provides data on the reduction of Gross National Income following the outbreaks of Spanish Flu that are far lower than those currently expected from Covid-19. Garrett quotes Crosby who concluded that the deadly influenza of that time 'had [a] permanent influence not on the collectivities but on the atoms of human society – individuals' (Crosby 2003, 323). Now it is the other way around.

²The three levels are tightly interlinked. Roughly speaking, the hegemony of food empires over the nation states results in the many misbalances within and between the latter. At the same time the operation of food empires tightens the squeeze on agriculture, which subsequently pushes farmers into indebtedness.

There are, of course, highly complex *interactions* between lockdowns, the financial and the real economy, but the role of the financial economy definitely cannot be left out of the analysis. The financial economy is not able to deal with unexpected and potentially threatening elements, as is reflected in steep declines in share prices following the early stages of the shutdowns and in the wild surges that followed later with the first meagre kernels of optimism. When uncertainties occur, financial capital is withdrawn, leaving the real economy in a far deeper crisis than could be explained by the Covid-19 virus alone. I will illustrate this thesis with a critical discussion of the dominant food regime and the way it currently triggers a range of paralyzing effects.

The level of nation-states

There is a terrifying range of phenomena that come with the current Covid-19 crisis. These go from widespread and increasing hunger, food riots and shortages to parts of agricultural production being suddenly converted into ‘surpluses’ that are rotting in the fields and redundant animals that are awaiting destruction. Farmers’ income levels are going down and their perspectives are gloomy, whilst hundreds of thousands of rural migrant workers are in despair, even more than is ‘normally’ the case (Corrado, de Castro, and Perrotta 2017). Slaughterhouses all over the USA (and some in the UK and Canada as well) are closing down³ and retail chains are considering the rationing of meat. *Vion NL*, the large meat processing industry in the Netherlands lost 40% of sales that would normally go to restaurants and catering establishments and food processing giants such as *Unilever* face considerable reductions in stockholder value. Capital has been withdrawn, at least partly, from these food processing industries. Meanwhile, the *Food Service Institute Nederland* indicated that the ‘food service sector’ has been more affected (with expected losses up to 7.1 billion Euro in 2020) than any other economic sector, while *RABO International* expects overall price decreases of up to 30% for agricultural products.

What is analytically important here is that the resulting disarray does not follow the lines that delineate net food-importing countries from net food-exporting ones. During the previous food-price hike of 2007–2008 food shortages and associated food-riots mainly occurred in food-importing countries in the Global South, where they helped to trigger the ‘Arab Spring’. This time however the turmoil is global, although the shape it takes varies. Poor and food-importing countries again face major dramas, but rich and food-exporting countries are *also* experiencing specific food shortages, the loss of market outlets, surpluses, sudden drops in farmers’ incomes, closures of processing units, hoarding frenzies and the need for the state to intervene with billions of Dollars or Euros in order to prevent complete paralysis.

This globalization of ruptures, frictions and imbalances relates to the trend that, in nearly all countries in the world, both imports and exports of food have been growing during recent decades – and growing simultaneously. Thus, net food-importing or net food-exporting countries became nonsensical categories. A country like Peru is extremely dependent on

³While high levels of contamination of workers in the slaughterhouses with Covid-19 is used, at least partly, as an excuse for their closure this may only be part of the story. Since China stopped imports of pig meat, world market prices collapsed. In Italy, slaughterhouses are in big economic trouble as restaurants were closed down and sales of fast food were greatly reduced. These effects ripple back through the food chain back to individual farm enterprises, with animal breeders no longer able to find anywhere to sell their livestock.

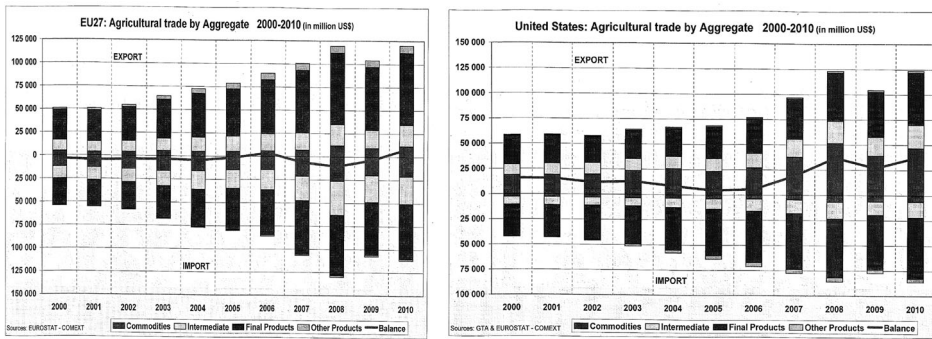


Figure 1. Development of imports and exports of agricultural products in the EU and USA over the 2000–2010 period.⁴

food imports. Yet, it is simultaneously a large agro-food exporter. The Netherlands is a large food exporter. Yet, at the same time, it depends on imports from elsewhere for many food products (grains for bread making to mention just one). It can also be said that many exports are only possible due to massive agro-imports. In Western Europe for instance, exports of animals, meat, dairy products and eggs are only possible due to substantial imports of feed and fodder (soy being the most important). This mutual dependency – on both imports and exports of agricultural produce – applies for the USA, the European Union, Turkey, South Africa, China, etc. (Figure 1, below, gives an overview for the EU and the USA). The dual orientation is repeated within each single product category. Countries both import potatoes from elsewhere and export, at the same time, home-grown potatoes, etc.

Figure 2 (based on EC 2019) gives more recent data (2016–2018) on the main food exporting and food-importing countries and shows that, on the whole, the biggest food exporters are at the same time the biggest food importers. As said, this is repeated at the level of smaller countries.

This, at first sight, improbable, if not enigmatic, constellation is the outcome of several decades of liberalization and globalization (Krugman 2013, 61–66). Neo-liberal regimes and trade agreements have encouraged agricultural production geared towards export markets, while increasing the importation of cheap food, reducing the focus on agricultural production for domestic consumption. Wherever ruling elites took strong pro-private sector positions within the dynamics of imports and exports these misbalances were further strengthened. This was and is notably the case in Africa. Massive food imports might represent a macro-loss for a nation as a whole but can be a source for considerable gain for private capital groups involved in this trading. Comparable manipulation occurred in the Global North where ‘manipulating the market’ (i.e. importing large quantities of food and selling it at low prices in order to decrease price levels in the domestic market) became an important strategy. Losses related to such imports were more than compensated by price decreases and associated profits in domestic markets. Markets were actively connected in order to manipulate them and squeeze out private profits (Saccomandi 1998; RABO Bank Group 2013; Ploeg 2019).

⁴Derived from <http://www.fao.org/faostat/en/#data/TP> and https://ec.europa.eu/eurostat/cache/metadata/en/ext_go_agg_esms.htm. In the trends shown 2009 saw a small drop. This is due to the 2008/2009 crisis that brought very low prices for agricultural products after the relatively high prices in 2007–2008.

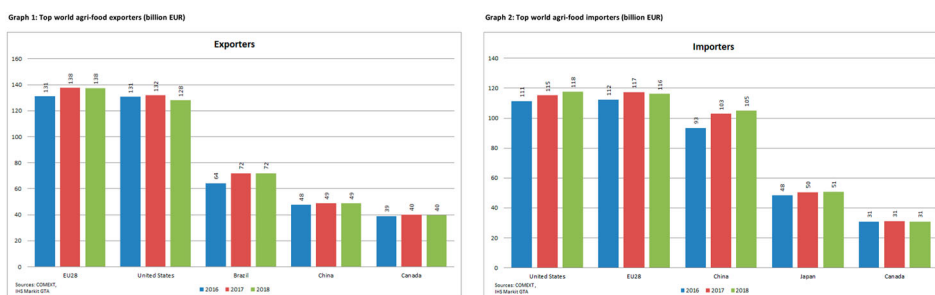


Figure 2. Top food exporting and importing countries (2016–2018).

As a consequence there is one large, complicated and contradictory global food-system. There are hubs, peripheries and many inequalities but, in the end, it is one interwoven whole that exists as a tangled ball of interdependencies.

Let's take, for an example, male calves. In 'normal times' these are sold, and transported, to large, specialized farm enterprises that fatten the calves after which they are processed in specialized slaughterhouses (run by companies, such as the *Van Drie* Group) and exported (as e.g. 'white calf meat'), especially to Italy (which produces insufficient calf meat to satisfy demand for classic dishes as *Saltimbocca*, *vitello al tonno*, etc.). All this generally functions smoothly. However, Covid-19 has brought a considerable decrease in luxury food consumption (much because restaurants all over Italy have been closed down), leading hubs such as the *Van Drie* Group to reduce both its acquisition of calves and the price it pays for them. Thus, in the Netherlands male calves have to remain on dairy farms that hardly have the space to accommodate them. So these male calves no longer contribute to farmers' income flows, while at the same time milk prices are also going down. In addition imports of calves to the Netherlands (some 800,000 per year), from Germany, Eastern Europe, Ireland and other countries has come to a nearly complete halt. In synthesis, the crisis has 'rolled back' from Italy, to Dutch slaughterhouses, specialized enterprises for fattening calves, dairy farms, transport companies, and then to Germany, Eastern European and other countries. Male calves are just one of the many, many 'commodities' for which the nodes of interdependencies stretch far out in time and space.⁵

Another concern about national-scale changes rolling across the world are the limitations on exports of rice imposed in India, Vietnam, Cambodia and Myanmar.⁶ This will undoubtedly induce immediate scarcities and hunger in large parts of Africa, just as they will have upwards effects on prices to be paid by consumers, which will further reduce access to food. Although the simultaneous increases in both exports and imports of food have been and are widespread in African countries as well, the peculiarity

⁵Another well-known case is the Italian feedlots where fattening of cows takes place. They depend on France and Poland for the delivery of calves. This system contrasts very much with the 'Chianina' system: animal breeding based on locally produced calves, feed and fodder (see Ventura 1995).

⁶Indian rice traders have stopped signing new export contracts amid the nationwide lockdown to curb the spread of coronavirus, as labour shortages and logistical disruptions have hampered the delivery of even existing contracts. At the same time Cambodia, Vietnam and Myanmar have curbed their rice exports, India mainly exports its non-basmati rice to Bangladesh, Nepal, Benin and Senegal, and premium basmati rice to Iran, Saudi Arabia and Iraq. Cambodia and Vietnam also export huge amounts of rice to Africa.

of the African continent as a whole is that the overall balance is increasingly negative (see [Figure 3](#)). This makes the food situation in this part of the world highly sensitive to further deterioration due to external pressures. The possible shortage of rice is just one example – others will undoubtedly follow. The cruel truth is that this overall fragility was well-known by insiders – just as it was denied in public discourse. The *Royal House of Morocco*, for example, owned considerable parts of the food processing industry and supermarkets in the country. Some ten years ago, these properties were sold (the ‘liberated’ capital was invested in green energy). This gigantic operation was done to avoid the possibility that any possible future food shortages could turn into food riots directed against the monarch. Meanwhile, however, *Maroc Vert*, the country’s agricultural development plan, directs more than 80% of its public resources to the agro-export sectors and only a mere 10% to 15% to peasant agriculture.

Yet another node of interdependency can be found in the agricultural ingredients for industrial concentrates for feeding animals. Prices for animal feed are rising rapidly at the moment, while dairy production and animal husbandry are nearly everywhere facing price drops because domestic demand is shrinking.

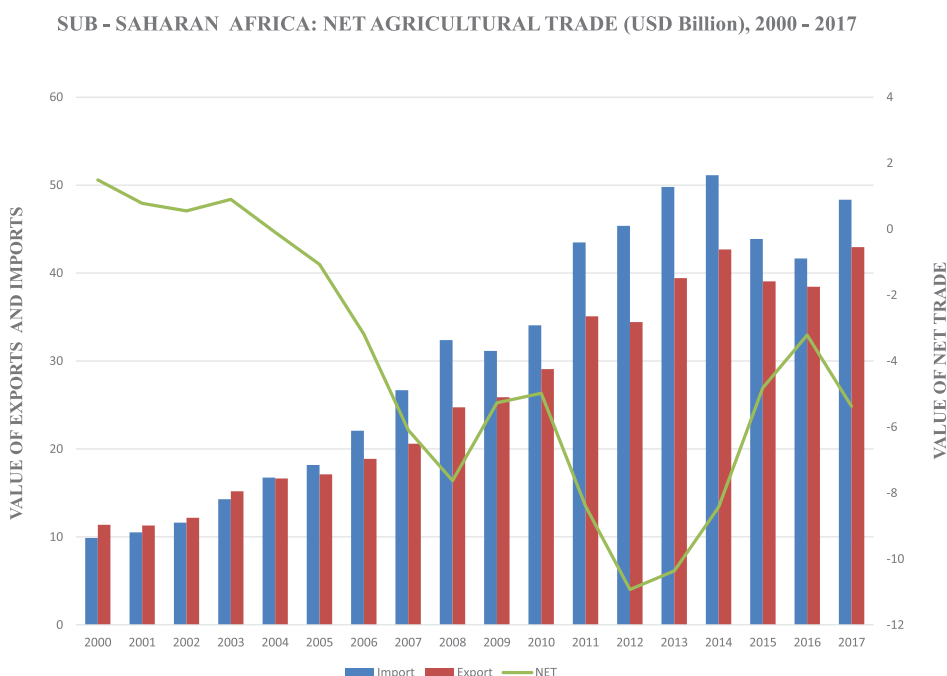
It is important to note here that this rolling paralysis does not stem from lockdowns as such (limitations enforced upon the circulation of people). Building on the example given above: farms keep operating, calves get born, transport remains possible, ‘green lanes’ allow for crossing borders. In Italy people may go to the shops or order home deliveries – the point though is that the *in-between transactions* are no longer profitable (or suitable for credit and insurances): there is too much insecurity. Consequently, the triangular trade between the Netherlands, Italy and other European countries has collapsed, calves cannot be sold anymore, farmers’ incomes have fallen and consumption is, in particular places, constrained.

An unavoidable consequence of interdependency is that once there is a germ of disorder in the system, it does not remain limited to a few places. Rather it spreads *everywhere* like ‘a virus in the system’.⁷ Stiglitz (2010) tellingly refers to *contagion*: ‘a failure in one part of the global economic system spreading to other parts’ (xiv; see also Posner 2009, 7). In the current situation, contagion constrains or, in particular cases, nearly completely blocks exports.⁸ Equally a blockade in one single country can easily generate a domino effect in several other places.

If domestic demand is going down (in some countries more than in others, and sometimes dramatically more) and/or the chain that is supposed to connect supply and demand is no longer functioning, imports will be reduced and this translates into problems elsewhere. One thing that this may trigger is increased redundancy for parts of the working poor and/or decreases in wage levels (with remittances to other places going down as well). In turn, these imbalances threaten the continuity and profitability of strategic interconnections and lead to dramatic declines in trade. This is how the

⁷Ironically, when there is a real virus, or bacteria, in the system, as was the case with Foot and Mouth Disease, Q-fever, and the like, the situation is ‘resolved’ by means of *stamping out*. That means that all animals in wide circles around the initial foci are killed and all transport movements (including those of humans) are forbidden. That is, the system is paralyzed until the viruses or bacteria are eliminated. Now, Covid-19 brings itself a paralysis, the more so since the ‘foci’ are, in the meantime, everywhere.

⁸This might be due to a range of specific causes. A sharp reduction in purchasing power and an associated reduction of market outlets; increased transport fares; lack of export credit facilities; lack of export-credit assurances; changes in consumption patterns away from imported goods; changes in main trading circuits, closed frontiers, and much more.



SOURCE: FAO calculations using FAOSTAT data on crop and livestock products trade

Figure 3. The increasingly negative net food trade balance in Sub Saharan Africa.

current tragedy is *actively evolving* as a consequence of system dynamics. While normally the imperative of profit-making speeds up and multiplies transactions, it is now slowing them down or even bringing them to a complete halt. And this also explains why the current crisis goes far *beyond* the impact of the initial biomedical problem and the associated state interventions.

The wry truth underlying all this is that out of all food produced globally, only 20% passes international borders; 80% is produced and consumed within the same country. Nonetheless, this major part is strongly affected by the many interdependencies discussed above. Thus, trouble travels from the international circuits to the domestic ones, just as it cascades the other way. Whatever the direction, the outcome is a wide range of negative consequences.

Growing levels of hunger are one of the consequences. As indicated by David Beasley, chief of the *World Food Programme* in a recent statement to the *UN Security Council*: 'There is [...] a real danger that more people could potentially die from the economic impact of Covid-19 than from the virus itself'. A 'hunger pandemic' could well be the result (Beasley 2020).

Precariousness plays a special role in these dynamics. Over the last decades, global market integration, agro-export orientation and increasing pressure from and for cheap industrial food have pushed millions of peasant families into conditions of marginality and precariousness and driven many of them into labour migration. Many of these flows were to the fields, orchards and glasshouses of large agricultural enterprises in Europe and the USA (Corrado, de Castro, and Perrotta 2017; Minkoff-Zern 2018) where

they became indispensable workers. Precariousness, however, came along with them. These migrant workers face low wages, chronic insecurity, often extremely bad labour conditions, bad housing and a nearly total lack of required hygienic conditions and medical support. This precariousness also became a chronic feature in food systems located in 'rich' countries. Now, the massive Covid-19 crisis has hit these workers very hard. Many of these migrant workers have lost their jobs. They have no welfare systems to fall back upon, neither in 'labour importing' countries or in 'labour exporting' ones. Restrictions on the movement of people make it harder for them to go their jobs, or return home. These effects typically translate in many directions and throughout the internationalized food system as a whole. First, harvests in 'labour importing' countries are being lost. Secondly, this may translate into particular food shortages not only in the 'labour-importing' countries but in other countries that normally import particular food items coming from the 'labour importing' ones. Thirdly, there is a sudden worsening of poverty in 'labour exporting' countries: migrant workers have no income anymore which hurts remittances that their families rely on. This translates into a contraction of internal demand for food in the countries initially exporting labour, which has knock on effects on farmers and peasants there. Thus, precariousness is expanding and contributing, step-by-step, to a seemingly unavoidable hunger crisis.

The level of food chains

Food systems exist as organized flows of goods, services and information that go from primary production to final consumption. A techno-institutional infrastructure is needed in order to make food products (and associated services) flow from the places of production to the places of consumption. This consists of companies that deliver the required inputs, technologies and other resources to the farms, transport systems, trading companies, processing units, distribution systems, supermarkets, wet markets, shops, restaurants, canteens, and, finally, the many kitchens in private homes. Food 'passes' through this infrastructure as an organized and co-ordinated range of transactions that enable food to flow from its place of origin to its place of consumption. This infrastructure, with its many flows, is increasingly controlled by food empires, which organize and co-ordinate it and make huge profits from so doing. They write and apply the scripts that specify how the many ingredients that finally make up our food travel through the infrastructure; how they are combined and where they are heading. Food empires are the large networks that control the production, processing, distribution and, increasingly, also the consumption of food (Table 1.2 in Howard 2016, gives an overview of the 25 largest food empires). The aim of food empires is to appropriate and centralize the value generated through the production, processing and distribution of food. In recent decades they have managed to achieve a huge concentration of these economic activities (Mooney 2017). In a period of shock and logistic difficulties, this high concentration could generate considerable setbacks in agricultural production both in the Global North and South.

Food empires may directly own parts of this infrastructure yet, increasingly, this is no longer the case. Food empires are not necessarily factory-based. Their power and influence lies in controlling the *connections* that link the different infrastructural elements and by doing so they control the farms, the processing factories, etc., in an indirect, yet very powerful, way (Ploeg 2018, 245–252). By controlling the many connections, food

empires also impose specific patterns of inclusion and exclusion. Only those ingredients (and the practices and places they stem from) that fit with the requirements contained in the script are accepted; all others are excluded. And inclusion is only a temporary condition: it can be converted into exclusion at a moment's notice.

Financial capital plays a central role in the operation of food empires, with financialization being both main strategy and significant outcome (Epstein 2005; Clapp 2014 and 2019; Fairbairn 2014; Isakson 2014; Russi 2013). Food empires expand through take-overs. They buy enterprises in order to realize high growth rates and, especially, to obtain a critical market share. In doing so they rely heavily on credit. Available data show that food empires are heavily indebted.⁹ However, through their leverage, they simultaneously obtain high levels of profitability (Posner 2009, 46–47). Internally, they organize many flows and many monetary transactions. Each transaction has to be profitable. If losses occur, the transactions will be eliminated – and flows redirected in order to find profitability elsewhere. The use of new instruments of finance, such as futures, commodity index funds, export credits and export credit assurances, further enlarge dependency on financial capital, whilst simultaneously rendering ‘food systems more prone to instability and more vulnerable to economic and environmental shocks’ (Clapp and Isakson 2018, 452).

Food empires handle large amounts of merchandise, much of which is perishable. The scale of the transactions (as well as the time-spans implied by perishability) is such that short-term credit is needed. Food ingredients (whatever their nature and whatever their specific location in the ‘chain’) are purchased on credit. That is, the provider (B in Figure 4 below) delivers the ordered merchandise to the buying party (A) on credit. Payment normally follows after 30–90 days (or when all the merchandise has been sold by A to its clients or consumers). However, there always is a risk of insolvency. That is, following Figure 4, that A is unable (or unwilling) to pay B. This obliges B to contract a so-called credit insurance from insurance company C which undertakes to compensate B in the case of A's insolvency. But there are two more steps involved. In order to buy the required raw materials and pay the wages needed to produce the ordered merchandise, B normally needs to contract credit from a bank (D). This credit is only provided if there is the underlying credit insurance from C which functions as a guarantee for the bank. This specific transaction is normally referred to as factoring. For the combined transactions (B using the credit insurance provided by C as a guarantee to obtain a loan from D), the so-called rating is decisive. This is issued by C (or another, independent agency) and synthesizes the performance, credit history and turnover of company B. The higher this rating, the lower the interest rate to be paid on the loans from D to B.

Trade credit insurances are indispensable for making global chains operate smoothly. They are the ‘grease’ that makes the system work. There are only a few insurance companies that provide these credit insurances and each of them is huge. The biggest ones are Euler Hermes which belongs to the Allianz group (total assets in 2019 1.011 trillion Euro, yearly revenue 142.4 billion Euro and operating income 11.9 billion Euro), Coface owned by Natixis of the French BPCE banking group (total assets 1,124 billion Euro), and

⁹Globo Rural (2009) revealed that the debt levels of the ten largest food empires operating in Brazil were sometimes 44 times as high as their own assets (the case of Sadia). In the case of Cargill the ratio of debts to own capital was 15:1. See for more data van der Ploeg 2019, 173)

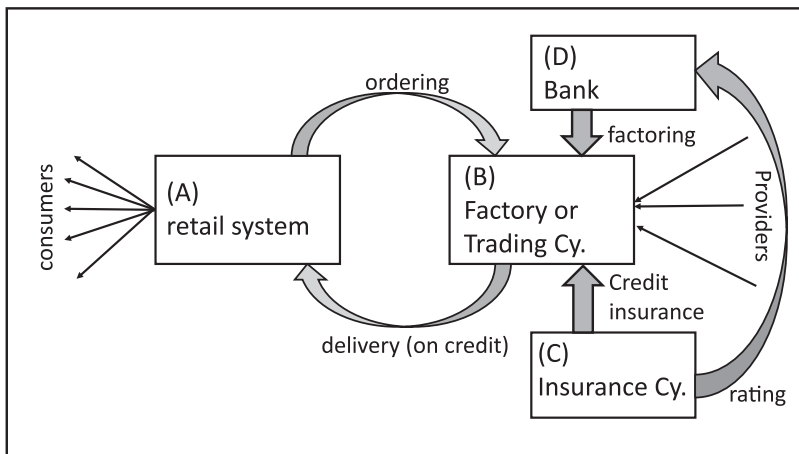


Figure 4. The complexity of financial transactions in international trade and chains.

Atradius. Some of the smaller capital groups operating in the market for credit insurances are Credendo (an Aon company) and Acumen Credit Insurance Brokers. The market for trade credit insurances is huge. Dutch companies alone provide more than 100 billion Euro of credit insurances for non-food items alone (NRC, 8th of April 2020, page E3).

During the 2008 financial crisis, these insurance companies withdrew trade credit insurances as they perceived that the market as a whole had become too risky. Thus the trade credit insurance companies actively deepened and prolonged the crisis (NRC, 2nd of June, 2020, E5: 'De echte pijn moet nog komen').

In 2019, the number of insolvencies in the global market grew by some 3%. This was due to the weak growth in GDP in that year. The Covid-19 pandemic will trigger a considerable decrease in world GDP (estimations vary widely) in 2020. There have already been a considerable number of insolvencies, with more expected. There is the danger that credit insurance companies will reduce the insurances they provide and these reductions could grow exponentially. Many Western European governments are considering massive interventions to sustain the magnitude of overall insurances in order to avoid a slowdown of international trade (or, in the case of a prolonged biomedical crisis, its collapse). The Dutch state, for instance, has intervened with 12 billion Euro, which would allow for a yearly trade volume of 200 billion Euro. (NRC, 8th of April 2020, page E3). In effect, the state is 'taking over the risks' from private credit insurance companies.

Now, let us assume that a proverbial 'virus' enters the system – it might be a real virus or the expectation that a virus might start to circulate or that economic risks are increasing, or some other factor. Even if we do not know how and where it will attack, there is the probability that it might affect (for whatever reason) some transactions at some particular points. These will become too risky, too expensive, or too troublesome (such as the export of white calf meat to Italy). Then export-credit will no longer be provided, trade credit insurances will be reduced, or some of the main companies will decide that a partial or complete closure ('lockdown') is preferable. Thus the 'fever' enters into the system: once certain transactions are affected, others will quickly be endangered as

well. Then, in the following stage, the main banks might be unwilling to refinance credits used for the operation of complete networks (as US banks are currently doing). Thus the crisis will 'roll on'. It will transmit itself in ever-widening circles, like the ripples in a pond when a stone is cast into it.

In the same way, the lack of buffer funds (own reserves)¹⁰ will likely lead the enterprises that control the food chain (i.e. the food empires) to halt transactions that now suddenly come with losses. The effects will be similar and will certainly 'contaminate' other transactions – even to the point where large parts of the real economy are deactivated.

Generally speaking, today's economies are built on huge debts (Boot 2009, especially Tables 2.1 and 2.2 on 20–25; Bonner and Wiggin 2009). The dynamics of modern capitalism is based on financial credit to generate economic growth (Stiglitz 2010; Beckert 2015). High levels of debts require ongoing growth. Only through continual growth can the many debts be refinanced and financial costs be paid. If the financial machinery were to come to a stop the whole process of capital accumulation would fall flat. The high level of indebtedness means that the future of our societies is mortgaged and has to render massive income flows (and profits) to feed the capital involved in the financialization of the economies.

Food empires show high levels of indebtedness. This is the outcome of two strategies. The first is 'empire building' through the already mentioned accelerated take-over of other enterprises. 'Shopping for enterprises' was the phrase used to describe Parmalat, an Italian milk trading company that spectacularly imploded in 2003 (Franzini 2004). This kind of expansion was born in the food industry. KKR was the first case – later described under the heading: 'Barbarians at the gate' (Burrough and Helyar 1990). It was not grounded on the profitability (and capital formation) of the enterprise itself but was completely dependent on credit. Thus, debts grow proportionally with the expansion of the imperial network. At the end of 1998 Parmalat, for instance, had overall debts that amounted to 2.1 billion Euros, more than the value of Parmalat as a whole (Franzini 2004, 61).

The second strategy centres around the acquisition of shares by the enterprise itself. This is done in order to push the total shareholder value of the enterprise upwards and the (often massive) acquisitions are funded with credits that can now be obtained cheaply on the capital market. Meanwhile, growing parts of the enterprise's own capital stock are paid out to shareholders as dividends (and as bonuses to the managers). In this respect the case of Unilever is symbolic: hedge funds pressed the company to change from a prudent financial orientation towards an approach that prioritized shareholder-value (Smit 2019).

Through one, or a combination of these strategies, many food empires have dazzling rates of indebtedness (food industries with a cooperative background are a relative exception). In turn, this high indebtedness requires ongoing growth, just as it increases vulnerability.

Financialization 'increases economic and ecological vulnerabilities in the food system' (Clapp and Isakson 2018, 438). If ongoing growth (and the derived increases in shareholder value and dividends) do not materialize there is the imminent and permanent danger that the invested capital will be withdrawn. If that were to occur, the corresponding (i.e. the controlled) part of the real economy will be de-activated.

¹⁰In today's economies having buffers is even dangerous as it makes enterprises possible prey for hostile take-overs (Smit 2019).

If a biomedical problem such as the Covid-19 pandemic hits the prospect of ongoing growth (and the derived remuneration of capital invested in the loans underlying large enterprises), it will almost unavoidably trigger a politico-economic crisis. Once this type of crisis starts various segments of the economy will be de-activated. That is what is occurring with, and through, the reduction of credit insurances, discussed above. It is also what happens with food empires in times of crisis. The same applies to banks who become less eager, or completely unwilling, to refinance the debts of enterprises and companies that show increased risk profiles due to the Covid-19 pandemic. All these mechanisms will induce a de-activation of the (real) economy. At the same, the reduced income levels of the working poor equally triggers de-activation through lower demand. And once there is de-activation (wherever it might be located) it spreads further and contributes to severe contractions elsewhere.

Unless actively corrected through strong social movements and/or state interventions, the waves of disaster (i.e. the accumulated effects of de-activation processes) will mostly flow to, and affect, the weakest sectors and the poorest people.

Financialization separates the economy into two layers: the real economy where production, circulation and consumption of socio-material goods and services takes place and a financial economy that provides the real economy with the financial goods and services it needs in order to operate smoothly. The relation between the two layers is highly unequal. The real economy is subordinated to the financial one. Financial capital (once part and parcel of each enterprise operating in the real economy) has been drained from the real economy and is centralized into the financial layer. Debts predominate at the ground level (the real economy), while capital abounds at the upper level (the financial economy), where it is owned by large capital groups, private equity, hedge funds and the rich. The top level is where capital is accumulated – where the extra value created on ‘the ground floor’ is centralized and added to the already available wealth (as amply documented by Piketty 2014).

When there is a crisis in the real economy, the top-level definitely will not accept a reversal of these flows. It will not accept a negative growth rate for the capital it controls (a ‘negative’ accumulation as it were). Preference will be given to selective de-activations within the real economy. This is happening right before our eyes. It is converting the tragedy of the Covid-19 pandemic into an overall and devastating politico-economic crisis that threatens to bring even more victims than the biomedical pandemic.

The specificity of food and food chains

In the west, very little food today comes directly from the fields and cowsheds (Pollan 2008; Roberts 2009). Today food increasingly is a commodity made out of many ingredients that may have an agrarian origin, often combined with ingredients that do not. Food has become artificialized. As a result, the number of connections and transactions required to manufacture each food product has exploded. This, together with just-in-time-delivery, has increased vulnerability.

Food chains are balls of interdependencies. Just as is the case in chains generally, the many connections through which the food system operates are shaped as complex and interlinked commercial and financial transactions. These transactions are controlled by

the centres of the different food empires, just as they have to feed them. And once some of these connections no longer meet the expectations of the food empires and the conditions they impose, they are interrupted and suspended. Due to the many interdependencies this is like throwing a stone in a pond: it produces widening circles of turmoil that, together, deactivate ever-wider parts of the real economy.

For the moment, the socio-technical infrastructure is intact and capable of producing and making products flow. Farms continue producing. The same applies to food industries (except for, may be, the slaughterhouses), transport systems, shops, markets, supermarkets and consumers. The latter (at least the better-off in this world) continue to do shopping (or order home deliveries). They keep on preparing their meals and consuming them.

Nonetheless, the food system is (and will remain) in crisis – as are several other industrial and service sectors. This is caused by the dominance of capital (embodied here in, and as, food empires) over the production, processing, distribution and consumption of food or other products and services.

Yet in the food sector there are many specific and nasty problems. There has been a reduction in demand (for example for flowers and for food products that are delivered to restaurants, and also due to an impoverishment of low-income groups especially, but not only, in the Global South). There is also the collapse in labour supply (of migrant workers especially). And there might be additional problems in the medium run if and when the technological support structure will no longer be able to provide spare parts, repair and keep the complex agricultural technologies running and/or to deliver all kinds of external inputs. There are reports from China that medium, and especially, large farm enterprises are confronted with shortages of inputs such as feed, animal vaccines, fertilizers and so on. In several cases, this has led them to suspend production.

However, these *specific* problems do not explain the *generalized* crisis in, and of, the food system. It cannot explain the abrupt and massive increase of people now threatened with starvation, nor does it explain the overall and global decrease in farm gate prices. And these specific problems do not explain why farmers' incomes nearly everywhere are decreasing.

The food system(s) should have been able to address and absorb the indicated shocks. There should have been buffers at the level of farm enterprises; there should have been food stocks (Cohen and Smale 2012) just as there should have been the possibility to produce for new stock-building in response to reduced demand and/or lower prices. More generally, when effective demand for food is going down, food stamps should be distributed, allowing people in need to acquire food (instead of just financing large companies).

Although there are a few exceptions (see FAO 2020), most of these counter measures have been neglected and remain unused. They are outside the scope and reach of the now hegemonic neo-liberal policies that suggest that 'the market will resolve such problems'. However, 'the market' will not do so. Instead, it increasingly deactivates the operations of the food system – unless the state fuels its operation by pouring billions of Dollars or Euros into it.

Theoretically important here is that capital, characterized by Ye et al. (2019) as being increasingly an *extractivist* (instead of productive) force, is emerging here as *paralyzing force*. If food empires represent the control of (financial) capital over the real economy (which is increasingly financialized), and if the real economy enters into difficulty (some transactions not being profitable anymore), then financial capital withdraws and (due to

the high degree of financialization) the real economy becomes paralyzed. Financial capital is not able (nor willing) to solve the real problems of the real world – it is only interested in further accumulation. That is why capital is massively withdrawn from countries in the Global South whenever and wherever there is a crisis (as happened in Mexico in 1994 and Argentina in 2001 and 2019, and many other places besides) and that is also why the real economy of large parts of the world is now paralyzed in the aftermath of the appearance of Covid-19.

Basically, there is one strong and radical remedy. That is to shift all debts from the real economy to the different capital groups that together make up the financial economy and then surgically separate these capital groups from the parts of the real economy they control. This means that the real economy can start to operate again and that the asphyxiating debts are dealt with by the capital groups concerned. Such a remedy has been successfully tried out in, and during, the so-called Bondi intervention that followed the breakdown of Parmalat in Italy and allowed for the *continuation* of its productive and commercial activities (Ploeg et al. 2004; Clarke 2007; Giudici 2006). This remedy basically involved constraining the banks that provided credit to Parmalat (whilst knowing that things were going wrong) to pay its debts – the more so since they were earning a lot of money from the interests paid by Parmalat.

The level of primary production

Once, the capacity to face difficult times and guide the farm through rough tides was considered to be an essential ingredient of the art of farming. Throughout Europe, the agrarian crises of the 1880s and 1930s left deep scars, which brought new responses that became deeply anchored in cultural repertoires. The construction of (vertical) cooperatives, the institutionalized search for innovations and the style of farming economically (building as much as possible on one's own internal resources whilst minimizing the use of external resources) are just some of the solutions that helped peasants to find a way through the crisis and which would also put a strong imprint on the decades that followed.

The capacity to steer one's farm through rough and difficult times was strongly eroded in the years of economic prosperity and, later on, by the Common Agricultural Policy which effectively constructed a set of protective shields (which, by the way, was not the same as protecting average farm incomes). Protection included guaranteed farm gate prices for longer periods of time as well as market-stability (with surpluses being taken out of the market). This allowed farmers to increase their monetary outgoings (for both external inputs, credit and new technologies). The collective memory, that stressed farming economically, faded away. However, the capriciousness of the markets would show up again, at the start of the twenty-first century, demonstrating that farm development is far from a simple and linear operation.

In the second half of 2008 and first half of 2009 the dairy industry in Europe and other parts of the world was in crisis. Although the immediate causes of this crisis differed from those of today, the effects are, nonetheless, highly relevant for exploring the mechanics of the current Covid-19 crisis. During 2008, world market prices plummeted and since protective agricultural policies (import levies, export subsidies, price protection, production quotas, support for marginal areas, etc.) had been demolished, farm gate prices decreased abruptly. The results ran against the apparent logic that was supposed to govern

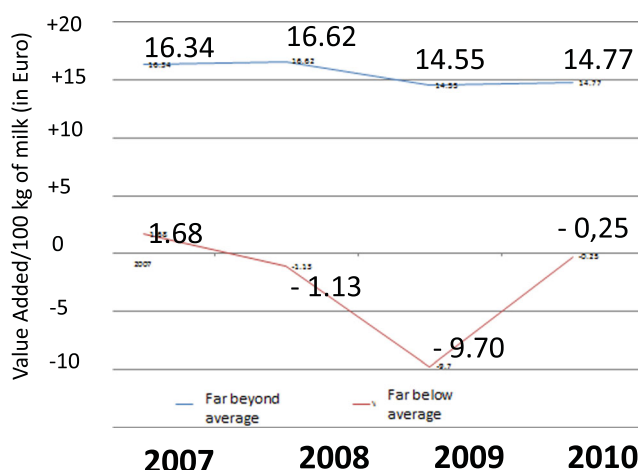


Figure 5. Different levels of VA/100 kg 2007–2010.

agricultural competition and development. It turned out that the largest farms that had expanded more than others (having spent more in acquiring extra land and new technologies) suddenly faced a huge problem. High financial costs and high levels of external input use created a low margin for these large-scale, high-tech farms, which suddenly found themselves extremely vulnerable to the price volatility that came with the liberalized markets: the abrupt drops in the farm gate prices resulted in them having negative cash flows. Since they had hardly any financial buffers this would have meant the demise of many large entrepreneurial farms. Interestingly, peasant-like farms fared far better through this difficult period. They were still structured to deal with difficult times.

In the aftermath of the 2008/2009 crisis, two research teams from Wageningen University started a large scale inquiry into the differential effects of the abrupt price drop (Oostindie, van der Ploeg, and van Broekhuizen 2013; Dirksen et al. 2013). They asked if all farms were affected equally or, if some farms fared better through the difficult period than others? The analyses were based on constant samples that covered a 4 year period (2007–2010). Thus the effects of the price drop could be compared with the years before and after. Since these were constant samples, individual farms could be followed over time, which allowed for a probe into the *differential* effects.

Oostindie et al. calculated the net value added (VA) per 100 kg of milk for each single farm in 2009, the most difficult year. Then the sample as a whole was divided in four strata (VA/100 kg milk far above average; above average; below average; far below average)¹¹ after which the VA/100 kg milk was calculated, for the same strata, in the *other* years. The results are summarized in Figure 5, below. It gives the findings for the two most contrasting strata: farms with a VA/100 kg milk in 2009 far beyond average (with $n=204$) and farms with an VA/100 kg milk far below average (with $n=178$).

This initial exploration offers three important insights. First, it showed that in the year of deep crisis (2009) there were huge differences in the VA/100 kg milk. These ranged from – 9.70 Euro per 100 kg milk (a strongly negative cash flow) to +14.55 Euro/100 kg milk.

¹¹In statistical terms: net VA/100 kg of milk per farm $> M+s$; in between M and $M+s$; in between M and $M-s$; $< M-s$ in which M refers to the average value and s to the standard deviation around the average.

Secondly, it turned out that these differences were part of more established trends. One stratum was characterized by high levels of VA/100 kg milk for the whole period (before, during and after the crisis), the other stratum showed an already low level before the crisis (less than 2 Euro profit margin), which then turned into 'the red' (negative VA/100 kg milk), after which it only recovered with difficulty. This latter stratum was much worse affected by the crisis. From 2007 to 2009 the VA/100 kg milk fell sharply by 11.30 Euro while the other stratum was hardly affected: VA/100 kg milk decreased by only 1.79 Euro. It is as if the two strata operated on different planets!

Additional analysis showed that the stratum that was able to face the price drop consisted of somewhat smaller farms, with a higher labour input than those that entered into a negative cash flow. The amount of milk produced per unit of labour force in the latter group was 35% higher than in the former. This was strongly associated with different levels of mechanization and robotization (depreciations in the resilient group were 5.61 Euro/100 kg milk as opposed to 14.25 Euro in the vulnerable group). The two groups' levels of debt also differed enormously: the resilient group had to repay 2.19 Euro/100 kg milk in interest payments compared to 7.15 in the vulnerable one.

These data make clear that the resilient stratum was largely composed of peasant-like farms, whilst the second stratum represented the entrepreneurial type of farms: larger, more specialized, more intensive, with a higher technological level, making more use of external inputs and carrying far higher debts (that were associated with their size and technological level) (Oostindie, van der Ploeg, and van Broekhuizen 2013). The analysis of the second data set (Dirksen et al. 2013) rendered comparable results. In a way, the prolonged price drop turned the world upside down: with small peasant-like farms performing far better than large entrepreneurial ones.

This unexpected reversal should have provoked a wake-up call and a re-orientation in agricultural policies – both at the national and supranational levels. However, the European Commission, ministries of agriculture, dominant knowledge systems (agricultural universities included), agribusiness and the banks persisted in supporting the prevailing trajectory. The banks, for instance, decided to refinance the debts of the large, high-tech farms and thus materially saved these large, entrepreneurial farms.

The two most 'modernized' farming sectors within Europe (those of Denmark and the Netherlands) show extremely high debt levels. In the Netherlands, the total debt of farms with the main agricultural bank (RABO bank) is close to 30 billion Euro. Adding debts to other banks (such as ABN-AMRO and ING) their total debts might come close to 35 billion Euro (excluding debts contracted within families). These debts are mainly (though far from exclusively) concentrated in large, rapidly expanding, high-tech farms that are operated in entrepreneurial ways. These farms have relatively low margins (see Figure 5) and hardly any buffers and are, therefore, highly vulnerable. The farm gate price decreases that are emerging as a consequence of the Covid-19 outbreak (Friesland Campina, for example, just decreased the price they pay for 100 kg. of milk from 35 to 32.50 Euro)¹² might bring them to the point of collapse. LTO, the Dutch national farmers' union, has already appealed for billions of Euros for extra economic support,¹³ although it is doubtful

¹²This might appear, at first sight, as a relatively small decrease. But in relation to the margin realized per 100 kg of milk in large farms, it is considerable, and in some instances, disastrous.

¹³This would be in addition to the financial support that comes from the Common Agricultural Policy, which largely goes to the biggest farms.

whether such support will be granted. Banks are not able to do so anymore and the government is aware of the widespread societal unease with 'industrial agriculture', which is associated with the climate crisis, threats to nature and biodiversity, low levels of animal welfare and the threat of generating outbreaks of zoonotic diseases that might seriously harm public health (as occurred in the Netherlands with Q-fever).

Micro-macro relations (and the associated issue of aggregation) complicate the analysis of agrarian questions. One cannot simply project (or extrapolate) findings that are valid at the farm enterprise level to the level of an agricultural system as a whole – or the other way around. It creates fallacies of the wrong level. A crisis at the level of entrepreneurial farms (facing negative cash flows) does not necessarily imply that the agricultural sector as a whole will collapse. Maybe it will, maybe not (as history has frequently shown).¹⁴ It all depends on intermediary mechanisms, some of which I will discuss below.

If one group of farms were to go broke this would probably provoke downward pressures on land prices. This would have an impact on other categories of (less indebted) farms which would see their solvency seriously reduced (as the drop in the value of land would provoke an immediate deterioration of the ratio of their debts and own capital). Hence, these farms would also enter into the danger zone. This is yet another hidden mechanism of de-activation. In the past, it could be contained through interventions from the banks. Nowadays, the array of mediating measures is fast-approaching their limit. The cannons have been already fired, are overheated and unapt for further use. This means that the full weight of the politico-economic crisis that is now rolling on will be paid by the large, entrepreneurial farms themselves.¹⁵ They are, however, unable to do so and this will trigger a scenario that has already been feared for many years: large farms going broke, creating downward pressures on land prices which will bring more farms into crisis. What would be new, however, in the current situation, is that a wave of farms going broke could induce subsequent waves of land grabbing: a concentration of land into the hands of capital groups that are searching, more than ever, for safe havens to locate their capital.¹⁶ At the same time, other intermediary mechanisms might emerge, such as populist movements forcing the state to channel public resources to the farms in crisis or suddenly emerging pressures for greater local sourcing and national self-reliance (when protectionist measures provoke a 'food war'). All this might countervail – at least temporarily – a crisis at the level of the agricultural sector as whole. It will be clear that the specific mix of 'positive' and 'negative' intermediary mechanisms (including the role and strength of peasant movements) will strongly vary from country to country.

¹⁴During the 1880 crisis most capitalist farms in the Netherlands went broke. This triggered a wave of repeasantization (new small peasant farms emerging everywhere), which considerably strengthened the agricultural sector as a whole. The same could be said about the collapse of state-controlled agricultural co-operatives in Peru (which collapsed during the 1990s, giving rise to the formation of many new peasant farms) and the dismantlement of communes in China (after the Anhui uprising in 1978) and the implosion of *sovchozes* in Russia. Edelman and Seligson (1994) describe how the disintegration of 'rich farms' in Costa Rica gave rise to many new, small farms (see also Berg, Hebinck, and Roep 2018 and Cliffe et al. 2011).

¹⁵Unless the state intervenes (as it already has for flower producing farms), although it remains to be seen whether this can be done for the far larger sectors, such as dairy farming, intensive animal husbandry and horticulture.

¹⁶This danger was discussed a few years ago in the European Parliament and the Council of European Regions. It turned out that the European Commission does not even have a mechanism (an 'observatory') to register massive land grabbing. It might very well go unnoticed – until it is too late.

On the agility needed for adequate 'exit' strategies

The critique of industrial agriculture is well developed. Several of the criticized features have come now, during the Covid-19 crisis, to the fore as simultaneously being (part of the) main mechanisms that have helped to translate the biomedical crisis to a wide, complex and persistent politico-economic crisis. The same features also imply that a return to 'normality' – that is: getting agriculture started again – will be a time-consuming, difficult and painful process that will bring astronomical additional costs. In several cases, a 'reset' might turn out to be downright impossible. [Table 1](#) summarizes the features that, at the level of food systems as a whole, have helped to magnify the crisis and which will, somewhere in the future, make a recovery or return to business as normal difficult.

These features, especially when taken together, imply a considerable rigidity and path-dependency. Together they compose a web of dependencies that will be hard to unravel – even more since the politico-economic forces that drove the underlying processes will surely propose a return to, and even a further acceleration, of these tendencies.

At the level of single farm enterprises (especially the large entrepreneurial farms that used to be the favourite foci of agricultural policies) there is considerable rigidity that will hamper the needed recovery. There is no agility in these types of farms to deal with the ruins that will be left after the current pandemic and crisis.

Take for example the size and scale of these farms.¹⁷ In hegemonic discourse, it is generally assumed that the larger a farm enterprise, the better it is. Agricultural policies actively support scale-enlargement. They do so through a range of instruments that not only include price-support, subsidies and fiscal benefits, but also environmental policies, spatial planning and support mechanisms for technological R&D that are all tuned to the needs and dynamics of large farms. The same applies for provisioning industries. Since large farms (due to their specific technological profile) proportionally acquire more inputs (and more sophisticated means of production), provisioning industries give a considerable discount to large farms, thus stimulating farm growth. Banks are also more favourable to large farms. Food processing industries (and large trading companies) also channel benefits towards large farms. Since dealing with the latter brings lower transactions costs, they offer extra premiums for large volumes of production (in this respect agribusiness operates as a mechanism of redistribution from many small farms to a small group of large farms). Thus, the large farm seems to coincide with the notion of superiority – materially as well as symbolically.

In times of turmoil, however, it is the other way around. Then the sheer magnitude of the farm suddenly appears to be a considerable disadvantage. Having a large farm means having high fixed costs that prohibit far-reaching adaptations in the organization of production. It also implies that volumes of production are far too large to be able to provision local and regional markets. The 'world market' remains indispensable – the more so since production is highly specialized (limited to one or two products). The magnitude of the farm (in combination with the high levels of fixed costs and debts) also implies that organizing the 'reset' in phases (starting with limited volumes and then a step-by-step growth in order to explore the new market situation) is unthinkable. In the case of fruit and

¹⁷Size refers to the magnitude of a farm and is often expressed in hectares or number of animals or in terms of economic size. Scale refers to the relation between size and labour inputs. Size is expressed in absolute terms, scale is relational.

Table 1. The main weaknesses of the dominant food system.

Accelerated globalization with a widening range of dependencies
A high degree of artificialized food, with associated risks for public health
Subordination of production, processing, distribution and, to a degree, the consumption of food to financial capital (financialization)
The enduring neglect and marginalization of peasant agriculture
A progressive de-coupling of farming and living nature (especially in the entrepreneurial pole of the agricultural sector)
Strongly reduced employment levels, a degraded quality of work, and growing unattractiveness of agriculture for young people
Highly dependent on state support ¹⁸
Susceptible to, and generating, diseases
Wasteful cycling of large shares of the world's arable land through massive concentrations of animals (Weis 2013)

vegetables, the restart of large farms implies a sudden recourse to migrant workers. It is open to question whether they will be willing to come back.

In short, the agility needed for reconstruction in the post-pandemic era is lacking among large, entrepreneurial farms. They will stumble over their own size.

On the other hand, peasant agriculture has proved, throughout history, its capacity to recover its productive capacity quickly after external shocks. The restart of agriculture after Hurricane Mitch in Central America (Holt-Giménez 2002) and the devastating earthquake in Sichuan, China (Jin 2014) are but a few contemporary examples¹⁹, although such resilience might be lacking in other places. It very much depends on how citizens, workers, farmers and the state relate to each other. Analytically, the capacity to react in an agile way is based on the self-owned resource-base that is permanently reproduced within the farm itself. This capacity depends very much on history, town-countryside relations, the strength of cultural repertoires and, indeed, state-peasantry relations.

Searching for alternatives

The food systems of the post-pandemic era will be characterized by a range of contradictions. Some of these are new, others are sharpened versions of older ones. I will discuss six contradictions. They all apply to the domain of food and agriculture, although some have wider validity.

First, the Covid-19 crisis marks the definitive passage into the era in which the profits realized in the domain of food and agriculture are privatized, whilst the losses are socialized. There is increasing popular discontent about this.

Second, there will be, in the post-pandemic era, continued impoverishment within the real economy (notably for farmers, workers in the food industries and large retail and for consumers facing higher prices for food), whilst there will simultaneously be accumulation and centralization of wealth in food empires.

Third, for many people (especially, but not only, those not having their own resource-base) their economic activities and lives will be reduced to systemic insecurity. Temporary

¹⁸This shows up in many different forms. In Brazil, Argentina and other countries of South and Central America it occurs as general acquittal of debts after recessions (especially for large farms engaged in production for exports). In the EU it shows up as the hectare payments that mostly benefit large farms, whilst the USA frequently allocates large amounts of public money to large farms through its Farm Bill.

¹⁹In the aftermath of the pandemic local authorities and peasants in China, decided, in many places, to immediately augment production, changing e.g. from one rice harvest per year to two and starting to cultivate idle land. Wen (2020) highlights the role of rural areas in China during the current Covid-19 pandemic.

incomes might be maintained if economic activities are (temporarily) induced by, and included in, processes of capital accumulation, but insecurity will become chronic. As a consequence, precariousness will become the condition of the many.

Fourth, the world will continue to face the disgusting and inhumane combination of malnutrition, hunger and starvation on the one hand and the massive destruction of food on the other. It is painful that this destruction is legitimized as needed for 'saving the free market'.

Fifth, large amounts of poor (migrant) workers will be looking for seasonal work in agriculture in order to survive. And although they are badly needed by specific types of agricultural enterprises, they are at the same time persecuted and hindered during the process of getting to their work location.

Sixth, although there are ample possibilities to reground the production, processing, circulation and consumption of food on new, strong and locally rooted solutions (that have proved once again their viability in times of the Covid-19 crisis), the hegemonic forces will try to restore ancient routines, thus enlarging the possibility that similar crises will reappear. However, such a 'return to normal' will probably run counter to civil society claiming a democratic say in the production and provisioning of food.

In the search for alternatives that allow us to go beyond these contradictions, it is important to build on counterpoints that have been developed over recent decades and which, during the current Covid-19 pandemic, are showing once again, and probably more than ever, their relevance. I will briefly discuss three such counterpoints. These are food sovereignty, peasant markets and peasant agriculture.

Food sovereignty

The Covid-19 crisis shows that the current situation of nations being simultaneously dependent on imports and exports of food cannot, in times of crisis, but translate in serious shortages and/or surpluses.²⁰ Both bring disastrous and probably enduring effects – especially since they enlarge precariousness and thus deepen the crisis. In this context, struggles for food sovereignty (Nyéléni 2009; Holt-Giménez and Patel 2009; Borras et al. 2014 and 2015; McMichael 2014; Shattuck, Schiavoni, and VanGelder 2017) come to the fore as a strategic counterpoint.

It is clear that the spatial division of labour that currently exists in global agriculture cannot simply be restored in the aftermath of the Covid-19 crisis. A redistribution of agricultural activities, in order to ensure that every country (some notable exceptions apart) can and will produce the largest part (say 90%) of all the food they need, is imperative. Any argument that 'food security' will be secured in and through the 'free market' is ludicrous. The Covid-19 crisis clearly shows that today's markets are just enlarging the problems: contributing to, instead of remedying, scarcities, hunger and starvation. The crisis equally highlights the structural vulnerability of the many millions who are not able to generate incomes in a relatively autonomous way. Precariousness cannot be accepted anymore – which is tantamount to saying that the now-dominant forms of large-scale, industrialized agriculture and the (interconnected) marginalization of peasant agriculture cannot be restored. There can

²⁰Thus there suddenly was, in the USA, a surplus of deep frozen fried potatoes that increased from 750 to 13,000 million US Dollars. At the same time supermarkets suffered from shortages of fried potatoes. It is exemplary for the current crisis: surpluses and shortages going together in many instances. This is also due to the high degree of specialization and associated rigidity at the level of logistics.

be no simple return to 'normal'. Whatever the exact nature of agricultural systems will be in the future, it is paramount that, apart from food, they must also produce high employment levels and dignified livelihoods. Only in this way can poverty be reduced and resilience to external shocks secured.²¹ Combined with the need to mitigate climate change, this also points to the need to take agroecology as the ordering principle for agricultural production worldwide. Both apart, and taken together, these features clearly relate to the concept of food sovereignty developed over recent decades by *La Via Campesina*, the main international network of peasant movements (Desmarais 2007; Edelman and Borras 2016).

Peasant markets

Peasant markets (and the associated on-farm processing of agricultural products into food) represent an important antithesis to food empires. Peasant markets, both old and new (Ploeg, Ye, and Schneider 2012), traditional 'wet' markets and newly created forms of e-commerce are circuits through which non-artificialized food (that is genuine, fresh and integral agricultural products) is traded directly between producers and consumers. The transactions are embedded (or 'nested') in mutual expectations and shared definitions of quality and just price levels. Credit, trade credit insurances, factoring and rating are of no relevance here. These territorial markets are not designed to produce profits to drive capital accumulation. They aim to produce acceptable levels of income for the involved actors (producers, traders) and to supply good wholesome food at acceptable prices to the participating consumers. Mostly, these markets are commons: they are not owned by private actors and are not for sale. They can develop into strong and solid parts of regional economies (Schermer 2017). In many places they are the main circuit for food provisioning. Beyond that, they generate and sustain considerable employment.

It is highly significant that during the first months of the unfolding Covid-19 crisis peasant markets became, nearly everywhere in the world, foci of contestation and struggle. In many places authorities, always at odds with what they perceive as the 'anarchism' of popular markets, tried to close down these markets. The impossibility of social distancing was often a main argument for such closures. On the other hand, in many of these markets the self-organizational capacities of the involved actors quickly brought all kinds of new solutions. In Porto Alegre in Brazil, for example, activists occupied neighbouring streets so that peasant markets obtained the space required for social distancing. In the French, Basque Country markets became one-way streets, with just one entry and exit point, and were expanded to allow for adequate social distancing (plus the food vendors could also occupy the space normally used by non-food vendors who were not permitted to participate). In many parts of the world home delivery (from the peasant market towards the homes of clients) expanded quickly. *La Via Campesina* strongly supported the defence of these markets. In Spain the '*manifiesto para la defensa de la producción campesina*' [the manifesto for defence of peasant agriculture] proposed a further extension of peasant markets. It was signed and supported by hundreds of NGOs.²² *Campi aperti* [Open Fields] in Bologna, Italy,

²¹In the pre-Covid-19 world some 50% of the world's poor people (living on less than the proverbial dollar a day) were rural (IFAD 2010).

²²See: <https://soberaniaalimentaria.info/otros-documentos/luchas/728-movilizacion-sin-precedentes-a-favor-de-la-alimentacion-de-proximidad>

organized home deliveries to respond to the lock down of farmers' markets.²³ *Bienvenue a la ferme* [Welcome to the farm], the French organization for the direct marketing of food, organized the 'Drive fermier' [a kind of 'peasant drive-in'] with new selling points inside the cities. In China there was a quick expansion of e-commerce by peasants and peasant cooperatives. These new initiatives were partly built on the experiences obtained earlier during the construction of peasant markets (Wu, Ding, and Ye 2015). The political importance of all these, and many other, initiatives lies in that it shows that there are many solid alternatives to the dominant food chains. Thus, every peasant market represents a visible, material and symbolic rupture in the hegemony of food chains, big supermarkets' circuits and more generally, the capital-controlled distribution of food.

Peasant agriculture

Peasant agriculture is an evident counterpoint to the fragility of large scale, entrepreneurial agriculture. It is manifestly present in empirical reality, strongly rooted in social movements, but simultaneously neglected in hegemonic views (Ploeg 2018). Facing marginalization for decades, it has nonetheless resisted and simultaneously renewed itself. The notion of peasant agriculture refers to those (family) farms that operate with low monetary cost levels due to (as we would now argue) their proto-agroecological way of farming in which the coproduction of man and nature is central. Consequently, income levels are relatively high and, above all, relatively stable (Ploeg et al. 2019b). There is, as it were, inbuilt resilience which is due to a low use of external inputs, mixed cropping schemes and the centrality of skilled labour. In more classical terms: the degree of commoditization is low and this helps them to get through rough and difficult times (Ploeg 2010). These same peasant-like farms try to avoid high levels of financial dependency on banks. They often engage in multifunctional activities (that further strengthen the total income of the farming family) and cooperation with other farmers is the rule rather than the exception (Lucas et al. 2014). Farms like these often produce mostly (or only) for national, regional or even local markets (Wilkinson 2004). Many of them engage in peasant markets.²⁴ Young people (both from agrarian and non-agrarian backgrounds) have, over the last decades, further developed the repertoire of these farms to produce continuity and enlarge resilience (Morel, San Cristobal, and Léger 2018).

Peasant farms are likely to fare relatively well in the politico-economic crisis provoked by the Covid-19 pandemic, although there are also worrying indications that in some parts of the world (like the USA) they will not weather the crisis. Peasant farms are dimensioned according to the available labour force of the peasant family so there is no (systemic) need to mobilize wage workers. Peasant farms contain (most of) the resources needed for production (they are self-provisioning) and they often market directly at least part of their produce. In the framework of 'modernization' such features were all considered as signs of weakness and backwardness ('legacies of the past'), but in times of Covid-19 they re-emerge as embodying resilience.

Especially important (in the context of post-pandemic arrangements) is the capacity of peasant agriculture to generate relatively high levels of employment and to maintain

²³https://bologna.repubblica.it/cronaca/2020/03/16/news/mercato_campi_aperti-251421413/- <https://www.drive-fermier.fr/>

²⁴The presence of short chains and direct relationships between farmers and retailers is contributing to the stabilization of prices and the assurance of the continuity of supply.

Table 2. Employment levels for different styles in different years (employment expressed in Full Time Labour Units: LU).

	To produce 1 million kg of milk, 1987	To produce 1 million kg of milk, 2010
Peasant-like style of farming	3.5	3.3
Entrepreneurial style of farming	2.5	1.9

Sources: Ploeg et al. 1992 and Oostindie, van der Ploeg, and van Broekhuizen 2013.

these over time (see for an illustration Table 2). In 1987, research showed that peasant-like agriculture generated 40% more employment than entrepreneurial agriculture to produce the same amount of milk (the income levels per unit of labour force were roughly the same). This was the case in 1987. Over time this difference has been enlarged considerably. In 2010 it amounted to 73% (with, again, equal income levels per unit of labour force). Through the creation of considerable employment, peasant agriculture strengthens the real economy and more specifically, it helps to reduce precariousness.

Tying the building blocks together: the challenges ahead

Peasant agriculture is a formidable starting point for the much-needed new solutions for the post-pandemic period. It supplies the great majority of food consumed in the world and is able to steer itself through difficult periods (Langthaler 2012). Peasant agriculture is adverse to taking on large and longstanding debts, although considerable segments of it are now highly indebted.²⁵ It has resisted dependency (and its current form, called financialization) through the ages. Yet it is marginalized in many parts of the world and its linkages with consumers increasingly depend on food empires which appropriate many of the fruits resulting from hard peasant labour. Peasant agriculture is relatively close to agroecology (Altieri and Toledo 2011), yet still miles away, in many parts of the world, from a complete agroecological transformation. In synthesis: peasant agriculture presents a *promise* for a post-Covid-19 reconstruction of food and agriculture – but it also has to evolve itself, just as it needs to be supported through land reform and agroecological research and extension.

When rethinking the future to come (and hopefully it will come soon) peasant agriculture, food sovereignty, peasant markets, and agroecology emerge, as I have argued throughout this paper, as important building blocks for the required alternative(s). The more so since there are two basic human rights underlying the struggles that aim to construct the needed alternatives. These are the *right to food* (which is currently strongly endangered for the working poor and marginalized people all around the world, and more so during the Covid-19 crisis) and *the right to work the land* in a self-chosen way.²⁶

However, we need to be aware that a mere addition of the mentioned building blocks does not automatically constitute a stable and coherent model that will help to reorganize

²⁵Due to the squeeze on agriculture and the temptations of ‘modernization programmes’ large segments of peasant agriculture have also entered into indebtedness (see e.g. Stoll 2010 and Taylor 2011). This has often brought de-activation and damaged internal relations amongst the peasantry. However, through processes of repeasantization these trends are being reversed in some places. On the whole peasant-like agriculture is less indebted and more prone to engage in the construction of an autonomous resource base, which includes an emphasis on self-financing further development and growth (Ploeg 2018).

²⁶This latter right is central to the Declaration of Peasant Rights, accepted by the United Nations (see Claeys and Edelman 2020).

the disorder left by the current crisis. These building blocks will only function as convincing and mobilizing elements in struggles for alternatives if they are properly coordinated in a coherent manner.

When looking at these building blocks through this lens, three black holes emerge. Each hole represents a range of uncertainties, unknowns, questions and challenges. Together they constitute a strategic programme for research and debate.

The first black hole concerns the interrelations between the different building blocks (and the levels they imply). When relating, say, the concept of food sovereignty (which applies especially at the national level) to peasant agriculture (in which the micro level of single, albeit often cooperating, farms is central), it becomes clear that in many situations the two are somewhat at odds (e.g. peasant farms producing mainly or only export crops, or, as occurs, nowadays, 'flex crops', whose main use is that they allow capital the maximum flexibility). Thus, taking food sovereignty seriously will often bring the need to reorganize peasant farming (for example changing the cropping schemes). This applies even more when the exigencies of peasant markets are taken into account. This raises several questions:

- How to ensure that the peasant farms delivering to a particular peasant market supply sufficient produce to feed the population that depends on this market?
- How to ensure that there is enough diversity in the food products supplied?
- How to control quality and price levels?

When attention is shifted to regional and/or national level further questions emerge such as how can peasant markets mutually cooperate²⁷, and how can they ensure food sovereignty together? And, when we slot in the issue of peasant agriculture, another range of questions emerges:

- What for instance will happen to the millions of rural (migrant) workers^{28 29}?
- Can sufficient new peasant units of production be created, or existing ones be made more viable?
- What is the implication of the many differences in size and scale that currently exist within peasant agriculture? How are regional disparities to be dealt with?
- And how can fragilities at the micro-level be balanced with those emerging at the macro-level?

It needs to be honestly recognized that we (also, and maybe especially those of us engaged in the realm of critical agrarian studies) are still miles away from being able to provide adequate responses to these questions.³⁰ The good news, though, is that this

²⁷The Brazilian *Ecovida* network has developed a rich repertoire of responses here.

²⁸It is promising that the UN Declaration of Peasant Rights, strongly promoted by *La Via Campesina*, considers peasants and rural workers as equals.

²⁹In this respect, it is telling that labour migrants in China who previously transferred their land, have faced considerable problems when returning to their villages as a consequence of the Covid-19 outbreak. Only where the land remained cultivated by the family, could migrant workers re-engage smoothly in agricultural production. This shows that land and agriculture remain very critical and sensitive for livelihood security and employment.

³⁰Important ingredients for such responses have already been proposed by e.g. Agarwal 2014; Burnett and Murphy 2014; Henderson 2017; McKay, Nehring, and Walsh-Dilley 2014; Masson, Paulos, and Beaulieu Bastien 2017; Pahnke 2015; Schiavoni 2017 and Trauger 2014.

same range of questions (and many other, related questions) constitutes an exciting and highly relevant agenda for research and debate. Action-research that probes into new practices surely will offer many new insights. In this respect, Walden Bello is absolutely right when he affirms that:

a new paradigm is [never] born perfect. What gives it its momentum are the irreversible crises of the old paradigm and the conviction of a critical mass of people that it is the only way to surmount the problems of the old system and open up new possibilities for the fulfilment of values that people hold dear [...] The unanswered questions can only be answered and the ambiguities and contradictions can only be ironed out through practice, since practice has always been the mother of possibilities (Bello 2020, 13)

Finding ways to fill the several voids that exist between these different levels will critically require some degree of state involvement. Social movements (peasant movements included) cannot resolve these issues by themselves or materially impose new solutions at the interfaces between the different levels (between peasant agriculture, peasant markets, food sovereignty and agroecology). Yet, they are also needed as states alone cannot resolve this by themselves either. However, it is far from clear what states have to do and how they can do it. This is the second black hole. Experiences with agricultural policies other than the well-rehearsed centralized approaches that bring rigid and bureaucratically managed regulatory schemes and highly expansive forms of market intervention seem irrelevant and counter-productive in this new context. Most countries have very little experience in setting rules for local and regional self-regulation (and related schemes for redistribution) and assuring democratic mechanisms for setting the right balances at different levels of aggregation. Here again, critical research and debate is needed. What can social movements realistically and concretely demand from the state? It is more urgent than ever that social movements develop the capacity to demand the needed responses from the state.

This leads to a third black hole. How can, in practice, state and social movements actively co-operate and strengthen each other? What can they offer each other? And, what synergistic capacities do they have? What can historical experiences teach us here? (Patel and Goodman 2020). These are new, and far from easy, questions. But then, there is a world to win.

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