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Chapter 9

Transition towards a food commons regime: re-commoning food to crowd-feed the world

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There is nothing like a dream to create the future.

Utopia today, flesh and bone tomorrow. (V́ctor Hugo)

Introduction

Air, water and food, the three essentials our human body requires to function, vary in terms of their public–private status. Air is still considered a commons, although its commodification has already begun, with creative accounting for emissions trading schemes and quotas essentially operating as private entitlements to pollute (Bohm, Misoczky & Moog, 2012). Water is assumed as a public good, although widely being transferred to the private domain through absolute commodification of the good itself and the state transfer of consumer supply and waste-water treatment enterprises (Franco, Mehta & Veldwisch, 2013).² Food, however, is largely regarded as a pure private good, although wild foods could perfectly well be considered a commons but with genetic rights now an issue.

This has not always been so, and it remains less true than one might suppose, but it does represent the dominant reality in the world today. The value of food is no longer based on its many dimensions that bring us security and health, values that are related to our foundations in human society (food as culture)

and the way food is produced (food as a sustainable natural resource) as well as to human rights considerations based on its essential nature as fuel for the human body (so, ultimately, the right to life). Instead, these multiple dimensions are combined with and superseded by its tradable features, thus conflating value and price (understanding the former in terms of the latter).

It is certainly true that the industrialisation and commodification of food has brought humanity many important positive outcomes, such as accessibility (by lowering prices), availability (by sufficient production to feed us all) and economic efficiency (in cultivation techniques); but it has also yielded many negative externalities and unfulfilled promises, such as pervasive hunger and mounting obesity, environmental degradation, oligopolistic control of farming inputs, diversity loss, knowledge patenting and neglect of the non-economic values of food. Here, these issues are reviewed and a transition path to a new food system outlined. Essentially, what I propose is a radically different approach to food and a better balanced governance system.

An iniquitous, inefficient and unsustainable food system

The industrial technology-dominated food system achieved remarkable outputs during the second half of the twentieth century in the form of massively increased food production and food access for millions of urban and rural consumers. Global crop output was tripled, yields raised and food prices lowered with the move away from traditional habits and skills to more systematically organised production methods in tandem with the introduction and extension of a wide range of agrarian and technical developments (UNEP, 2009; Bindraban & Rabbinge, 2012). This represented a huge achievement, with massive

reductions in the numbers of poor and undernourished people in the world (FAO, IFAD & WFP, 2015). Manifestly, the increase in food production outpaced population growth, benefiting most people in the world and the poor in particular. However, this commodification of the industrial food system did not come for free, and many undesirable externalities are now evident.

The most relevant systemic fault lines in the current food system – even, that is, within its own mono-dimensional framework – may be identified as inequality, inefficiency and unsustainability within the planetary boundaries.³ Crucially, these cannot be reversed or corrected by simply applying lip service to a system – or food regime – based on sustainable intensification that focuses on technological challenges but obscures social and power imbalances (Godfray & Garnett, 2014).

Iniquitous: many eat poorly to enable others to eat badly and cheaply

In global terms, we have a troublesome relationship with food, since so many people in so many parts of the world have food-related health issues. In all but two countries in the world, for example, significant parts of the population suffer from three common forms of malnutrition: stunting, anaemia and obesity (IFPRI, 2014). In fact, an estimated 2.3 billion people globally, fully one-third of the world's population, are either overweight or undernourished (GAIN, 2013). Even as hunger continues to be the largest single contributor to maternal and child mortality worldwide, with more than three million children dying every year from hunger-related causes (Black et al., 2013), obesity causes some 2.8 million deaths annually (WHO, 2012), with well over a

billion people expected to be classified as obese by 2030 (Kelly et al., 2008). Despite years of international anti-hunger efforts and rising levels of gross national income and per capita food availability in a world that already produces enough food to adequately feed all, the number of hungry people has only been declining at a very slow pace since 2000 (FAO, IFAD & WFP, 2015).⁴

Among the painfully ironic paradoxes of the globalised industrial food system are the facts that half of those who grow 70% of the world's food are hungry (ETC Group, 2013), yet food kills the wealthy. Moreover, an ever greater share of the food supply is being diverted to livestock feeding and biofuel production, and, most shockingly of all perhaps, a third of the total global food production ends up in the garbage every year, enough to feed 600 million hungry people (FAO, 2011). Agriculture is also highly demanding of water – using 96% of world non-marine supply (de Marsily, 2007) – but it makes poor use of it, while the industrial system diminishes the nutritious properties of many foods, through cold-room storage, (over-)peeling and boiling, and transformation processes (Sablani, Opara & Al-Balushi, 2006). Consequently, the overemphasis on the production of empty and cheap calories that renders obesity a growing global pandemic is set alongside highly energy inefficient food production, as we need 10 kcal to produce 1 kcal of food (Pimental & Pimental, 2008). This is not to mention profound and growing issues related to a range of ecological issues, including soil degradation and biodiversity loss.

Inefficient: oil-based food systems are nothing without state subsidies

Agronomically speaking, the industrial food system is not performing much better than did the traditional, pre-industrial

one, insofar as productivity gains have been uneven across crops and regions (Evenson & Gollin, 2003) and global increases in output have been confined to a limited range of cereal crops (rice, maize and wheat), with smaller increases in crops such as potato and soybean (Godfray et al., 2010). Increased cereal production has supported the increase in chicken and pig production, but also led to less diverse, overly meat-based diets, with a concomitant increase in the ecological footprint. It also appears that yield improvements are already reaching a plateau in the most productive areas of the world (Ray et al., 2013). Thus, many scientists and agri-food corporations are calling for a 'Greener Revolution' or 'Green Revolution 2.0' (Pingali, 2012), led by genetic engineering and urban-based production, including alternative (e.g. hydroponics) production systems.

In fact, a closer examination reveals that the industrial food system is not more efficient in material or financial terms than the more sustainable food systems (traditional or modern organic, permaculture, etc.), as it is heavily subsidised and greatly favoured by tax exemptions (e.g. through national fertiliser subsidies, the EU Common Agricultural Policy and the US Farm Bill).⁵ The great bulk of national agricultural subsidies in OECD countries are mostly geared towards supporting the intensive use of chemical inputs and energy and helping corporations lower the prices of processed foods. Yet, and contrary to popular wisdom, alternative, organic systems are more productive, both agronomically and economically; they are more energy efficient, have a lower year-to-year variability (Smolik, Dobbs & Rickerl, 1995) and depend less on government payments (Diebel, Williams & Llewelyn, 1995). Strikingly, small and medium-sized family farms tend to have higher agricultural crop yields per

hectare than larger farms, mainly because they manage resources better and use labour more intensively (FAO, 2014).

We need to go beyond price in the market, where the major driver for agri-businesses in the mono-dimensional approach to food-as-commodity is merely to maximise profit. We need to value the multiple dimensions of food for human beings. This is highlighted by the issue of inequality and social justice, with the 1.2 billion poorest people presently accounting for just 1% of world consumption, while the billion richest consume 72% (UN, 2013).

Unsustainable: eating our planet and beyond

Since the Industrial Revolution in the latter part of the eighteenth century, humans have been altering the Earth on an unprecedented scale and at an increasing rate, radically transforming the landscape, using (up) natural resources and generating waste (Hoekstra & Wiedmann, 2014). Our human society is living beyond its means, and the current environmental effects of human activity are just not sustainable. For example, the appropriation of natural resources is currently exceeding available biocapacity by 50% (Borucke et al., 2013). Many respected researchers are warning of an apocalypse triggered by climate disruption and resource scarcity within this century (Motesharrei, Rivas & Kalnay, 2014).

On this road to perdition, food production (largely, the industrial food system) has become a major driving force pushing the environment beyond its planetary boundaries. Agriculture, as the largest user of land (Ramankutty et al., 2008), is now the dominant force behind many environmental threats, including biodiversity loss and degradation of land and freshwater, while

it is responsible for 30–35% of global greenhouse gas emissions (Foley et al., 2011). Of the two – global water and total ecological – footprints analysed in the 2014 ‘Living Planet’ report, food systems account for 92% (WWF, 2014) and a third, respectively.⁸ Human society is quickly approaching two planetary thresholds associated with unsustainable food systems: land conversion to croplands and freshwater use (Rockstrom et al., 2009). This situation will only worsen as growing water and food needs due to population growth, climate change, consumption shift towards meat-based diets and biofuel development exacerbate the already critical challenges to planet boundaries. If we extrapolate current food consumption and production trends, humanity will need three Earths by 2050 to meet demand (Clay, 2011).

The commodification of food

The conversion of goods and activities into commodities has been a dominant force transforming all societies since at least the mid-nineteenth century (Polanyi, 1944; Sraffa, 1960), a process that has led to today’s dominant industrial system that fully controls international food trade and is increasingly exerting a monopoly over agricultural inputs (seeds, agro-chemicals, machinery), while both feeding and failing the world’s population, and in an unsustainable manner, as indicated (above). Essentially, food has evolved into a private, mono-dimensional commodity in a global market of mass consumption. The mechanisms of enclosure, or restriction and privatisation of common resources through legislation, excessive pricing and patents, have obviously played a major role in limiting access to food as a commons, while the social construct of food as a commodity denies its non-economic attributes in favour of its tradable

features, namely durability, external beauty and the standardisation of naturally diverse food products, leading to a neglect of nutrition-related properties of food alongside the emphasis on cheap calories.⁹ These cheap calories not only come at great cost to the environment (the sustainability issue) and human health (the obesity issue) but have also lowered prices for producers and promoted cheap rural labour, forcing small-scale farmers to flee to urban areas (Roberts, 2013). Increasingly, the result is a mass transformation of the rurality into paradoxically barren, depopulated zones of production.

Under capitalism, the value in use (a biological necessity) is highly dissociated from its value in exchange (price in the market), giving primacy to the latter over the former (McMichael, 2009). Food as a pure commodity can be speculated in by investors, modified genetically and patented by corporations, or diverted from human consumption just to maximise profit, the latest twist on this being the substitutionism of food commodities (Araghi, 2003), whereby tropical products (sugar cane, palm oil, etc.) are replaced by agro-industrial (and pharmaceutical) by-products (for high fructose corn syrup, margarine, etc.). Ultimately, industrial food systems alienate food consumers from food producers in socially disembedded food relations, and in so doing, it is argued, they damage societal well-being (disconnecting us from nature and deeply undermining a holistic sense of life). Indeed, the development of food as a pure commodity radically opposes the other dimensions, rather important for our survival, self-identity and community life: as a basic human need to maintain vital functions (Maslow, 1943), as a pillar of every national culture (Montanori, 2006), as a fundamental human right that should be guaranteed to every citizen (UN,

1966) and as a part of a wider ecological context involving sustainable production. This reduction of the food dimensions to one of a commodity explains the roots of the failure of the global food system (Zerbe, 2009). Moreover, market rules not only put prices to goods, but, in doing so, markets corrupt their original nature (Sandel, 2012). The commodification of food crowds out non-market values and the idea of food as something worth caring about.¹⁰

It is becoming obvious to many that the reliance on massively distorted (imperfect) market forces, industry self-regulation and public–private partnerships to improve public health and nutrition does not result in substantial evidence to support any major claim for their effectiveness in preventing hunger and obesity, let alone in reducing environmental threats (Fuchs, Kalfagianni & Havinga, 2011; Hawkes & Buse, 2011). On the contrary, transnational corporations are major drivers of the latter two of these – in the case of obesity epidemics, for example, by maximising profit from increased consumption of ultra-processed food and drink (Monteiro et al., 2011). The conventional industrialised food system, dominated by mega-corporations, is basically operating to accumulate and under-price calorie-based food resources and maximise the profit of food enterprises instead of maximising the nutrition and health benefits of food to all (Rocha, 2007; Clapp & Fuchs, 2009).

The increase in consumption of unhealthy food and drinks is occurring fastest now in poorer (‘developing’) countries, where the food systems are highly penetrated by foreign multinationals (Stuckler et al., 2012) and the state institutions are usually not capable of controlling corporate leverage; but even in advanced countries, the only mechanisms that have clearly been shown to

prevent the harm caused by unhealthy commodities are public regulation and market intervention (Moodie et al., 2013). This means more state, not less. Governed by self-interest, markets will not provide an adequate quantity of public goods, such as health, nutrition and hunger eradication, which have enormous benefits to human beings but are non-monetised, as the positive externalities cannot be captured by private actors.

With millions of people needlessly dying prematurely each year from hunger and obesity in a world of ample food supplies, nobody can dispute the need for change. There is a clear and urgent demand for unconventional and radical perspectives to be brought into the debate to look for possible solutions and a transition towards a fairer, healthier and sustainable food system. In addressing this need, the power of food to generate a substantial critique of the neoliberal corporate and industrialised production and service system and to harness multiple and different alternative collective actions should not be underestimated (McMichael, 2000). Food is a powerful weapon for social transformation.

The historical evolution of food governance: from commons to commodity

Historically, human societies have developed different institutional arrangements at local and regional levels to produce, manage and consume food, and the major features of these have often been an unstable balance between private provision, state guarantees and collective actions based on the commons of land, water and labour force.¹¹ Food has certainly not always been regarded as a pure commodity devoid of other important dimensions. For millennia, indeed, food was generally cultivated in common and regarded as a sacred item in a myth-

ological context;¹² many societies have considered, and still consider, food as a commons, as well as the land and water and its forests and fisheries; and the consideration different civilisations have assigned to food-producing commons is rather diverse and still evolving.

Historical developments and present evidence

While anthropological studies have been reporting on tribal societies with essentially communal hunter-gatherer and gardening arrangements for food since the nineteenth century, historical records indicate commons-based agrarian food-production systems ranging from the early Babylonian empire (Renger, 1995) and ancient India (Gopal, 1961) to medieval Europe (Linebaugh, 2008) and early modern Japan (Brown, 2011). This historical diversity is reflected in the current world's wealth of proprietary schemes for natural resources. Even now, the private arrangements that characterise industrial agriculture are not universally prevalent in large areas of the world, where subsistence, traditional and agro-ecological types of agriculture are still the norm. Actually, in simple population numbers, small, traditional farmers with mixed proprietary arrangements for natural resources are greatly in the majority, with, for example, just 27 million farmers working with tractors as compared to 250 million using animal traction and over a billion working just with their hands and hand-tools.

Across the world, commons-based land and food systems are often found in relatively 'wild', depopulated territories, such as in parts of the Asian interior (e.g. in Mongolia), the hills of Borneo and the Amazon rainforest. In sub-Saharan Africa, about 500 million people still rely on food from communal lands

(Kugelman & Levenstein, 2013), and tribes regard themselves as custodians of the land for future generations rather than its owners, and the land-plots are usually inalienable and legally recognised (Ike, 1984). There are well-documented examples of functioning food-producing commons in Fiji (Kingi & Kompas, 2005) and Mexico's *Ejidors* (Jones & Ward, 1998), while in countries such as Taiwan, India, Nepal and Jamaica, land ownership by ethnic minorities is also granted as common land.

At the other end of the world developmental scale, in the US there are lobster fisheries (Wilson, Yan & Wilson, 2007), in the Scandinavian countries anyone can forage wild mushrooms and berries under the consuetudinary Everyman's Rights (La Mela, 2014), and the Spanish irrigated *huertas* (vegetable gardens) are a well-known and robust institution (Ostrom, 1990), while there are thousands of surviving community-owned forests and pasturelands across Europe where livestock freely range, including the *Baldios* in Portugal, crofts in Scotland, *Obste* in Romania and *Montes Vecinales en Mano Comun* in Spain. In fact, and despite centuries of encroachments, misappropriations and legal privatisations, millions of hectares of common land have survived in Europe.¹³

Historical and modern studies have demonstrated that the traditional food-producing common-pool resources systems were, and still are, efficient in terms of resource management (Ostrom, 1990; De Moor, Shaw-Taylor & Warde, 2002).¹⁴ Common lands have been pivotal for small-farming agriculture everywhere in Europe throughout history, as sources of organic manure, livestock feedstock and pastures, cereals (mostly wheat and rye in temporary fields), medicinal plants and wood. Peasants pooled their individual holdings into open fields that were

jointly cultivated, and common pastures were used to graze their animals. In Fiji, the proprietary regime in commons, organised under traditional practices, seems to improve farm productivity and efficiency as compared to modern farming enterprises (Kingi & Kompas, 2005). Many Latin American countries, such as Brazil, Honduras, Venezuela and Nicaragua, have formally recognised the communal rights of indigenous communities to their traditional territories (Robson & Lichtenstein, 2013), with common lands preserving habitats better than privately owned ones (Ortega-Huerta & Kral, 2007). Likewise, in Asia, over 10,000 villages in Vietnam are managing more than two million hectares of community forests with good results (Marschke et al., 2012), while common-pool resources, covering 25.6% of India's territory, are estimated to contribute 20–40% of household annual incomes nationwide (Chopra & Gulati, 2001). The agricultural and related utility of commons to human societies has enabled them to survive up to the present day, despite the waves of enclosure.

The enclosure of the commons

Enclosure (originally 'inclosure') is the act of transferring resources from the commons to purely private ownership (Linebaugh, 2008) or the decrease of accessibility of a particular resource due to privatisation, transferring common properties 'from the many to the few' (Benkler, 2006). The commons-based food-producing systems in Europe started to be dismantled soon after the end of the medieval age, when royal and feudal landowners began enclosing common lands. Through legal and political manoeuvres, wealthy landowners marked and hedged off sections of the commons for their own profit, impoverishing many villagers and ultimately destroying their communitarian

way of life in what Polanyi (1944) dubbed 'a revolution of the rich against the poor'.

The latter part of the eighteenth and early nineteenth centuries saw a second wave of enclosures. During this period, of course, enclosure was also globalised, as a feature of the colonising activities of the maritime empires of Western Europe claiming native lands in the Americas, Africa, southern Asia and Australasia. The processes undoing the communal regime continued through the late nineteenth and the twentieth centuries, relentlessly pursued by the state and wealthy private owners realising the value of land for the production of food and other goods (cotton, sugar, rubber, etc.). Internationally, it was first promoted by imperial trading companies supplying to mother countries and then continued in the post-colonial context; in North America, it took the form of the barbed-wire fencing of open range, while in the Soviet Union, land was 'consolidated' in the collectivisation drive of the 1930s; generally, it was propelled by the need for rural areas to supply the growing urban populations and later justified by the idea that communal property was an obstacle to economic growth and did not guarantee conservation of resources (Serrano-Alvarez, 2014). Finally, over the last thirty years, common lands have suffered a third, global wave of commodification and enclosure, 'land-grabbing' spurred by the dominant neoliberal doctrine and competition for non-renewable natural resources and supported now by the evolutionary theory of land rights (Barnes & Child, 2012).¹⁵ Community-owned lands are presently under huge pressure from voracious states and profit-seeking investment funds, backed initially by the IMF and World Bank in the framing of structural adjustment programmes and lately by drivers such as growing populations, shifting (more meat-

based) diets, water and soil constraints, climate vagrancies and long-term investments in natural resources with increasing demand (Cotula, 2012).

The third wave of privatisation of food-producing commons systems was theoretically and ideologically grounded on Demsetz's (1967) narrative that considers rising populations to drive property values and communal resources upward, leading to increased demand and disputes over natural resources, which can only be solved through government-led property formalisation. Using this theory, Alchian and Demsetz (1973) stated that the increase in the value of a communal resource will inevitably lead to the enclosure of the commons; and Hardin (1968) wrote his famous tragedy. However, with a varied set of successful case studies of common-pool resources, Ostrom (1990) was able to demonstrate the incorrect assumptions of this approach, both theoretical and practical.

The enclosure and commodification of goods owned by no one or by all is expanded and deepened by capitalism's insatiable appetite through the modern mechanisms of copyrights, permits, restrictive legislation and taxes on specific activities (Lucchi, 2013). For example, plant genetic resources in the form of seeds used to be public goods until scientific and technological progress enabled us to synthesise DNA, modify living organisms and reconstruct genes in the laboratory; now, private enterprises are granted copyright licences for the genes and seeds they develop. Enclosure of the commons can be driven by protection rather than profit-seeking, such as the quotas that are set to address the problem of declining open-sea fish stocks due to overexploitation (Young, 2003) or the licences and seasonal permits that regulate fishing from the seashore and

collecting mushrooms in the forest in many areas and certain seasons. Such regulation can also lead to the development of new markets for the services common-pool resources provide, as in the case of polluting air emissions.

Re-commoning food and the food commons regime: theoretical underpinnings

In this scenario, a re-commoning of food would certainly open up the prospect of a transition towards a new food regime in which the several food dimensions are properly valued and primacy rests in its absolute need for human beings. But in order to move in this direction, the very foundations of how economics and social sciences perceive foods and foodstuff have to be reassessed; first, food excludability and rivalry has to be contested. Although foods, as single items or classes, may be rivals, this need not be the case for the category of food as a whole in a condition of plenty, where there is, in fact, enough for all. Food, as a renewable resource, can be unlimited, provided its production matches global consumption. And food certainly ought not to be an excludable good to anyone. The commodification of natural resources essential for human beings can be reversed. Moving from possibility to prescription, a re-commoning of food is argued for here as an essential paradigm shift. It leads us towards a new regime, which could be called the food commons.

The evolution of different food regimes

A food regime is a rule-governed structure of food production and consumption on a world scale, with food regime theory – initially formulated by Friedmann (1987) and further expanded by Friedmann and McMichael (1989) and McMichael (2009)

– standing as a historical and sociological approach aimed at accounting for recent past and present global food systems. This theoretical framework critically analyses agricultural modernisation, underlining the pivotal role of food in the global political economy and describing the main features of stable food regimes and their fault lines, crises and transitions. The regimes approach also considers shifting balances of power among states and private corporations and NGOs, along with the rules and institutions that govern the food system and permit capital accumulation. This type of analysis depicts food as a source of power and domination, a power that lies in its material and symbolic functions linking nature, human survival, health, culture and livelihood. Among the variables that define food regimes, one may mention the role of food in capital accumulation, where and how food is produced and by whom, major patterns of food flows and control of food production.

Implicit in the historical narrative of de-commoning, three major food regimes have been identified, namely the UK-centred colonial-diasporic regime (1870–1930s), the US-centred mercantile-industrial regime (1950s–70s) and the global corporate regime (1980s–2000s), leaving definition of the situation nowadays open, as either the final stage of the corporate regime or a troublesome transition towards something new. The UK-centred colonial-diasporic regime, defined by food imports from settler and tropical colonies to provision emerging industrialisation in the UK and Europe, developed mono-cultures in tropical colonies and national agricultural systems in settler colonies. The US-centred mercantile-industrial regime, during the post-war reconstruction and Cold War, had export subsidies and US food aid as the inter-

national mechanism to deter expansion of communism and extend industrialisation in the Global South, when agriculture became more specialised, industrialised (with longer food chains) and commodified (detached from place of origin and non-commercial values), the term 'agribusiness' being coined at Harvard University in the mid-1950s. This regime was also characterised by the technology-driven Green Revolution, land reform schemes to fully privatise community-owned land-plots together with the dismantling of Global South diverse agricultures for their transformation into mono-crop agro-exporting systems, the development of processed durable foods and the anathematising of food self-sufficiency.

Now the global corporate-environmental (neoliberal) regime defines a set of rules institutionalising corporate power in the world food system (Pechlaner & Otero, 2010), deepening the commodification of food by radically undermining its non-monetary dimensions (food as a human need, a human right and a cultural determinant) and developing its tradable features through the transnational financialisation of food; this is expressed in the transformation of food (for fuel and animal feeds) and its substitutionism (food providing foodstuffs) facilitated by international capital (e.g. supply/demand controls through futures markets). Other pertinent features of this regime include the supermarket revolution and the vertical expansion of retail corporations into production, corporate oligopolies that control the major share of food-producing inputs (seeds, agro-chemicals, tractors, etc.) and the privatisation of agricultural research and enclosure of food-related knowledge commons by intellectual proprietary rights (patents and lawsuits) – the latter a modernist narrative that sees small-scale farmers and peasants

as residuals in furthering commodification, homogenising and decontextualising of the 'food from nowhere' and extending yet greater WTO-style agricultural liberalisation.

This regime, however, has been attenuated by strong, citizen-led, environmental and justice concerns that have advocated for state-regulated governance of corporative activities within the domains of animal welfare, fair trade, organic and healthy products and their land-grabbing and conversion of forestry into arable land and while also partially restraining the absolute commodification of natural resources (e.g. endangered species used as luxury goods and air as carbon trade schemes).¹⁶ 'Sustainable Intensification' and 'Green Growth' are the new narratives developed by the duopolistic neoliberal states and corporations to respond to those concerns (OECD, 2013).

From food sovereignty to a food commons regime
Transitions between regimes stem from internal strains, claims by marginalised groups, power imbalances, outrageous capital accumulation and contradictory relations resulting in crisis and transition towards a successor regime (Le Heron & Lewis, 2009). Currently, the corporate food regime (industrial food system) is coming under increasing scrutiny by aware citizens, combatant grassroots organisations, concerned governments and small-scale stakeholders in the food chain as the major fault lines of inequality, inefficiency and unsustainability become ever more evident. Within this apparently and at least potentially transitional framework, characterised by experimentation, tension and contestation (Burch & Lawrence, 2009), Wittman (2011) has recently posited food sovereignty as an alternative paradigm, a driver of change that is challenging the corporate food regime

with the aim of replacing it with a new one, provisionally named the food sovereignty regime.

Although one may be sympathetic to the sociological critique of the corporate regime, however, one cannot ignore the fact that the highly politicised, counter-hegemonic food sovereignty paradigm has only managed to draw a small number of countries to its side (Ecuador, Bolivia, Nicaragua and Mali). Originating from rural organisations and food producers (peasants, small-scale farmers, indigenous peoples, fishermen), this movement has not yet fine-tuned legitimate concerns about healthy and local food, a return to nature and less polluting forms of food consumption by urban citizens and food consumers. Indeed, up to 2013, the leaders of the food sovereignty movement were rather oblivious to the range of recent academic and urban developments that were gaining momentum and beginning to shape urban and national policies in several countries (below). This is gradually changing now.

The worldwide Via Campesina movement, from which the idea of food sovereignty originated, is now becoming appreciative of the strategic importance of urban-based alternative initiatives.¹⁷ This is important, since the predominantly rural social movement of food producers from the Global South and the predominantly urban alternative food networks of food consumers and producers from the North do need to combine if some sort of grand coalition of the counter-hegemonic movement is to coalesce as the key development in the transition towards what could be more appropriately termed a 'food commons' regime.

The food commons regime, as the name implies, would fundamentally rest on the idea of food as a commons, which means revalorising the different food dimensions that are relevant to

human beings (value in use) – food as a natural resource, human right and cultural determinant – and thus, of course, reducing the tradable dimension (value in exchange) that has rendered it a mere commodity. This regime would inform an essentially democratic food system based on sustainable agricultural practices (agro-ecology) and open-source knowledge (creative commons licences) through the assumption of relevant knowledge (recipes, agrarian practices, public research, etc.), material items (seeds, fish stocks, etc.) and abstract entities (transboundary food safety regulations, public nutrition, etc.) as a global commons.

The food commons regime will entail a return move from corporate–state control to a collective, polycentric and reflexive governance, a shift of power from a state–private sector duopoly in food production, transport and distribution to a tricentric governance system, where the third pillar would be the self-regulated, civic, collective actions for food that are emerging all over the world. Presently developing a narrative of valuing food as an essential, natural good, produced and consumed with others and thus a bonding tie in human cultures, these alternative food initiatives will be the organisational drivers of change. In short, a food commons regime will be governed in a polycentric manner by food citizens (Gomez-Benito & Lozano, 2014) who develop food democracies (De Schutter, 2014) that value the different dimensions of food (Vivero-Pol, 2013).

Crowdsourcing the transition to food as a commons

At present, the globalised world appears to be at the crossroads of two food transition streams: the well-advanced nutritional transition from vegetable- to meat-dominated diets (Popkin,

2003) and the incipient food transition from oil-dependent industrial agriculture to more environmentally friendly and less resource-intense food systems. This nascent stream can evolve towards re-localised, organic food systems, spurred by non-monetised food dimensions and alternative food movements (Heinberg & Bomford, 2009) or else to a deepening of the globalised, profit-driven path of the industrial food system supported by science and technology developments under the 'sustainable intensification' or 'green growth' paradigms (UN, 2012) (e.g. renewable energy-based hydroponics in city towers owned by retail corporations). The dominant path that emerges from these transitions will determine the new food paradigm.

The proposal here is for a transition towards a food commons regime based on an adequate valuation of all the dimensions of food. This transition path approaches food as a commons, contrary to the history of previous transitions, in which food was first privatised and then commodified. Although some authors have already suggested this (Ausin, 2010), none of the major analyses produced in the last decades on the fault lines of the global food system and the very existence of hunger has ever questioned the nature of food as a private good (World Bank, 2008; UK Government, 2011).¹⁸ Following the mainstream rationality, although the most pressing issue is the lack of food access, this only becomes such an intractable problem due to the assumed private nature of food and its absolute excludability.

While the present proposal may seem to be going against the tide of history, that might be regarded rather as a strength than a weakness; as Einstein noted, problems cannot be solved with the same mind-set that created them. And in fact, the consideration of food as a commons is already in play and

increasing, with (a) food-related elements being considered as global or national commons (or global public goods, as they are usually termed) in the context of civil struggles for re-commoning, and (b) an evolving governance of the food system being constructed from bottom-up grassroots urban and rural initiatives.¹⁹ These do, in fact, all point in the same direction, towards a very possible future.

Material and non-material food-related elements
already considered as commons

There is a need to reclaim a discourse and a rationale of the commons to be applied to food at global, regional/national and local levels. The good news is that policymakers and academics are already moving from the stringent economic definition of public/private goods to a more fluid idea of global public goods or commons. Regarding terminology here, the former, 'public goods', is more usually assumed in the hegemonic discourse of major institutions, while the latter 'commons' tends more to be taken up by alternative activist advocates, with both variously appended by 'global' or 'national'.

The important thing is that these public goods/commons, however named, are available worldwide, essential for all human beings, regarded as things that need not and should not be treated as excludable and rival, and whose production and distribution cannot be governed exclusively by one state. Such goods need to be governed in a common manner as to be beneficial for all (Kaul & Mendoza, 2003), even if not everybody is contributing to or paying for their provision. In addition to the material commons and related practices already considered, the following represents a (non-exhaustive) list and commentary

of aspects of food that are currently considered as global public goods or global commons.

Edible plants and animals produced by nature

Since nature's unenclosed territories (e.g. Antarctica, the deep ocean) are largely assumed as global commons, the natural resources in these are commons as well (including, therefore, fish stocks and marine mammals) (Christy & Scott, 1965; Bene, Phillips & Allison, 2011). Although there are complicating factors depending on national and international proprietary rights schemes, the basic assumption remains in place for fish stocks in coastal areas, as well as for wild foods produced in urban and rural areas.

Genetic resources for food and agriculture

Agro-biodiversity represents a continuum of wild-to-domesticated diversity that is crucial to people's livelihood and well-being and is therefore considered as a global commons (Halewood, Lopez-Noriega & Louafi, 2013). Some authors and many activists and producers demand genetic resources be patent-free to enable innovation, free exchange and peer-to-peer breeding (Kloppenborg, 2010). Seed exchange schemes – to some extent a phenomenon growing in response to private development programmes and enclosure attempts – are considered networked-knowledge goods with non-exclusive access and use conditions, produced and consumed by communities.²⁰

Traditional agricultural knowledge

A commons-based patent-free knowledge contributes to global food security by upscaling and networking grassroots

innovations for sustainable and low-cost food production and distribution (Brush, 2005). There is widespread evidence of a growing appreciation of the value of this indigenous traditional knowledge to adapt to climate change (Altieri & Nicholls, 2013) and nurture alternative visions of development (Pretty, Toulmin & Williams, 2011)

Modern, science-based agricultural knowledge produced by public institutions

Universities, national agricultural research institutes and the Consultative Group for International Agricultural Research (CGIAR), UN and EU centres all produce public science, widely considered as a global commons (Gardner & Lesser, 2003). Although there is pressure on the public production of information by corporate interests, research into something as basic as food is not popularly challenged as a common good. Research funds should be directed towards sustainable practices and agro-ecology knowledge developed by those universities and research centres instead of further subsidising industrial agriculture.

Cuisine, recipes and national gastronomy

Food, cooking and eating habits are inherently part of our culture; gastronomy is regarded as a creative accomplishment of humankind, like music or architecture. Recipes are an excellent example of commons in action, and creativity and innovation are still dominant in this copyright-free domain of human activity (Barrere, Bonnard & Chossat, 2012). The culinary and convivial commons dimension of food has received little systematic attention from the food sovereignty movements (Edelman, 2014),

although it is being properly valued by alternative food networks (Sumner, Mair & Nelson, 2010).

Food safety

Epidemic disease knowledge and control mechanisms are widely considered as global public goods, as zoonotic pandemics are public bads with no borders (Richards, Nganje & Acharya, 2009). Issues in this domain are already governed through a tricentric system of private sector self-regulating efforts, governmental legal frameworks and international institutional innovations, such as the *Codex Alimentarius*.

Nutrition, including hunger and obesity imbalances

There is a growing consensus that health and good nutrition can be considered as global public goods with global food security recently joining that debate in international forums (Page, 2013). Although this political approach is still at an early stage of development, far from established as a general understanding and certainly without a negotiated global statement as yet, it is an idea that is taking hold, as witness FAO Director General Graziano da Silva in the closing remarks of the International Conference of Nutrition, November 2014.²¹

Food price stability

Extreme food price fluctuations in global and national markets, such as the world experienced in 2008 and 2011, are a public bad that benefits none but a few traders and brokers. The basic fact that those acting inside the global food market have no incentive to supply the good or avoid the bad is increasingly observed, and the need for concerted, state-based action to provide such

a global public good as food price stability is gaining traction (Timmer, 2011).

It goes without saying that all governments have a deep concern about food issues, which is why subsidised food production and consumption policies are the norm all over the world (see above, on subsidies to industrial agriculture) and food-related civil unrest is as much a subject of political concern nowadays as it ever has been (Holt-Gimenez & Patel, 2009). For all governments, food is a very particular good as it is an essential need and thus highly regulated and heavily subsidised. Indefensibly, the political discourse of the OECD and WTO calls for a dismantling of national trade barriers and subsidised agriculture in developing countries while developed nations maintain massively subsidised food systems at home. Yet this hypocritical approach merely reflects the incoherence between the dominant narrative of the neoliberal model (food as a pure commodity) and the *realpolitik* most governments pursue (food as a de facto public good). Since food is strategically governed, massively supported and strongly protected by public institutions, provided by collective actions in thousands of traditional and post-industrial collective arrangements (as listed above, with others like farmers' markets, various types of food cooperatives, producer–consumer associations, etc.) and yet largely distributed by market rules, why should we not consider it a commons or public good, as we do with education and health? Shifting the dominant discourse on food and food system governance from the private sphere to the commons arena would open up a whole new world of economic, political and societal innovations

The tricentric governance of the food system as the transition path

Local transitions towards the organisation of local, sustainable food production and consumption are taking place today across the world.²² Directed on principles along the lines of Elinor Ostrom's (1990, 2009) polycentric governance, food is being produced, consumed and distributed by agreements and initiatives formed by state institutions, private producers and companies, together with self-organised groups under self-negotiated rules that tend to have a commoning function by enabling access and promoting food in all its dimensions through a multiplicity of open structures and peer-to-peer practices aimed at sharing and co-producing food-related knowledge and items.²³ The combined failure of state fundamentalism (in 1989) and so-called 'free market' ideology (in 2008), coupled with the emergence of these practices of the commons, has put this tricentric mode of governance back on the agenda. The further development of tricentric governance will comprise (combinations of) civic collective actions for food, the state and private enterprise.

(a) *Civic collective actions for food* (alternative food networks, AFNs) are generally **undertaken at local level to begin with and aim to** preserve and regenerate the commons that are important for the community (food as a common good). There have been two streams of civic collective actions for food running in parallel: the challenging innovations taking place in rural areas, led by small-scale, close-to-nature food producers, increasingly brought together under the food sovereignty umbrella, and the AFNs exploding in urban and peri-urban areas, led on the one

hand by concerned food consumers who want to reduce their food footprint, produce (some of) their own food, improve the quality of their diets and free themselves from corporate-retail control, and on the other by the urban poor and migrants in the developing world motivated by a combination of economic necessity and a desire to maintain their old food sovereignty and links to land. Over the last twenty years, these transition paths have been growing in parallel but disconnected ways, divided by geographical and social boundaries. But the maturity of their technical and political proposals and reconstruction of *rurban* connections²⁴ have paved the way for a convergence of interests, goals and struggles. Large-scale societal change requires broad, cross-sector coordination. It is to be expected that the food sovereignty movement and the AFNs will continue (and need) to grow together, beyond individual organisations, to knit a new (more finely meshed and wider) food web capable of confronting the industrial food system for the common good.

(b) *The state* has as its main goal the maximisation of the well-being of its citizens and will need to provide an enabling framework for the commons (food as a public good). The transition towards a food commons regime will need a different kind of state, with different duties and skills to steer that transition. The desirable functions are shaped by partnering and innovation rather than command-and-control via policies, subsidies, regulations and the use of force. This enabling state would be in line with Karl Polanyi's (1944) theory of its role as shaper and creator of markets and facilitator for civic collective actions to flourish. This state has been called partner state (Kostakis & Bauwens, 2014) and entrepreneurial state (Mazzucato, 2013).

The partner state has public authorities as playing a sustaining role (enabling and empowering) in the direct creation by civil society of common value for the common good. Unlike the Leviathan paradigm of top-down enforcement, this type of state sustains and promotes commons-based peer-to-peer production. Amongst the duties of the partner state, Silke Helfrich mentioned the prevention of enclosures, triggering of the production/construction of new commons, co-management of complex resource systems that are not limited to local boundaries or specific communities, oversight of rules and charts, care for the commons (as mediator or judge) and initiator or provider of incentives and enabling legal frameworks for commoners governing their commons.²⁵ The entrepreneurial state, meanwhile, fosters and funds social and technical innovations that benefit humanity as public ideas that shape markets (such as, in recent years, the Internet, Wi-Fi, GPS), funding the scaling up of sustainable consumption (like the Big Lottery Fund supporting innovative community food enterprises that are driving a sustainable food transition in the UK)²⁶ and developing open material and non-material resources (knowledge) for the common good of human societies. Public authorities will need to play a leading role in support of existing commons and the creation of new commons for their societal value.

(c) *The private sector* presents a wide array of entrepreneurial institutions, encompassing family farming with just a few employees (FAO, 2014), for-profit social enterprises engaged in commercial activities for the common good with limited dividend distribution (Defourny & Nyssens, 2006) and transnational, 'too-big-to-fail' corporations that exert near-monopolistic

hegemony on large segments of the global food supply chain (van der Ploeg, 2010). The latter are owned by unknown (or difficult to track) shareholders whose main goal is primarily geared to maximise their (short-term) dividends rather than equitably produce and distribute sufficient, healthy and culturally appropriate food to people everywhere.²⁷ During the second half of the twentieth century, the transnational food corporations won market share and dominance in the food chain, although space, customers and influence is being regained, spurred by consumer attitudes towards corporate foods and the sufficiently competitive (including attractive) entrepreneurial features of family farming (which still feeds 70% of the world's population) and other, more socially embedded forms of production, such as social enterprises and cooperatives.²⁸

The challenge for the private sector, therefore, is to adjust direction, to be driven by a different ethos while making profit – keeping, indeed, an entrepreneurial spirit, but also focusing much more on social aims and satisfying needs. Or, put the other way around, the private sector role within this tricentric governance will operate primarily to satisfy the food needs unmet by collective actions and state guarantees, and the market will be seen as a means towards an end (well-being, happiness, social good) with a primacy of labour and natural resources over capital. Thus, this food commons transition does not rule out markets as one of several mechanisms for food distribution, but it does reject market hegemony over our food supplies since other sources are available, a rejection that will follow from a popular programme for provisioning of and through the food commons (popular in the sense that it must be democratically based on a generalised public perception of its goodness and efficacy).

According to the typology developed by Harvey et al. (2001), food can be provided by four types of agencies, based on different principles: market (based on demand–supply market rules), state (based on citizen rights or entitlements), communal (based on reciprocal obligations and norms) and domestic (do-it-yourself or household provision based on family obligations). By encouraging (politically and financially) the development of non-market modes of food provisioning (state and/or communal) and (similarly, in parallel) limiting the influence of market provisioning, we can rebuild a more balanced tricentric food system (Boulanger, 2010). In plain words, governments will support private initiatives whose driving force is *not* shareholder value maximisation (e.g. family farming, food cooperatives, producer–consumer associations), while citizen/consumers will exert their consumer sovereignty by prioritising food with a meaning (local, organic, fair, healthy) beyond the purely financial (not just the cheapest). The private sector will also, or primarily (depending on the details of any particular tricentric mix), trade undersupplied, specialised and gourmet foodstuffs (food as a private good) and it may also rent commonly owned natural resources²⁹ to produce food for the market. Enterprises will further emerge around the commons that create added value to operate in the marketplace, but should probably also support the maintenance and expansion of the commons they rely on.

The transition period for this regime and paradigm shift should be expected to last for several decades, a period when we will witness a range of evolving hybrid management systems for food similar to those already working for universal health/education systems. The era of a homogenised, one-size-fits-all global food system will be replaced by a diversified network of regional

food-sheds designed to meet local needs and put culture and values back into our food system (The Food Commons, 2011). The big food corporations will not, of course, meekly allow their power to be diminished, and they will, inevitably, fight back by keeping on doing what has enabled them to reach such a dominant position today: legally (and illegally) lobbying governments to lower corporate tax rates and raise business subsidies, mitigating restrictive legal frameworks (related to GMO labelling, TV food advertising, local seed landraces, etc.) and generally using the various powers at their disposal to counter alternative food networks and food-producing systems. To emphasise, the confrontation will continue over decades, basically paralleling and in some ways reversing, in fact, the industrialisation and commodification path that has led us to this point.

Appropriate combinations of self-regulated collective actions, governmental rules and incentives, and private sector entrepreneurship should yield good results for food producers, consumers, the environment and society in general. The tricentric governance schemes will be initiated at both local and regional scales, as they imply a different way of organising the territory: smaller bio-regions with stronger local authorities, community-based civic collective actions and nested markets to supply unmet needs, supported by a partner and also an entrepreneurial state with a better balance of command-and-control measures and reflexive governance tools. Regarding socio-economic and environmental sustainability, the governance of food as a commons will rest on three premises: (a) the bonds and multidimensional value systems of the food-producing communities, (b) the tricentric governance mechanisms steered by partner states that regulate the food production, distribution and

consumption, and (c) the sustainability of the food-producing systems to maintain food footprints within ecological boundaries and to produce good food economically and efficiently.

Concrete proposals for re-commoning the future

In the developmental process of re-commoning food, the initial transition phase should witness greater levels of public sector involvement. States have a vital role to play, as throughout history (De Moor, 2008), by enabling legal and financial frameworks for collective actions to maximise the common interest (e.g. taxing and incentive schemes, public subsidies, relatively relaxed regulations for collective actions). The state must be seen as a funding and operational instrument to achieve society's well-being, including food security. However, the leading role of the state should gradually be shifted to self-initiated collective actions by producers and consumers, as the public provision of food should not surpass the net benefits yielded by the self-organised and socially negotiated food networks (Bollier, 2003). This will be crucial in order to avoid the pitfalls of the old-style socialist command economies. Therefore, there should be a devolutionary emphasis further enabling and promoting local organisation, agents and agencies (local governments, local entrepreneurs and local self-organised communities).

Second, if food is to be considered a commons, the legal, economic and political implications will go far beyond the territories of the hungry, as the food system governance will bring (further) extra-territorial obligations (Kent, 2008), as pertaining to the global nature of this common good. Until now, advocacy for anti-hunger measures has been based on demonstrating the economic and political impacts that hunger imposes on human

societies (Grantham-McGregor et al., 2007) or highlighting the links between food insecurity, social unrest and productivity losses (Messner & Cohen, 2008); alternative, non-economic arguments, such as moral obligation, public health considerations, social cohesion and human rights approaches have largely been neglected (Sidel, 1997; Pinstrup-Andersen, 2007). Considering food as a commons will provide the rationale underpinning these non-economic arguments.

Therefore, food will be kept out of trade agreements dealing with pure private goods (Rosset, 2006), and there will thus be a need to establish instead a transnational commons-based governing system for production, distribution and access to food, such as the agreements proposed for climate change (Griggs et al., 2013), future generations (Gardiner, 2014) and universal health coverage (Gostin & Friedman, 2013). This will pave the way for more binding legal frameworks to fight hunger (MacMillan & Vivero-Pol, 2011) and guarantee the right to food for all, as well as reinforce cosmopolitan global policies (Held, 2009) and fraternal ethics (Gonthier, 2000). A scheme for universal food coverage³⁰ would materialise the new narrative, guaranteeing a daily minimum amount of food for all citizens (HLPE, 2012) and thereby protecting the only human right declared as fundamental in the International Covenant on Economic, Social and Cultural Rights (ICESCR): freedom from hunger. The food coverage will probably need to be implemented as a basic food entitlement (van Parijs, 2005) or a food security floor, similar to the social protection floor proposed by Deacon (2012). As an immediate mechanism, every state should guarantee a minimum wage to a level at least equal to the value of the food basket.

There are legal and ethical grounds for banning futures trading in agricultural commodities, as speculation on food has a major impact on international and domestic prices and only benefits speculators. Considering food as a commons will prioritise the use of food for human consumption, and thus limit non-consumption uses. Additionally, it will serve to backstop the narrative to reverse the excessive patenting of life, helping to apply the principles of free software to the food and nutrition security domain. The patents-based agricultural sector appears to be retarding or even deterring the scaling up of agricultural and nutritional innovations (Boldrin & Levine, 2013), while the freedom to copy positively promotes creativity, as can be seen, for example, in the fashion industry and the computer world (Raustiala & Sprigman, 2012). Millions of people innovating with locally adapted patent-free technologies have a far greater capacity to find adaptive and appropriate solutions to the global food challenge than a few thousand scientists in expensive laboratories and research centres (Benkler, 2006).

Conclusion: crowd-feeding the world with meaningful food

This text posits that a fairer and more sustainable food system that takes food as a commons will revalorise its non-monetary dimensions (as an essential resource, human right, cultural item and tradable asset) as against the dominant industrial food system's mono-dimensional approach to food as a commodity. With the global and local food production and distribution systems no longer exclusively governed by market rules, institutional arrangements based on collective actions, appropriate legal collective entitlements, adequate funding and political

support can also be given due consideration by politicians and academics. Self-regulated collective actions for food represent a third pillar of the governance of the evolving food system. The state–market duopoly in food provision will need to re-accommodate this mounting force of citizen actions to reclaim food as a commons. Food can and must be shared, given for free and guaranteed by the state as well as cultivated by many and also traded in the market. The world cannot be fed by profit-seeking corporations treating food as a commodity, as we know now. We all need to be involved in food governance; the world should be crowd-fed by billions of small producers that are also consumers.

Food will be better governed by collective actions than by the rules of supply and demand. Unlike the market, the food commons are about cooperation, sharing, stewardship, equity, self-production, sustainability, collectiveness, embeddedness and direct democracy from local to global. Crucially, they involve civic collective actions for food built upon civic engagement, food conviviality, reducing consumption of ultra-processed foods and increasing seasonal and local products. This invokes a radical paradigm shift from individual competitiveness as the engine of progress via endless growth towards collective cooperation as the driver of happiness and the common good. The inherent sociability of *Homo sapiens* (Fiske, 1991) will enable the *Homo cooperans* to substitute the *Homo economicus* when dealing with our natural essentials.³¹

The de-commodification of food implies a delinkage of commodities and well-being, acceptance of free food schemes as part of the welfare state and increase in the proportion of goods consumed and services utilised outside both the formal market and the public (state) sphere. The re-commoning of

food involves a transition towards a new food regime in which primacy rests on the absolute needs of human beings and the different dimensions of food are properly valued. Such a food commons regime is one for which the world is eminently ready.

The institutional arrangements that govern local food systems and people's capacity for collective action will be essential agencies in any reconfiguration of the global food system to render it fairer and more sustainable. Finding the adequate balance between the tricentric institutional setup envisaged in the programme for a food commons regime as sketched here will be one of the major challenges for humankind to address in the coming century. We need to develop a food system that, first, provides for sustainable nutrition for all and, second, provides meaning, and not just utility, to food production, trading and consumption (Anderson, 2004). To achieve such a food system, we need to reconsider how food is regarded by our society, not merely or fundamentally as a privatised commodity but rather and crucially as a common good.

Notes

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2 The denationalisation of water provision services has become highly contested in many cities, such as Paris, Budapest, Jakarta and Dar el Salaam; see <http://www.remunicipalisation.org>; http://www.world-psi.org/sites/default/files/documents/research/dh-remunicipalisation_presentation-ppt.pdf

3 Planetary boundaries: thresholds in Earth-system variables that, if traversed, could generate unacceptable change in the biophysical processes of the world's natural environments (Rockstrom et al., 2009).

4 Malnutrition leads to the squandering of 11% of GNP, but just 1% of total overseas development assistance goes to nutrition programmes (IFPRI, 2014).

5 See <http://www.voanews.com/content/fertilizer-subsidy-costs-could-outweigh-benefits/1693403.html>; EU (2012); http://ec.europa.eu/agriculture/statistics/factsheets/pdf/eu_en.pdf; <http://capreform.eu/the-us-farm-bill-lessons-for-capreform/>

8 The latter is an estimate made by the author based on data from the Global Footprint Network, including footprints of croplands, grazing lands and fishing grounds. <http://www.footprintnetwork.org>

9 Cheap calories: low-cost sources of dietary energy such as refined grains, added sugars and fats, which, inexpensive and tasty, together with salt form the basis of ultra-processed industrial food; the more nutrient-dense lean meats, fish, fresh vegetables and fruit are generally more costly because they are less highly subsidised (Drewnowski & Darmon, 2005).

10 E.g. recipes associated with some types of food, the conviviality of cropping, cooking or eating together, the local names of forgotten varieties and dishes or the traditional moral economy of food production and distribution, materialised in the ancient and now proscribed practices of gleaning or famine thefts.

11 Within these three categories, of course, a wide range of different rights and duties can be identified, related to access, withdrawal, management, exclusion and alienation, being the result of complex societal arrangements by different human groups (Schlager & Ostrom, 1992).

12 Many types of food are still endowed with sacred beliefs (quinoa was sacred for the Peruvian Incas, cows are sacred and inedible for Hindus, etc.) and their production and distribution thus governed by non-market rules.

13 Mostly used for grazing, common lands still cover 9% of the surface of France (Vivier, 2002), for example, more than 10% in Switzerland, 4.2% in Spain (Lana-Berasain & Iriarte-Goni, 2015) and 4% in England and Wales. <http://www.nationalarchives.gov.uk/help-with-your-research/research-guides/common-lands/>; http://ec.europa.eu/eurostat/statistics-explained/index.php/Farm_structure_survey_%E2%80%93_common_land; <http://webarchive.nationalarchives.gov.uk/20130822084033http://www.defra.gov.uk/wildlife-countryside/protected-areas/common-land/about.htm>

14 The same can be said of community-managed forests, worldwide (Porter-Bolland et al., 2012).

15 There are currently 1,550 million hectares of cultivated land, a resource that is becoming increasingly scarce (Lambin et al., 2013).

16 NGOs such as Carbon Trade Watch, Carbon Market Watch and Redd Monitor are advocating against the EU Emissions Trading Scheme. See <http://www.carbontradewatch.org>, <http://carbonmarketwatch.org> www.redd-monitor.org

17 E.g. see the final Declaration of La Via Campesina during the World Social Forum (Tunisia, April 2013). At <http://www.viacampesina.org/en/index.php/actions-and-events-mainmenu-26/world-social-forum-mainmenu-34/1405-to-reclaim-our-future-we-must-change-the-present-our-proposal-for-changing-the-system-and-not-the-climate>

18 This is evident in the global food security policy documents 'MDG and WFS Plans of Action', the 'CFS Global Strategic Framework for Food Security and Nutrition 2012', the 'G-8 New Alliance for Food Security and Nutrition 2012', the 'G-20 L'Aquila Food Security Initiative', 'The G-20 Action Plan on Food Price Volatility And Agriculture 2012' and the 'World Economic Forum New Vision for Agriculture' (see Vivero-Pol, 2013).

19 Although not yet acknowledging themselves as part of the same movement, grassroots collective-based initiatives related to, e.g., degrowth, food sovereignty, commoners, peer-to-peer, veggies, *buen vivir*, happiness index, open knowledge, occupy and indignados are building a new way of producing, transforming and consuming food.

20 See, e.g., the Open Source Seed Initiative, recently launched at the University of Wisconsin-Madison. <http://www.opensourceseedinitiative.org/about/>

21 <http://www.fao.org/about/meetings/icn2/friday-21-november/en/>

22 E.g. food swaps in Australia, food growing and free harvest in Belgium, food gleanings in the UK, food policy councils in Canada (Toronto) and Brazil (Belo Horizonte), food trusts and community-supported agriculture in the US and local food-sheds in New York, and the Slow Food movement originating in Italy and now extended to 150 countries.

23 Peer-to-peer: the ability to freely associate with others around the creation of common value; alternatively, 'communal shareholding': the non-reciprocal exchange of an individual with a totality, being the totality of the commons (Fiske, 1991).

24 A term created by Bauer and Roux (1976) to describe the blurred boundaries between urban and rural spaces in ever-growing metropolitan areas where area-specific economic activities and social relations in urban and rural areas influence each other, the food system being a paradigmatic case.

25 See Silke Helfre's notes in the Partner State entry at the P2P Foundation. http://p2pfoundation.net/Partner_State

26 Making Local Food Work is a five-year £10 million programme funded by the Big Lottery Fund and delivered by the Plunkett Foundation that helps people to take control of their food supply by supporting a range of community food enterprises across England. At <http://www.makinglocalfoodwork.co.uk>

27 Shareholder value maximisation is detrimental for company performance in the medium and long term insofar as it subtracts money from profits to be distributed to short-sighted shareholders and stock buybacks instead of being used to reinvest in company assets, higher salaries, fair payments to suppliers, research and innovation or social responsibility (Chang, 2011).

28 The total turnover of the food-producing cooperative sector in 2012 was US\$0.6 trillion, and growing every year despite

the global financial crisis (International Co-operative Alliance, 2014). This information was collected from 523 cooperatives from 30 countries involved in the production, processing and marketing of agricultural goods for members. The agriculture and food cooperative sector is the second biggest in the world, after finance, and includes some huge enterprises, such as the Japanese National Federation of Agricultural Co-operatives (USD\$56.8 billion turnover), the South Korean NH Nonghyup (US\$50.7 million, with 2.4 million members and a financing system serving 37 million customers) and the Fonterra Cooperative Group in New Zealand (US\$16.2 billion).

29 Owned by trusts (in the US), local communities (in Europe or Africa, see above) or the state.

30 An idea called for by Nobel prize-winner Amartya Sen. At <http://www.governancenow.com/news/regular-story/amartya-sen-bats-universal-food-coverage>

31 The *Homo economicus* concept, launched in the nineteenth century by the philosopher John Stuart Mill, sees humans as rational and narrowly self-interested actors whose main goal in the market is to maximise utility as consumers and economic profit as producers (Persky, 1995); in contrast, the *Homo cooperans* idea regards people as primarily motivated by cooperation, the common of their society, community or group, and to improve their environment (De Moor, 2013).

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