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What our fridge is hiding

In an Andalusian village –excellent land for olive trees– a grandmother was explaining the origin of the oil to her granddaughter. Some days later, in the family olive grove, she was testing whether her educational efforts had been successful. 'Marta, do you remember where oil comes from?' 'It comes from a bottle', the child replied, proud of her knowledge. This anecdote, absolutely true, illustrates how little we know about what we eat and the relationship we have with food.

This Global Express explains how our food system works, which results in a billion people starving whilst more than half the population of the industrialised world is overweight. It puts forward proposals for classroom activities on how to tackle this injustice through habits and practices of consumption.



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**Intermón
Oxfam**



Introduction

Almost a billion people are starving every day¹. It is a catastrophe, but not one of those that we call 'natural'. At the same time, more than half the population of the industrialised world is overweight. Is this yet another catastrophe? No; but they are both the visible tip of a deep underlying problem: the people in charge of unsustainable consumption and a scandalous production model which snatches a basic right, access to food, away from a large part of the world's population and, in many countries, denies them the

possibility of choice in such as fundamental area.

The continual rise in the price of food and oil; the lack of water and cultivable land; land-grabbing which condemns peasants, especially those in impoverished countries – to beggary; climate change and environmental degradation, are all causes of the fact that so many millions of people, day after day, have nothing to eat. And all this takes place on a planet which could easily feed all its inhabitants.

It is calculated that 1% of the food produced would be enough to end world hunger. This fact clashes with another: according to FAO, between 10-40% of food produced is thrown away. In rich countries, it is possible that around a quarter of the food bought by consumers is wasted.

Strangely, 80% of the people who are starving in the world are farmers; in other words, it is their job to produce food².



Foto: Intermón Oxfam

1. 'Growing a better future: food justice in a resource-constrained world', a base document of the Intermón Oxfam GROW campaign. Available on: www.intermonoxfam.org/sites/default/files/articulos/adjuntos/110531_cultivarfuturo.pdf

2. GRAIN: Introducción a la Crisis Alimentaria Global (*Introduction to the Global Food Crisis: in Spanish*), www.grain.org/es/article/categories/219-otras-publicaciones



The plate gives us away

If one day all the inhabitants of Earth sat down together to eat, our respective plates would be a living image of a world of variety. The American photographer Peter Menzel has spent years collecting images of the different ways human beings eat. In very general terms, the Western diet is rich in dairy products and meat and poor in cereals and fruit, while the diet of the countries of the South, again in very general terms, is the opposite. More or less in the middle, the Mediterranean diet is more balanced in its ingredients (but whether the amount is balanced against need or is excessive is another matter).

Dietary habits are closely related to the idea we have of what is desirable and so, despite the praise this diet has received (UNESCO declared it an Intangible Cultural Heritage of Humanity in 2010), the inhabitants of the Mediterranean regions are not very faithful to it. In fact their diet contains increasing amounts of meat and less fruit and vegetables. Studies – and simple observation – show that increases in income and greater urbanisation are leading to less cereal in the diet and more meat, dairy products, fish, fruit and vegetables.

The problem is not whether what is on the world's plates is varied or

not, but that it is very unequal. In his book *Hungry Planet*,³ published in 2006, Menzel states that, whilst a German family spends around \$500 a week on food, a family in Chad has only just over \$1.50 to spend.

In addition, the 'Western' diet uses up a lot of resources: land, water and air, the cost of which is not reflected in the price ticket. This is what Singer and Mason call 'the hidden costs of cheap chicken' in their book *The Ethics of What We Eat* (Rodale, 2008). What we eat reveals who we are, not just from a physical, but also from a political and ethical, perspective.

Ecological footprint of various foods

		 Water consumption footprint (litres)*	 Emissions (kg CO ₂ e)**	 Land use (m ²)***	 Cereals for animal feedstuffs (kg)	 Calories (kcal)
1 kg						
 Beef		15.500	16	7,9	6	2.470
 Chicken		3.900	4,6	6,4	1,8	1.650
 Eggs		3.333	5,5	6,7	-	1.430
 Milk		1.000	10,6	9,8	-	610
 Wheat		1.300	0,8	1,5	-	3.400
 Rice		3.400	-	-	-	1.300

* Average weight of an egg is assumed to be 60 g and the density of milk 1 kg per litre

** Based on production in England and Wales

*** Based on production in England and Wales, all production assumed to be on land of similar type

Sources: Water <http://goo.gl/MtngH>; Emissions and land use <http://goo.gl/T12ho>; cereals <http://goo.gl/4CgFB>; calories <http://goo.gl/7egTT>

3. The presentation 'Time to eat!', based on the book, is available on the Internet: http://usuaris.tinet.org/mikell/A_comer.pps



How food is produced

A little history

The predominant agricultural model is governed by 'productivism', like all sectors of the economy; in other words by a desire to produce as much as possible, with the least cost, in order to maximise profits. Cost is understood to be economic cost, because the price we pay in many other aspects is very high.

To understand how food is produced now, we have to look at a little history. From time immemorial, farmers have tried to improve their harvests, both in quantity and quality, by selecting the seeds from those plants which have proved more resistant, healthier, and tastier. At the beginning of the 20th century, a number of companies devoted themselves to this task in, let's say, an industrial manner. Sometime later, they started to market hybrid seeds, the result of cross-breeding distantly related species, which produced plants with high resistance but which were sterile. As a consequence, farmers had to buy seed from these companies every year, starting down a path of dependency which has continued to grow, arriving at the oligopolistic situation we have now, controlled by the small number of big companies which dominate the agro-industrial sector.

At the beginning of the 1960s, FAO, the UN agency which specialises in food and agriculture, decided to drive forward an agricultural development plan to find high performance seeds, especially wheat, corn and rice, with the aim of ending world hunger. In effect, production increased significantly (according to the [Diccionario de Acción Humanitaria y Cooperación al Desarrollo](#), (Dictionary of Humanitarian Action and Development Cooperation), by an annual average of 2% between 1961 and 1980 in the countries of the South).



Photo: Intermón Oxfam

The high performance seeds and the development of plant protection products, which provide nutrients to the soil and kill pests, insects and weeds, made the so-called 'green revolution' possible, which for some time enjoyed a good press. However, the passage of time has made clear that, in many aspects, the cure was worse than the disease.

Effects of the 'green revolution':

- Damage to health and to the environment: artificial fertilisers have caused the impoverishment of the soil and have increased erosion; pesticides and herbicides pollute the soil and water, and the guarantees that they will not now enter the food chain, with the consequent risk to health, are not sufficient.
- Loss of agricultural biodiversity: uniformity in the use of seeds reduces variety, which not only impoverishes our diet but also reduces their resistance to pests.
- Loss of nutritional quality: artificial fertilisers supply macronutrients to the land but the trace elements - minerals present in the soil and plants in small quantities - that traditional agriculture supplied are lost. These are of prime importance for nutrition because they make it possible for us to create enzymes, hormones and other elements essential for our health.
- Energy inefficiency: the increase in production was achieved by apply-

ing large amounts of energy in the form of chemical fertilisers, mechanisation, fuel, pesticides and irrigation; in other words, investing more per unit output.

- Dependency of peasants: the investment required is not within the reach of small farmers, a fact that encourages a large-scale agricultural model controlled by large landowners, and a dependency which is in addition to their dependency on the big seed-owning companies. In this sense, it is an effect contrary to what was wanted: the peasants lose their food autonomy and, in the end, their land, in debt because of their need to buy seeds, fertilisers and pesticides. In 2000, a quarter of the costs of production were for buying seeds, fertilisers and plant protection products.⁴
- Trend towards 'macro-properties': land grabbing.
- For a time, surpluses from Europe and the United States have encroached on other markets through dumping practices.

To these drawbacks, we have to add that, although the situation in some countries improved, it did not put an end to hunger. 'The 'green revolution' failed to alleviate the situation and was even counterproductive on occasions, because it did not address the real reasons for hunger'. (Jorge Gutiérrez, *Diccionario de Acción Humanitaria...*).

4. COAG, citat a *Opciones*, núm. 11.



An unfair and dangerous model

Generally speaking, this is the process which has produced the **current production model**,⁵ characterised by:

Dependency on pesticides and fertilisers: chemicals on the plate

Modern industrial agriculture has to go ever faster just to stay on the same spot. To put it simply, increasing irrigation and the use of fertilisers can only take us a little further, and we are almost there already. With the exception of a number of developing countries, the margin for increasing the area under irrigation is disappearing. And increasing the use of fertilisers brings with it diminishing returns and causes serious environmental consequences.

The huge increase in the use of fertilisers and chemical pesticides, whose consumption in the former doubled and in the latter quintupled in the 1970s, has caused various kinds of pollution, together with the exhaustion of the soil, which cannot recover all of its nutrients.

Low efficiency energy balance

More energy is invested to achieve lower production. In Spanish agriculture, the production of one calorie of food requires the investment of 1.25 calories; in the United States, to obtain one calorie, ten are applied; in traditional Spanish agriculture, 20 calories were produced from one calorie.⁶ A study carried out in five municipalities in the district of Vallès (Barcelona province) shows that, despite significant in-

creases in crop productivity over the last century, the energy efficiency index has decreased from 1.67 in 1860 to 0.21 in 1999.⁷

Dependency on seed companies: the future in the hands of the few

Seeds have to be bought every year, because harvested cereal cannot be used as seed for the next sowing, as is normally the case in traditional sustainable agriculture; this gives the big companies a great deal of power and puts the peasants in a position of dependency. Worldwide, four companies - Dupont, Monsanto, Syngenta and Limagrain - control more than 50% of seed industry sales, whilst 75% of the agrochemical industry is controlled by six companies.

Conventional citrus fruit production in Valencian orchards: energy balance

Energy inputs

- Labour
- Machinery
- Petrol
- Diesel
- Fertilisers
- Pesticides
- Electricity
- Seeds

17,335,323 kcal/ha

Energy outputs



- Nutritional value of citrus fruit

14.136.314 kcal/ha

Net energy gained
-3,199,009 kcal

Energy index:
OP/IP=0,91

Calories obtained per calorie invested

Traditional China	50
English farm in 1826	40
Traditional Castilian cereal grower	20
Tsembanga (New Guinea tribe)	16
Modern day Spain	1
Modern day USA	1

5. The documentary *Food Inc.* explains how the agrifood system works. Although it is about the US system, it can to a large extent be applied to ours, which is, after all, within the same cultural environment: <http://documentaryaddict.com/Food+Inc-2174-documentary.html>

6. Jorge Reichmann: "Menos carne, mejor carne, vida para el campo" (Less meat, better meat, life for the countryside), *El Ecologista*, nº 17.

7. "Cuando el olmo pide peras. El insostenible consumo energético del sistema alimentario" (Asking for the impossible: the food system's unsustainable energy consumption), *ESFeres*, nº 9. Available on: [www.catalunya.isf.es/menu_publicaciones/pub_general.php?\\$sesion_idioma=1&\\$menu=3&identifica=informes&nombrexml=118](http://www.catalunya.isf.es/menu_publicaciones/pub_general.php?$sesion_idioma=1&$menu=3&identifica=informes&nombrexml=118). The illustration on the energy balance of the citrus industry also comes from this publication.



Land grabbing⁸

The concentration of large areas of farmland in a few hands is not a new phenomenon but, in the current context of financial globalisation, it has its own characteristics which make the consequences worse; companies or governments acquire land illegitimately and with little transparency, by means of privatisation, large-scale sales, long-term concessions or even illegal and violent seizure.

This process has gained momentum since 2007 due to the two big crises - financial and food - when big capital fled from the mortgage markets and appeared in the agricultural sector, unleashing a race to buy land in Africa, Asia and Latin America which has done nothing but grow: in Africa in 2009 the same amount of money was invested as over the previous 22 years. Environmental causes also have to be added to these speculative causes. As a consequence of climate change, cultivable land is diminishing, but the demand for food is increasing, because of increases in population and levels of consumption in emerging countries with big populations; pressure on the limited resources of the planet is constantly increasing. To complete the circle, those who are buying are powerful governments and omnipotent companies, in countries that are fragile democracies or dictatorships pure and simple, prime targets for investors, according to a recent World Bank study.

The victims of such enormous investment in such unequal regimes are peasant families, who are expelled from the lands they have worked on for generations and who are left with no means of making a living. These violations of human rights particularly affect women, who produce most of the food but who are the owners of only between 10-20% of cultivable land.



Foto: Intermón Oxfam

Agricultural frontier constantly shrinking and loss of cultivable land

The agricultural frontier is the boundary between land devoted to agriculture and land that is still untouched; this boundary expands more and more, in large part due to human pressure.

In some arid or desert zones, they are seeking to expand this frontier, which is seen as something positive. However, in others its extension means deforestation because of the loss of cultivable land. The replacement of flora and fauna by agricultural land is associated with environmental degradation, the indiscriminate use of agrochemicals, the large areas required for mechanised agriculture and the overexploitation of the soil, all of which are negative factors for the environment.

In other words, on the one hand, more and more virgin land is lost as a consequence of agricultural practices that have low levels of sustainability; on the other, urban pressure and environmental degradation threaten agricultural land. More than two billion hectares of agricultural land was lost in the second half of the twentieth century, an area twice the size of Canada.⁹ 'We are moving from a rural matrix with human traces to the opposite: a hu-

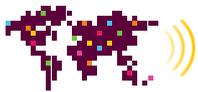
man matrix with agricultural traces' (Enric Tello).

Climate change

The current industrial production and consumption model is a big energy consumer and contributes significantly to global warming. In addition to the transport of food and the deforestation associated with industrial scale livestock farming, the management of agricultural land, the use of artificial fertilisers, the manufacture of industrial feedstuffs and the destruction of local food markets, all constitute the nucleus of worldwide emissions of greenhouse gases. At the same time, the food processing and distribution industries - which include transport, packaging, refrigeration and marketing - are also big producers of emissions. It is calculated that the agrofood system generates up to 50% of these emissions ([Cocinando el planeta](#)). (Cooking the planet)

The consequences of climate change on food are extremely significant. Firstly, they act as a brake on crop yields. It is calculated that rice yields could decrease by 10% for every °C the temperatures increase during the dry season. The countries of sub-Saharan Africa could experience catastrophic re-

8. www.intermonoxfam.org/sites/default/files/documentos/files/Informe%20acaparamiento%20de%20tierras%2001-%20sept%202011.pdf
9. Gary Gardner: Worldwatch Institute report, in *Opciones*, nº 11.



ductions of between 20-30% by 2080, even reaching 50% in Sudan and Senegal.

Secondly, the frequency and harshness of extreme climate events, such as heat waves, droughts and floods, will increase. All the while as creeping and alarming seasonal

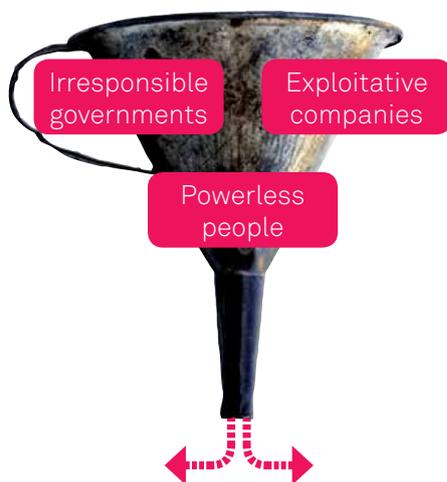
changes, such as longer and hotter dry seasons, shorter growing seasons and unpredictable rainfall patterns make it increasingly difficult to know when it is best to sow, plant and harvest.

'Despite the scale and urgency of the challenge, governments, both

collectively and individually, have failed to take appropriate action to reduce emissions. Instead they have listened to industrial pressure groups, to the small number of companies who could lose in a move towards a sustainable future, from which the rest of us would gain'¹⁰

The wrongs of the food system

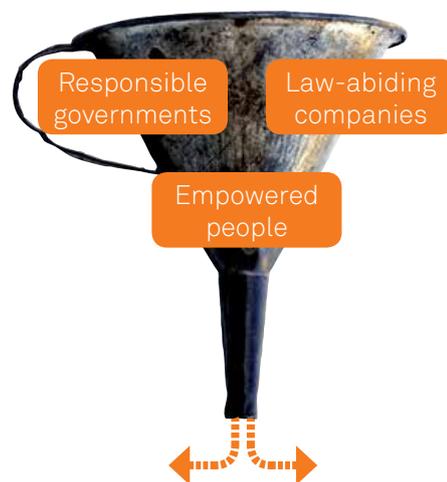
Problems Broken food system



Production model
(Unsustainable and unfair)
- Land grabbing
- Lack of investment

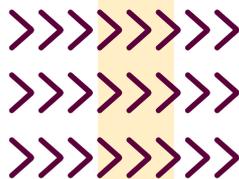
Consumption model
(Irresponsible)
- Waste
- Unfair trade

Solutions Fair food system



Production model
(Sustainable and fair)
- The right to land
- Investment in small-scale agriculture

Consumption model
(Responsible)
- Savings
- Fair trade



Source: own creation

The wrongs of something which is so much a part of our daily lives have deep and complex roots. What is, or what is not, on the table is the visible tip of a broken system, of unfair relationships and distribution: the people who produce and consume food have little decision-making power, whilst those who do have power – governments and big busi-

ness – often act irresponsibly, more out of greed and self-interest than thinking of the common good. All of this is possible in a consumerist system, where waste is the norm. Changing things in a meaningful way requires the creation of steps to change the system. It is not easy and there are many factors at play, but one of these is those of us who

fill our plates every day. This edition of *Global Express* is, without ignoring the political and economic factors, focused precisely on the consumption model and what we, individually and collectively as consumers, can do and from that we will transcend politics.

10. Growing a better future: food justice in a resource-constrained world.



How we put food on the table

We find the food that graces our plates basically via four routes: traditional shops, supermarkets, hypermarkets and direct consumption. Each of these has its own characteristics.

Local specialist shops (greengrocers, butchers, etc.), very common in **traditional shopping**, are frequently family businesses, but sometimes with someone who receives a salary. They usually get their supplies from wholesale traders, with a higher likelihood of providing local, seasonal products: they know more about where the products have come from; they are an important part of the social fabric of the neighbourhood.

Buying directly from the producer, without intermediaries, is usually done from stalls, staffed by a member of the family who produced the goods, at fairs, weekly travelling

markets, or municipal markets, or in cooperatives or consumer groups. This last option is the most frequent in the direct consumption of organic food.

Although this means more work and demanding hours for the food producers, it also ensures their independence and control over their products, because they decide the price and production model. These paths bring together the real main players, the producers and consumers, putting them in direct contact with each other and empowering them; they encourage more sustainable forms of agriculture, both from a social and environmental point of view; they provide opportunities for the rural world; they facilitate access to local, good quality products (these really are 0 kilometre!); they provide consumers with first-hand information; they facilitate cooperation and strengthen the social fabric.

On the face of it, **self-service shops and supermarkets** are situated on the middle path. However, in reality they are closer to one side than the other: often they are owned by big companies. Although they have the advantage of being close by, their commercial and business logic is more responsive to big business interests than to relationships with suppliers, employment conditions and the social fabric.

In Spain, more than 80% of food purchases are from these businesses and, especially from hypermarkets,¹¹ in which food in particular reaches the consumers after a normally very long journey, with the consequent increase in fuel consumption and ecological footprint.

Ecological footprint for 2007 (per hectare)

 Live animals	 1,605
 Meat and meat preparations	 67,779
 Dairy products, eggs...	 162,204
 Fish, seafood	 420,580
 Cereals and cereal preparations	 776,167
 Legumes and fruit	 527,640
 Sugar and sugar preparations	 89,548
 Coffee, tea, cocoa and spices	 66,528
 Animal feedstuffs	 459,805
 Processed products	 63,583

http://issuu.com/amigos_de_la_tierra_esp/docs/informe_alimentoskm?mode=window&pageNumber=2, pág. 47. (Friends of the Earth report: in Spanish)

11. *Supermercados no, gracias*, (Supermarkets, no thanks, in Spanish) Icaria, 2007.



When we put the food we have bought into our cars, most of it has reached its final, and shortest, stage of its long journey, which could have started at any place on the planet, because delocalisation has also arrived at our larder.

Spanish long distance imports

Live animals	2.439 km
Meat and meat derivatives	2.380 km
Milk products, eggs...	1.339 km
Fish, seafood, molluscs	6.787 km
Cereals and cereal derivatives	4.234 km
Legumes and fruits	5.034 km
Sugar and sugar derivatives	3.216 km
Coffee, tea, cocoa and spices	6.227 km
Animal feedstuffs	7.901 km
Processed products	1.937 km

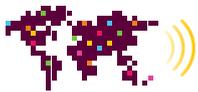
http://issuu.com/amigos_de_la_tierra_esp/docs/informe_alimentoskm?mode=window&pageNumber=2, pág. 11

Average distance travelled in km per type of food in 2007.



It is difficult to understand many of these journeys. Every day we import 330,000 kilos of chicken while we export 205,000 kilos; Spain sells the United Kingdom 220,000 kilos of potatoes and buys from the UK 72,000 kilos.

‘Every day 3,500 pigs travel to Spain from other European countries and on the same day 3,000 pigs make the opposite journey. The kilometres travelled by the food we eat reaches similar levels of absurdity and some are much worse: every day multinational companies extract tonnes of perch from Lake Victoria, Africa, for European consumption, whilst two million people who live around the lake are starving’. (G. Duch, *Lo que hay que tragar: Things to swallow*, in Spanish).



Who decides what we eat

This way of working, which at the beginning was just surprising but is now a scandal, is just the logical outcome of a model which has become known as Supermarket model, which does not mean that these establishments should be blamed for everything, but that they occupy a central position in the system. To put it briefly, the big marketing chains (which are called chains for good reason) control the whole process, from production –because they are also owners or because they are in a position to impose their own conditions – up to and including consumption, in businesses designed to encourage consumerism (increasingly with the appearance of being more personalised, thanks to those cards which give us little advantages in return for a large amount of information about our buying habits), which they have set up in the temples to the consumer society and use to convert the satisfying of our needs into a leisure activity.

Just a few hundred companies – in marketing, processing, manufacturing and retail – control 70% of the options and decisions in the world's food system, including those companies involved in key resources such as land, water, seeds, technology and infrastructure. By deciding on the rules of the food chains they control – regarding price, cost and standards – they determine where the majority of the costs are concentrated and who assumes the biggest risks. They extract the greatest part of the value along the length of the chain, whilst the costs and risks are passed down to the weakest participants, generally speaking the farmers and low-level workers.

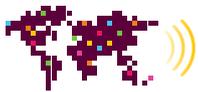
The companies which control distribution are the cornerstones. In Spain, their increase in power has been very rapid: between 1987 and 2007 the turnover of the ten biggest groups multiplied by a factor of ten

(from €4.365bn to €48bn). Currently, according to Ministry of Agriculture figures, 40% of retail sales are concentrated in five big distribution companies. Mercadona, Carrefour, Día, Eroski, Auchan-Alcampo, Lidl and the food division of El Corte Inglés together have a retail turnover of more than €40bn.

The big chains seek maximum profits. This unequal relationship between the many producers on the one side and a small number of big purchasing groups on the other means that the latter can impose draconian conditions on the producers, including fixing prices at source, special prices, and even prices below the cost of production, which the producers are forced to accept. They also concentrate production in the areas with the lowest costs, without concerning themselves with working conditions or repercussions on local agriculture or, even less, with the ecological



Photo: Cosmopolita



costs which, while not being included in the price, are nevertheless paid by us all.

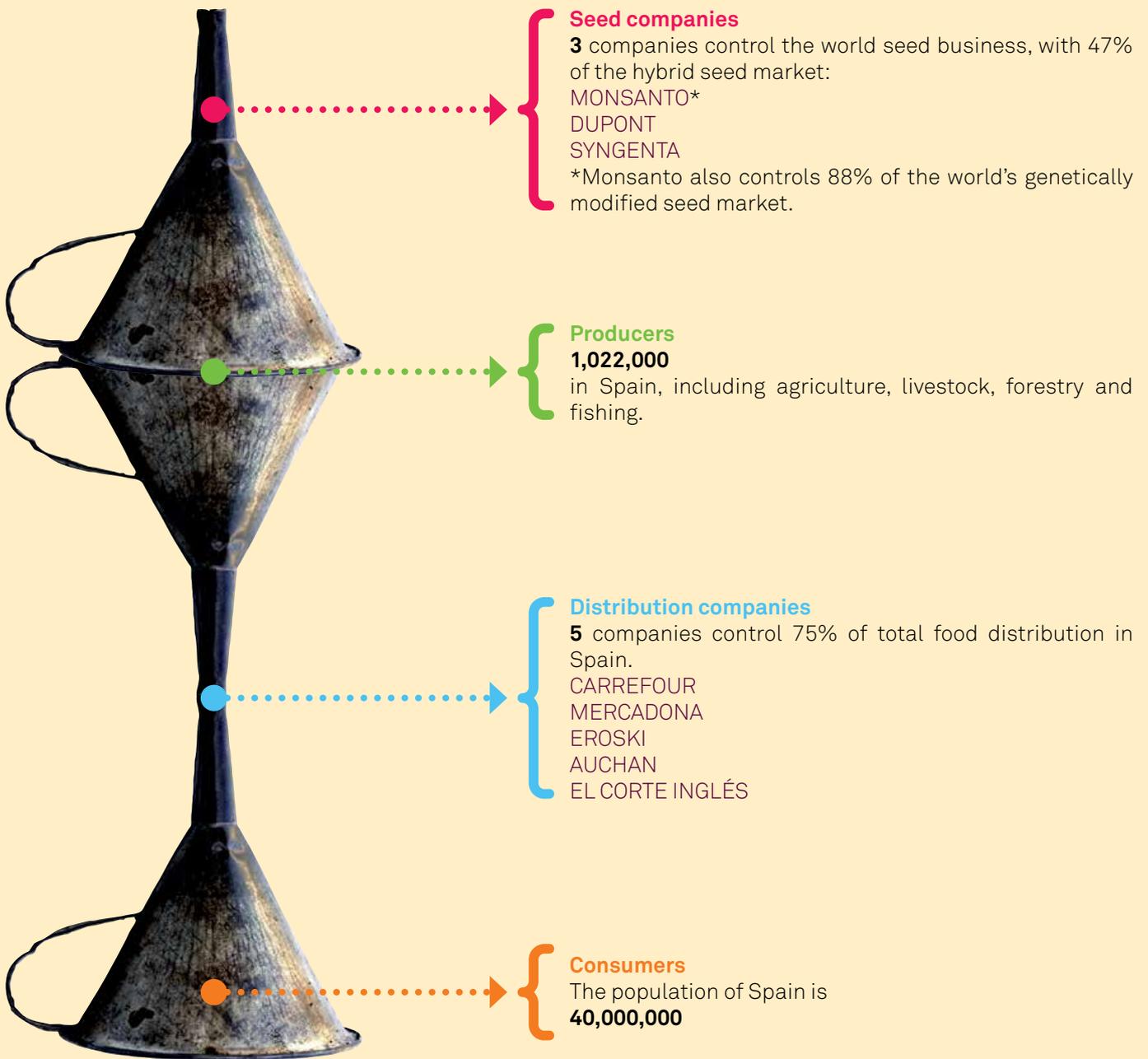
An example of this search for profit at any cost is the general custom of delaying payments to suppliers for up to 100 days or more, while we as

customers pay at the point of sale. They are able to invest this retained money, which provides them with additional income. This creates the ridiculous situation in which producers can find themselves obliged to get into debt to cover late payments whilst the money they are

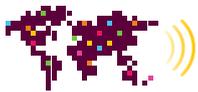
owed is producing income for others. In other words, the 'at any price' of maximum profit is paid by the producer.

Someone rather clever created an image for this state of affairs, illustrating the law of the funnel.

Who controls the agrifood system?



This illustration is based on the one which appears in the publication *Petroaliments o sobirania alimentària? (Petro-foods or food sovereignty?, in Catalan)*(2009) <http://es.scribd.com/doc/14211964/Petroaliments-o-Sobirania-Aliment-Aria-Baixa>



Food prices

Photo: Ministerio de Agricultura, Chile



Does all this explain why almost one billion people cannot satisfy the most basic necessity of all, feeding themselves? No. There is one important element missing, which is the response to the genetic code of the consumer society: food has become just another form of merchandise whose main function is profit, relegating to second place its role as a basic right. Cereals, fats, meat and other foods have been transformed in recent years into a line of speculative products, subject to the logic of the financial markets. In fact, the price of foodstuffs these days is decided on the Chicago Stock Exchange. 'And what is certain', writes Fernando Barciela in *El País*, 'is that the popularisation of these financial instruments has coincided with an historic rise in the price of agricultural commodities on the Chicago, London and Paris markets'. The participation of financial institutions in the agricultural market has increased from 10% twenty years ago to 40% now; in other words, it has multiplied by a factor of four.

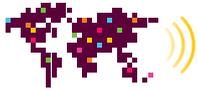
In 1991, Goldman Sachs created a financial instrument which allowed it to invest its wealth in basic products such as wheat, rice and coffee.

'From 2000 to date', writes Gustavo Duch in *La Jornada*, 'with no other bubbles to inflate, the price of basic foods has practically tripled in parallel with the increase in financial activity in these tasty financial dishes'.

'For Goldman Sachs, investing in loaves and fish and waiting for them to multiply miraculously has given them profits of \$5bn a year. A lot of money which in just a few years would be enough to fix global hunger, but of course this is not what they have in mind, this is not their business, quite the opposite. They create hunger, they are 'hunger-makers'.

What for some people are 'agricultural commodities' are for others, purely and simply, food. The problems are the 'collateral effects' of this market. Since about 2005, prices of the most important basic products – including corn, wheat and other cereals essential to our diet – have gone through the roof, soaring with no end in sight. The World Bank estimates that the 2008 spike in prices pushed around 100 million people into poverty, 30 million of these in Africa.

"Price volatility causes havoc for women and men who live in conditions of poverty, but presents great opportunities for agro industrial companies such as Cargill, Bunge and ADM which, according to estimates, between them control almost 90% of the world's cereals market. In times of price stability, financial margins are extremely tight, but instability allows the big marketing companies to exploit their insider knowledge of reserve levels and expected supply and demand movements. In the second quarter of 2008, Bunge quadrupled its profits compared to the same period in 2007. The sudden rise in the price of crops during the second half of 2010 gave Cargill its biggest profits since 2008, which were attributed by the president and executive director Greg Page to 'a surge in the volatility of the agricultural markets'".



There are alternatives underway

Sustainable agriculture, the ecology movement and other ways of producing with common sense and for the common good

That this is the dominant model does not mean it is the only one. Many people and groups are working within fairer and more sensitive parameters.

'Facing the supermarket model (homogeneity and globalisation) and the big homogeneous landscapes is the mosaic landscape of traditional agriculture which safeguards variety and biodiversity', writes Ramón Margalef, one of the fathers of the ecology movement.

Sustainable agriculture is based on reinforcing and improving the traditional agriculture that small-scale farmers have practised for centuries; it is characterised by the avoidance of environmental damage and the conservation of natural re-

sources, the use of renewable local resources and cheap, appropriate technologies, minimum purchase of external inputs and, consequently, a high level of local self-sufficiency.

Instead of monoculture, it combines different plants and varieties adapted to specific microclimates. These practices allow the land to be used to its maximum, by planting rapid-growth plants next to others which require more time, and taking advantage of the complementary needs for nutrients of different plants (for example, some contribute to replenishing the soil with the nitrogen others need). These practices also help extend the food production cycle, and therefore income and work, throughout the year. In the same way, they help reduce the

risk of infestations (greater in monoculture) and weed growth (which reduces crop productivity), they allow better use of light, by planting crops which create shade for others which require less light.

Sustainable agriculture is now argued for in many quarters, both in North and South, for example: NGOs such as Oxfam, ActionAid and many others who have integrated it into their development projects; organisations such as La Vía Campesina, a network of peasant organisations both in developed and developing countries; and research and information centres such as the International Institute for Environment and Development (IIED) in London, etc.



Photo: Carmir



Getting more involved in our food and thinking about alternatives

Seasonal and locally produced food

'Zero-mile food' avoid unnecessary transport over thousands of kilometres, saving a lot of energy, as well as supporting the local farming economy.

Food consumption is, as far as possible and within the needs at any given time, adjusted to seasonal rhythms. As well as avoiding the energy consumption associated with distance, greenhouses and other installations such as cold storage, seasonal food also responds to many of our needs at any given moment. Summer fruit and vegetables are fresher and lighter and help us to consume more water (tomatoes, cucumbers, melon, etc.), whilst winter and autumn food has higher calorific content and properties which help us to protect ourselves against respiratory infections (antiseptic and anti-mucus foods such as garlic and leeks).

Less meat and its derivatives

Moderating the consumption of meat is good for our health as well as for the planet. The ecological footprint of meat is much bigger than that of other foods such as cereals. Even though it depends on the production methods and the kind of meat (beef has a largest footprint and chicken the smallest), in general it consumes more energy and water, needs the largest land area and creates most pollution. To obtain 1 kilo of animal protein, between 3 and 20 kilos of vegetable protein are used. If the cereals used to feed livestock which are then converted into fillets were used directly as food, it would provide food to many



Foto: Echiner

more people. As regards pollution, the livestock sector is, according to FAO, responsible for 18% of polluting emissions.

It is impossible to calculate the real price, because there many elements at play, some which the market downplays, such as pollution or soil degradation, and prices which vary widely, but it is clear that eating a lot of meat turns out to be very expensive, including for those who cannot afford it: the land used to produce food for livestock, especially cattle, results in the deforestation or conversion of land from traditional agriculture.

Better fresh and without bags

The consumption of processed and ready-prepared food can increase energy costs by up to 30%, as well as containing substances which have little in the way of healthy qualities (preservatives, etc.).

Much can be done to reduce the creation of unnecessary residues

and the energy costs associated with their management, such as avoiding unnecessary packaging when buying food, especially Por-expan (expanded polystyrene) trays, or buying loose or by weight, which saves an average of 0.08 MJ per tray (the equivalent of an hour and a half of light from a bulb). Shopping trolleys, textile bags and baskets, etc. are a good alternative to plastic bags.

Packaging can have more than one life if it is reused. If the option exists, the best kinds are those that can be returned (glass bottles and jars which are returned to the shop) to avoid the high cost of manufacturing the packaging and the creation of residues. And if this option does not exist, they can be recycled.

Understanding and demanding traceability

Currently, traceability is obligatory for very few products and what we do have is very basic, but under-

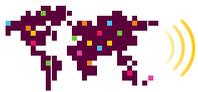


Photo: Intermón Oxfam



- Practice and promotion of a critical approach to consumption, socially and environmentally responsible.
- Self-management.

In so far as two of these main pillars – cooperation and a critical approach to consumption – contradict the consumerist society, they constitute a real alternative with political significance. Organising ourselves in matters of consumption is essential, as Michael Renner indicates: ‘The dominance of very individualistic consumption patterns leads inevitably to the multiplication of many goods and services on a large scale. This practically guarantees waste and unnecessary material demands’ (Worldwatch Institute report, 2004).

standing where our food comes from and in what conditions it was produced are essential for us to make responsible decisions. Identifying each stage provides us with data on the sustainability of both product and process; knowing which companies are involved allows us to find information on their social and environmental practices, which makes it possible for us to buy from those which can guarantee more responsible behaviour, both from a social and environmental perspective.

In this sense and especially for fresh produce, local shops are also the best option, because the shop assistants usually know where what they are selling has come from.

Neighbourhood shops

According to the [Centro de Investigación de Información en Consumo](#) (CRIC) (Centre for Consumer Research and Information: in Catalan), we could keep a light bulb switched on for more than 800 hours with the energy we use on a single trip in the car to do the shopping.

In addition, we can support small businesses, favouring the local

economy and establishing closer contact with the seller.

On the other hand, accepting the rules of the game of the big stores (whether they are in the neighbourhood or on the outskirts of the city) involves accepting and ignoring working hours and extremely bad working conditions, which make slaves of those who have to endure them.

Cooperatives and consumer groups

In organic consumer cooperatives consumers meet and have direct contact with producers to buy their food and share responsibilities, promoting a production system which is socially fairer and respects the environment, and avoids the energy consumption associated with adding extra links in the distribution chain. Sometimes they consist of both consumers and producers.

Their three basic pillars are:

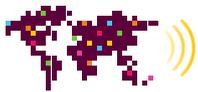
- Access to healthy food and products, with direct relationships with producers, establishing fair relationships, mutual understanding and support, outside the market framework.

Organic food

This is less intensive in its energy consumption than conventional produce. If the food is fresh, locally-produced and seasonal, the energy costs associated with its distribution and maintenance are also reduced and a more humane food system in harmony with the environment is reinforced.



Photo: TabacaleraIavapiés



Fair trade

This is an alternative form of trade promoted by a number of NGOs, social movements and the UN to establish a transparent and fair trading relationship between producers and consumers. It acts as a guarantee to consumers that the products they are buying have been processed in decent conditions, without exploitation, with fair wages and which are marketed without intermediaries or distribution chains which impose abusive rules.

In addition, part of the income from sales is usually devoted to supporting and empowering cooperatives and producer groups.

Fair trade networks work from three perspectives: marketing, aware-

ness-raising and formal complaint, to expose the unfairness of the rules which govern commercial transactions and to set out the role citizens should play in this, contributing in this way to the fair development of commerce.

Not throwing food away

The food we habitually waste corresponds to between 10-15% of the energy used in food production annually. In other words, the waste created by one person consumes around 1,000 MJ of energy every year (Dutilh and Linneman, 2004). If we take this into account, we could cover the total annual electricity consumption of 112,600 Spanish households with the energy contained in the waste generated by

the inhabitants of the city of Barcelona.¹³

Far from just being individual consumers, which is something we are often led to believe, we are active agents, with a critical and informed attitude, and with the ability to organise ourselves collectively; this is the essential formula to be able to construct alternatives to our current food system, alternatives of cooperation, participation, solidarity and mutual respect leading to a fairer, more respectful and lasting relationship with our food, the people who make it possible and the environment which supports it.



Foto: Intermón Oxfam

13. (Engineering without Borders: Asking for the impossible: the food system's unsustainable energy consumption), *ESFeres*, nº 9.

The intention of *Global Express* is to get schoolchildren to question what the mass media organisations tell them. It is about promoting a critical view of reality to allow them to understand the state of the world and, in particular, the situation of the developing world.

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For more information

Magazines

- **Soberanía Alimentaria (Food Sovereignty, in Spanish):** <http://revistasoberaniaalimentaria.wordpress.com/>
- **Opcions (Options, in Catalan) (especially n° 11 y 12):** <http://opcions.org/es/revista>

Articles

- Miren Etxezarreta: "Food Wars" y "El gran robo de los alimentos" (The Great Food Robbery) www.mirenetxezarreta.es/food-wars-y-el-gran-robo-de-los-alimentos/

Films

- **Los espigadores y la espigadora (The gleaners)** Agnès Varda, 2000
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- **Food Inc.** <http://documentaryaddict.com/Food+Inc-2174-documentary.html>
- **El mundo según Monsanto (The world according to Monsanto)** <http://vimeo.com/13096415>

Vídeos

- **Dos tomates y dos destinos (Two tomatoes and two destinations)** www.youtube.com/watch?v=JWwkiaY1yVg&feature=g-logo-xre

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- **GRAIN** www.grain.org/es

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Blogs

- <http://loquehayquetragar.wordpress.com/>
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