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# **Innovation and Food System Sustainability: Public Concerns vs Private Interests**

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# Innovation and Food System Sustainability: Public Concerns vs Private Interests

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## Abstract

The food system negatively affects the environment, human health and the total well being of the society in many ways, causing: soil and water depletion, pollution due to the waste treatments, acid rains, desertification, climate change, ozone depletion and biodiversity loss. The paper endeavors to compare the needs of a sustainable food system with strategies actually carried out at private and public level. It is shown that while the process of trade liberalization is pushing towards market deregulation and decreasing state intervention, corporate social responsibility is very low and unable to tackle the huge environmental problems faced by the food system. The main conclusion of the paper is that the current competitive games played by leading firms are not in any way able to promote the sustainability of the new global food system and that more state intervention is requested in order to reach the goal.

**Keywords:** *innovation, sustainability, local food systems, fresh produce, participatory democracy*

## Introduction

During the last twenty years the food system has undergone dramatic organizational and technological changes. New products, new packages, new logistic formats, new communication policies were experimented together with a strong consolidation of the sector at the global level. Notwithstanding the many claims about the progresses reached in terms of food safety and security as well as of efficiency and of consumer satisfaction, the current globalized food system actually affects the environment and the society in very dramatic negative ways. Pollution, oil dependence, animal welfare, biodiversity loss, risks associated with bio and nano technologies, are only some of the many concerns raised by the civil society in recent times. As a consequence sustainability has become an important goal both of public food policies and of innovation policies carried out by firms at every level of the food chain.

The paper endeavors to compare the needs of a sustainable food system with strategies actually carried out at private and public level. It is shown that while the process of trade liberalization is pushing towards market deregulation and decreasing state intervention, corporate social responsibility is very low and unable to tackle the huge environmental problems faced by the food system. After a short review of possible definitions and practices useful for a sustainable food system, evidence is given of the lukewarm responses by governments and firms. As an example of firms' negligence with respect to sustainability, a case study is presented referring to the Italian food retail sector and the strategies carried out in the fresh produce industry. The main conclusion of the paper is that the current competitive games played by leading firms are not in any way able to promote the sustainability of the new global food system and that more state intervention is requested in order to reach the goal.

## 1. Sustainability: concept and practices

The concept of sustainability is closely derived from the previous definition of sustainable development given by the Brundtland Commission in 1987: “Development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations” (WCED, 1987). Referred to the economic system sustainability means that economic activities should be such as to not deplete environment and natural resources in a way as to compromising future human society’s development.

The concept of sustainability comes from the evidence of the enormous ecological disasters produced by the 20<sup>th</sup> century development model: responsibility for global warming, the destruction of ozone layer, biodiversity loss, and the wide spreading of old and new diseases caused by the growing pollution.

The use of the concept of sustainability in the economic literature is by no means a paradox. A non sustainable development is one where the main economic institution of capitalist economies, the market, has failed in its resource allocation task. Moreover sustainability involves equity (so strictly that the two concepts lay one upon the other), i.e. fair resource distribution among generations as well among individuals and nations (and also in its deep ecology definition, among different forms of life and ecosystems) at the present time. Equity is an issue which is really banned from the orthodox economics because to be addressed it needs value judgments, i.e. ethics, that by definition are not in the agenda of “economic science”.

Environmental economics, built on the track of neoclassical model, addresses environmental problems caused by economic activities as cases of market failures. Standard policy tools for correcting market failures, from market-based to command-and-control types, are suggested in order to comply with adverse environmental effects, but never abandoning the faith in the “divine” capability of the markets to ultimately solve environmental problems in the best way. Some flaw is recognized but is soon masked through “technical” procedures, such as the routines used by scientists and statisticians in risk assessment procedures, or fixing “random” discount rates in assessing economic values of environmental goods, or blindly relying on results of contingent evaluation studies in cost-benefit analysis. In all these cases the fact that somewhere, someone takes decisions about the level of risks that people must bear or the “fair” amount of resources exploited by some group is passed over in silence.

The main property of markets is their capability to coordinate the behavior of independent selfish economic agents in a way as to reach the maximum collective well-being and without having recourse to other institutions. Market failures due to public goods and externalities stem from the uncooperative behaviors of agents. A cooperative behavior is “a behavior through which one agent internalizes some of the externalities she imposes on other users, and refrains her own use below what would maximize her individual profits” (Baland et al., 4, 2007). A cooperative behavior arises or because the agent is not perfectly selfish (showing some preference for equity and/or a reciprocal behavior) whether as consequence of collective behavior, i.e. a coordinated effort to regulate the use of the resource. In the first case the market, even if populated by a new kind of economic agents, still operates as main allocative institution. In the second case new institutions (i.e. the rules stated as result of the collective action) take place. These institutions can be more or less democratic, taking a form consistent with values, habits, and power structures of a community.

When standard economists and policy makers confront the failure of their policies in achieving environmental goals (or because the market based tools were not successful either because the more efficacious command-and-control intervention were not allowed by the liberist political agenda) they appeal to the so called consumer and/or corporate social responsibility. That is consumers and firms freely, voluntary, and independently each from another, should renounce

consumptions and profits in order to avoid adverse effects on society and environment. Striving to achieve sustainability goals relying on social consumer and corporate social responsibility may appear ingenuous (and in a sense it is) but it is instead a demagogic and bad-faith policy. It is easy to understand the limits of social responsibility. On the empirical grounds it is evident that if economic agents would have been responsible we would not have been experiencing a so high resource and environment depletion. On the theoretical ground it is unconceivable to build socio-economic models that simultaneously need assumptions of strong rationality and selfishness and weak rationality and reciprocity; one must choose and choosing the second assumption means to abandon the neoclassical approach, a choice that seems not to be yet in the agenda of the leading economists and policy makers. Moreover accepting the hypothesis of “socially responsible” agents means to accept the idea that ethics stands prior economics and that economic systems cannot be analyzed without a solid ethical theory able to account for those cooperative deliberative behaviors not accounted for by strong utilitarianism (and the associated methodological individualism) implicitly underlying the neoclassical model.

In order to overcome limits and contradictions of the economic standard model, scholars and policy makers genuinely involved in sustainability came to a definition and conceptualization of sustainability that encompasses all the political and ethical aspects beyond the economic ones. Without presuming to give account of the immense literature on the subject, it is anyhow possible to summarize the following aspects on which most authors agree that contribute to a sound definition of sustainability:

- A sustainable society (and economic system) is one able to provide the flow of production and consumption needed to maintain a good quality of life for all humankind, while simultaneously sustaining the local and global environment and biodiversity (Bell, Morse, 2003).
- A sustainable society is necessarily fairly equal. When measuring sustainability equity must be a variable as important as efficiency and ecological indicators (Bell, Morse, 2003; Sachs, 2007; Norton, 2005).
- Moral judgments guiding real sustainability policies do not need to be consistent with universal principles and moral codes. A pragmatic local approach is more appropriate; meaning that depending on the particular community involved in the particular environmental problem a communication participatory process must take place in order to assess goals and tools. Where pragmatism is intended as contextualism and not as relativism (Norton, 2005).
- Although an anthropocentric ethics is more alike to find wide social consensus, biocentric and ecocentric ethics cannot be totally dismissed without compromising sustainability efforts (Haugen, 2007).
- Sustainability can only be attained through a community-based bottom up approach, a real participatory democracy within a community that commits to solving problems cooperatively through deliberation and democratic decision making. (Norton, 573, 2005).
- Sustainability should be a practice more than a theory. Sustainable projects and efforts should respect the learning cycle previously pointed by Hutchcroft (1996): observation and reflection thinking and theory experimentation and implementation engagement and application.
- Sustainable development is the overlapping area among three development dimensions (Bell, Morse, 2003, 4): economic (i.e. economic growth, private profits, market expansion, externalize costs), ecological (i.e. carrying capacity, sustainable yield, resource conservation, biodiversity) and community (i.e. local self-reliance, basic human needs, equity, participation, social accountability, appropriate technology).

One important implication of these elements concurring to the concept of sustainability is that, contrary to what is often stressed in public debates and by state environmental bodies, in struggling for sustainability political problems are more important than scientific and technological problems and these latter are more important than economic problems.

## **2. The current unsustainable global food system**

The food system negatively affects the environment, human health and the total well being of the society in many ways. It uses a terrific amount of fossil fuel to sustain a meat-based diet, a ready-to eat model of food consumption, a devastating system of food packaging and transport. Problems concern either the local level (with soil and water depletion, pollution generated by over-industrialized specialized agriculture and pollution due to the waste treatments), either the global level (with acid rains, desertification, climate change, ozone depletion and biodiversity loss). For instance the impact of the food system on human-induced climate change is calculated to be around 25 to 30% of the total effect. According to the International Food Policy Research Institute, rising global temperatures as well as growing food consumption in rapidly developing countries such as China and India are pressuring the world food system, meaning that food prices will rise for the foreseeable future, making it harder for the world's poorest to get adequate food.

Notwithstanding the huge use of resources the food system also fails in assuring a healthy diet for the majority of the world people. While less developed countries struggle with famine and under nutrition, wealthy countries struggles with obesity, cancers and strokes caused by excess of meat, fats, salt and sugar. Moreover food sovereignty and security is put in danger by the import-based food procurement system pushed by trade liberalization and transnational food companies. Currently in developed countries people are experimented a very foolish attitude towards food expense. While complaining for the rising prices, they throw a large percentage of the food they buy. In UK homes each year around 6,7 mt of food waste is generated, equivalent to a third of food bought, and to 25mt of CO<sub>2</sub> (WRAP, 2007). Most of this food could have been eaten. In the USA the amount of food waste is 50% of the total food bought.

Two important indicators of food system sustainability are the food miles and the life cycle-based indicators.

Food miles refer to the distance food travels from the farm to consumer. This distance has dramatically increased over the last thirty years, due especially to: globalization and the increase in food trade; concentration of food supply and logistic innovation by retailers; centralization and concentration of sales in supermarkets. Rising food miles means rising in carbon dioxide emissions, air pollution, congestion, accidents and noise (DEFRA, 2005, Lucas Mep, 2002).

Life cycle-based indicators account for the energy consumed in a system. A recent estimate by the Center for Sustainable System of the University of Michigan shows that the current US food system requires 7,3 units of (primarily) fossil energy for every unit of food energy produced. The fossil energy is used by the different components of the food chain: household storage and preparation, 32%; commercial food service and food retail, 10%; packaging materials, 7%; processing industry, 16%; transportation, 14%; agricultural production, 21%.

Both the indicators witness the high environmental impact of the food system and call for different kinds of intervention to promote system sustainability, such as: to encourage local production for local consumption, promote organic farming; ban live animal export; end the dumping of export in developing countries; restrict the concentration and market power of major food retailers; eat less meat and prepared food; eliminate food waste; reduce packaging; use biodegradable materials.

The quoted evidences about causes and possible remedies of the current food system un-sus-

tainability clearly show that civil society as well many public and private institutions should cooperate in order to achieve a new sustainable food system. In particular: consumers and citizens are requested to change their life styles and food habits; public bodies at international, national and regional level are requested to regulate production and distribution in order to lower negative externalities; scientists are requested to find out more sustainable agriculture and food technologies; private firms at every stage of the food system are requested to act in a socially responsible way, internalizing negative externalities and investing in innovations specifically targeted towards sustainability.

Compared with the needed interventions, the real policies carried out by the different subjects are by no means insufficient. Two examples are paradigmatic, the EU position and the pro-environment engagement claimed by Nestlè.

In many documents the EU refers to sustainability as a *sine qua non* condition for all its social and economic policies. Even in the declaration (Brussels 23 July 2007) regarding the Lisbona treaty amending the previous constitution, at page 9 in the preamble of the charter of fundamental rights of the Union it is stated: “The Union seeks to promote balanced and sustainable development and ensure free movements of persons, services, goods and capital.” Notwithstanding this emphasis on sustainability not a concrete action has indeed been carried out to promote sustainability. Instead, posing at the first place the competitiveness of European economy and the freedom of private initiative and firms, as well the compliance with the WTO rules, The EU withdraw from those kind of interventions useful to promote sustainability, such as strict market regulations, the impositions of mandatory environmental standards, restraining corporations’ power, stopping the privatization of common goods as water and wild land and so on. The statement introducing the REACH (regulation 1907/2006) is a good example of this contradictory attitude of the Union: “The purpose of this regulation is to ensure a high level of protection of human health and the environment.....while enhancing the competitiveness of Community industry”. In other terms the EU philosophy is “market (i.e. firms’ profits) first and society and environment after”. This sharply contrasts with the warnings expressed by the UNEP in its last Global Environment Outlook (GEO4). GEO4 presents four future scenarios to the year 2050 based on four different policy approaches and societal choices at both global and regional level: market first, policy first, security first, sustainability first. The best strategies for achieving environment and social goals (an equally distributed increase in living conditions and perceived well-being by the world population) are sustainability first and policy first, while the worst is security first. The choice market first entails a high rate of economic development but with growing inequalities inter and intra states and a rapid environmental change straight to the “end point”, i.e. the point that puts at risk the survival of future human generation (GEO4. 2007, pp. 430-486).

With regards Nestlè, the corporation is an outstanding example of the bogus social responsibility trumpeted by the most powerful firms in the world. It is sufficient to look at the self-presentation of “Nestlè as a sustainable business” that the company offers in its website. The most innovative concrete policy that Nestlè shows up is the removal of the inner plastic sleeve from Kit-Kat Bumper packs in order to reduce plastic waste. Now, considering that Nestlè owns a large share of the world market of mineral water in bottles, that is the most powerful profit-making and polluting sector of the food industry, the claim on the inner kit-kat plastic is outrageous and ridiculous. The sales for bottled water in the world are estimated to be around \$100 billion (US). In 2006 a person in Italy purchased about 184 litres in average. Only 10% of all plastic bottles are recycled. The manufacture of every ton of PET produces around 3 tons of carbon dioxide. It takes 3 to 5 litres of water to produce 1 litre of bottled water. It takes around 3.4 megajoules of energy to make a typical one-litre bottle, cap and packaging. To all of this energy waste one must add energy use and pollution associated with transportation and waste disposal and treatment. Notwithstanding its large contribution to this eco-disaster Nestlè cheats on con-

sumers and civil society claiming its virtue in reducing the plastic in kit-kat while continuing to spend a huge amount of money in advertising persuading people to drink only bottled water.

### **3. A case study: (un)sustainable procurement strategies in the Italian fresh produce sector**

The Italian fresh produce market is a good example of how the restructuring and the globalization of the food system is jeopardizing local sustainable food systems. Italy is a net exporter of fruit and vegetables. Historically production was primarily directed to the nearest wholesale markets which supplied the local network of small retailers. Some large producers supplied foreign markets (traditionally Germany and Switzerland) through specialized intermediaries. During the last 15 years, due to the restructuring of the retail sector, the producer-consumer distance has dramatically widened, with much more energy and environmental depletion embedded in the final product. Large retailers want products from everywhere to be supplied to their national and regional distribution centres from where packaged and conditioned products are managed to optimize stores' procurement policies. Low prices and handling and logistic facilities are the key elements on which supermarkets choose their suppliers.

Currently, in Italy the fresh produce market exhibits a polarized structure, with the 70% of the market dominated by few large chains of supermarkets and the remaining part of the market covered by the "so-called" traditional retailers, i.e. small specialized retailers located in residential areas and in the traditional food trade centers of towns. Strategies carried out towards customer and suppliers by supermarkets do not promote sustainability, being characterized by high distance suppliers, standardized productions, power relationships and technology-intensive innovation policies. On the contrary traditional retailers are integrated in high sustainable local production-consumption systems, characterized by local small suppliers, high product variety, trust-based relationships and innovation policies aimed to restore traditional sustainable production processes and food styles, more than to experiment new bio and nanotechnologies. Notwithstanding its high performance in term of sustainability and consumer satisfaction, the traditional sector is very likely to be forced to exit the market in future, due to the aggressive competitive behaviors of supermarkets and to the lack of state intervention in the field of environment protection.

The effects of the reorganization of the sector have been: higher prices for consumers, lower prices for producers, large import fluxes from "low-cost" countries, less fresh products, more packaging and waste, more food miles, more fuel and air pollution, more carbon dioxide.

During the last year a research, financed by the Italian Minister for Agriculture, has been carried out at the Training Center for Agriculture Research in Portici in order to assess the competitive strength of Italian farmers in face of globalization and restructuring of the fresh produce market. The idea underlying the project was that Italian farmers could benefit from retailers' policies fostering high quality environmental friendly products. In such a way the re-localization of procurement, long period contractual relationships, and relational marketing policies, could add value to the whole chain, with fairly shared benefits for all the actors: farmers, retailers and consumers. As part of the research project a questionnaire was submitted to fresh produce procurement managers of the first four Italian supermarket chains (currently, about 55% of the Italian grocery market is covered by 5 groups with the following shares: Coop Italia 17,1; Carrefour Italia 10,4; Auchan, 9,6; Conad, 6; Esselunga, 8,3) containing questions about suppliers, contractual arrangements, quality standards, logistic, innovation and sustainability oriented policies. Answers, hereafter summarized, offer a straight look to the real interest large retailers shows up with regards environment, social responsibility, and business fairness.



**Table 1.** Large retailers: procurement policies and environment sensitivity (four respondents, the number of crosses refers to the number of affirmative answers)

<i>Statements</i>	<i>Nu. of aff. answ.</i>
Between 75 and 70% of the total sales is supplied by Italian farmers	****
Short term contract are preferred to long term and relational contracts	****
Foreign suppliers are preferred to the Italian ones because of low price and better logistic	****
Exclusive use of own centralized logistic platforms	****
No particular certified quality standard is requested	****
Special protocols there exist for own private label products	****
Italian suppliers do not meet retailers' quality and cost needs	**
There is no interest for local suppliers; product standardization and low cost are our primary interest.	****
Request for more product differentiation	****
Differentiation requisites based on environment and fair trade certification have not appeal towards	****
Successful differentiation requisites are based on convenience (time saving and ready to eat) and	****
Consumers are no longer interested in organic products	**
I feel committed to ethical principles and social responsibility	*
The company is carrying out at least one project aimed to environment protection and social needs	*
The company is carrying out more than one project aimed to environmental and social needs	*
Knowledge and use of life cycle assessment and investments in waste reducing	*
Awareness of food miles and CO2 emission from the food sector	*
Retailers should be committed to promote healthy food styles and habits	*
The food sector needs innovative solutions to reduce waste and pollution	*

This short list of statement (dis)agreed by the interviewed procurement managers allow for a quite sad picture of retailers' engagement for a sustainable food system. The sustainability topic is not at the top of the agenda of retailers' strategies and interests. Also there is a very weak awareness of the environmental impact of food chains and of the possible technical and organizational solutions able to tackle it. These results are consistent with the current structure and strategies of the retail sector. Worldwide the sector exhibits a vertically differentiated oligopolistic structure (Ellickson, 2006; Hingley, Sodano, 2007) very similar to the natural oligopoly type (Shaked, Sutton, 1983). During the eighties and the nineties the consolidation process in this industry has been driven by the introduction of innovative automated distribution and procurement systems. Heavy sunk costs associated with innovation and differentiation efforts worked as barriers to entry and thus fostered high concentration rates, high profits, and high buying/market power.

Globalized supermarket chains fully participate in the currently winning model of "shareholder capitalism" (Levine, Zervos, 1998; Davies, Marquis, 2005; Flingstein, 2001) where short term policies aimed at stock value maximization make financial assets more important than productive and technological assets. Moreover the "shareholders first" dogma weakens the commitment towards other stakeholders, among which suppliers, customers and the whole civil society. As recently stressed by Gallino (2005) the shareholder capitalism, along with the globalization of stock market and the death of welfare states, constitutes an economic-institutional framework which actually rules out any form of genuine Corporate Social Responsibility and that therefore is absolutely unable to promote sustainability and interests of the society at large. Inter-firms and intra-firm extremely competitive behaviors are at odd with the cooperative attitudes and the democratic participatory processes required by sustainable development processes (Sodano, 2007b). Risky long term investments in environment friendly technologies find no place in short-term profit maximization philosophy. Equity concerns are as well impossible where competitive advantages are attained mainly through the exploitation of the weakest links in a net-

work of asymmetric power relationships among firms and between each firm and its stakeholders. The interviewed managers of the four Italian leading food retailers have all stressed the importance of sharp, fast and tough moves in the “live-or-die” competitive games of the globalized food markets. Squeezing suppliers’ margins, workers’ wages and the wallets of the customers with low demand elasticity is still the more popular “making-profits” device recognized by these managers.

### **Concluding remarks**

The current global food system is unsustainable in many ways: it relies upon a disproportionate use of non-renewable sources of energy; it dramatically contributes to global warming and to the depletion of primary resources as land, water and biodiversity; it pollutes the environment through chemical residues from production and waste disposal and treatment processes; it does not assure food safety and food security of current as well of future generations. So far in modern capitalist societies the neoliberal faith have made all these problems been addressed mainly through the lens of economics, namely of standard economics. As explained by scholars addressing sustainability from wider socio-political and philosophical perspectives, standard economics has no answers with regards the ways through which a sustainable development can be attained. Environmental problems, and thus sustainability, can be reduced at least to the basic problem of public goods, which are not “efficiently” provided by the market. When market, i.e. the free voluntarily exchange between utility-maximizing independent rational actors, is not able to allocate a resource (i.e. to transfer the resource from an actor/user to another), there remain two basic means by which the task can be accomplished, gift-giving or power. In the case of gift an actor gives spontaneously something to someone without receiving anything back. In the case of power one actor commands another actor to give her/him something without rewards. In both cases the basic assumptions of the standard model do not hold. Selfish independent free actors must be substitute with (partially) altruistic, interdependent, constrained actors. As a consequence moral judgements and conflicts (and thus politics) must be taken into account in order to analyze resource allocation (i.e. economic) phenomena.

Standard economists and policy makers relying on them, in a way are aware of their failure but do not seem taking it really seriously. They indeed suggest as remedies of market failures gifts, made by social responsible consumers and/or firms, or power, in the form of statutory regulations. Nevertheless they do not investigate how much the hypothesis of cooperative gift-giving actors is at odd with the basic assumption of their economic theory; nor investigate the political processes behind state intervention. A serious investigation of these issues would lead them to recognize that public goods problems do not need economics but moral philosophy and politics to be resolved. As argued by Sagoff (2004) standard welfare economic lead to a dangerous paradox when addressing problems of public goods. On one side it demonstrates that market failures are pervasive in economic capitalistic systems and call for state intervention in the form suggested by Pigouvian and/or Coasian approaches. On the other side welfare economics does not offer solution to the problems of state failures previously suggested by Stiglitz (1989). “One bias of economic analysis is to conflate beliefs with benefits, that is, to assimilate the moral and aesthetic judgments people defend on the merits with the consumer preferences they may pay for the margin. By misconstruing ethical beliefs as economic benefits and elaborating arcane methods to measure these so-called intangible values, economic theory tries to price moral attitudes and judgments that are inconsistent with its own assumptions.” (Sagoff, 2005, p. 13).

What economists and policy makers should recognize is that public goods problems, and thus sustainability, are all about politics and moral philosophy. Since the organization of western society strongly rely on laical constitutions stating deliberative democracies, politics should be

primarily questioned when addressing sustainability, at least when economics fails. A wise perspective is to decide, on a case-by-case analysis, which environmental problems are to be resolved by a market, and which by a political process, and to design appropriate institutions when the existing ones are not effective. In the political problem-solving approach, the goal of welfare maximization is meaningless. The point of democratic deliberation is not to maximize satisfaction, but to match rules to recognized situations, through a process of negotiation and collaboration among the members of the society, where the search for shared intentions constitutes the basis of democracy.

Summarizing, the first step for approaching sustainability problems is to clearly separate economic and political spheres. The second step is to improve processes of deliberative and participatory democracies within societies. Unfortunately both these tasks are hampered by the global capitalism of the 21<sup>st</sup> century and the associated free trade and neoliberal policies.

In the case of the food system in the EU there has been the withdrawal of the state from direct intervention and regulation, an example of which has been the shift from public to private standards and certification (Sodano, 2007a). Between gift-giving and power as means to approach public goods problems, European policy makers clearly chose the first, offering citizens (that in their view are nothing else than consumers) the deceitful image of socially responsible firms. As argued in the previous paragraphs, firms are not only indifferent to social problems, but are prone to cheat and exploit their stakeholders as far as these behaviours can make their pockets filled in with fresh money. Compared with the overwhelming environmental problems produced by the food system, public intervention is incredibly weak. A paradigmatic example is the case of the emergence of children obesity and malnutrition. Instead of strictly regulating advertising and taxing low-cost low-quality junk food, the EU has launched a programme, called the EU Pledge (that is part of the EU initiative on diet, physical activity and health set up in 2005 by the EU health and consumer protection commissioner), which simply calls for a voluntarily best practice model of self-regulation drawn up by firms. After a big deal of begging and negotiation (and public money invested in the task) in 2007 a group of 11 companies, which represent more than 50% of the food and beverage advertising spend in the EU, have agreed to stop running junk food ads on TV, in print and on the internet to under-12s by the end of 2008 and have agreed to have independently verified monitoring of their reduction in marketing, from January 2009. That is a very weak response to an important health problem.

An example of how friendly environment practices do not emerge without a statutory obligation is the case of food packaging waste. The global food packaging industry is now worth \$100bn-a-year, and is growing 10-15% each year. Anything between 10% and 50% of the price of food today can be down to its packaging. As the amount of produced rubbish increases, financial and environmental costs to the whole world also increase. Notwithstanding these figures nothing has been made by food manufacturers and retailers in order to cope with the problem. Something has started to move only after the EU's Council Directive 94/62/EC on packaging and packaging waste. In the UK, the UK Packaging Regulations 2007, set out to comply with the EU Directive, has made packaging reduction become a key initiative for the food and grocery sector. So far leading retailers has taken the following packaging reduction initiatives: ASDA, 25% reduction in own-labelling packaging by 2008; Morrisons, use 15% less own brand packaging by 2010; Sainsburys, 5% reduction in packaging by 2008; Tesco, 25% reduction in own-label and branded packaging by 2010; Marks & Spencer, 25% reduction in packaging by 2012. Concluding, food system sustainability in modern capitalist societies can be only attained through political resolutions of capital-environment (and labour-capital) conflicts, that means the creation of adequate rules to govern firms, markets and exchanges. As long as these rules stem from a process of participatory democracy within communities, equity and justice along with efficiency and efficacy are going to be assured. Instead strategies carried out by multinational corporations and the new global capitalist class are producing the erosion of nation-state demo-

cracies and, turning citizens into customers, are depriving societies of the basic tools with which to tackle sustainability problems.

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