

RESPONSES TO FOOD WASTE IN A SHARING ECONOMY: WE HAVE FULLY TRANSITIONED TO A PARTICIPATORY CULTURE, AND DIGITAL TECHNOLOGY IS KEY DRIVER OF THAT TRANSITION¹**RESPOSTAS AO DESPERDÍCIO DE COMIDA EM UMA ECONOMIA COMPARTILHADA: HOVE TRANSIÇÃO TOTAL PARA UMA CULTURA PARTICIPATIVA, E A TECNOLOGIA DIGITAL É O PRINCIPAL MOTOR DESSA TRANSIÇÃO****Lucia Polackova²
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The article discusses on the needs to find solutions to waste in general and to food waste in particular in a legal perspective. The analysis starts with some reflections on the need to refresh the expressions used in this new area of research, as well as to coin new terms that might support the legal scholarship and the policy makers.

A relevant part of the work is dedicated to the analysis of virtuous models of sustainable development, where three key elements play a pivotal role: the mechanisms of a sharing economy, the new actors in curbing consumerism and waste; the participatory dynamics governing their actions.

Keywords: Sustainable Development; Sharing Economy; Case Studies; Participation; Virtual Food Banks.

Resumo

O artigo discute a necessidade de encontrar soluções para o desperdício em geral e, em particular, para o desperdício de comida numa perspectiva jurídica. A análise começa com algumas reflexões sobre a necessidade de atualizar as expressões utilizadas nessa nova área de pesquisa, bem como para cunhar novos termos que possam apoiar a bolsa de estudos e os formuladores de políticas. Uma parte relevante do trabalho é dedicada à análise de modelos virtuosos de desenvolvimento sustentável, onde três elementos-chave desempenham um papel central: os mecanismos de uma economia de partilha, os novos atores na contenção do consumismo e do desperdício e as dinâmicas participativas que regem suas ações.

Palavras-chave: Desenvolvimento Sustentável; Economia de Partilha; Estudos de Caso; Participação; Bancos Virtuais de Alimentos.

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INTRODUCTION

The quantity of food that we daily sacrifice to feed our ego is impressive. When we go to supermarket and we see the shelves full of coloured boxes, packages, fruit and vegetables, our minds blow up and we feel that we are surrounded by abundance. This is just an illusion, for there is no abundance there, since one third of abundance makes the garbage bin overflow.

Coping with food waste is undeniably one of the biggest challenges of this century. It has been estimated that 1.3 billion of food is wasted or lost annually along the food supply chain (from agriculture through processing to consumption), meaning that about one third of food that we produce each year is never eaten.⁴ Numerous studies have reported that food waste has significant consequences for the social and economic aspects of our daily lives as well as a dire impact on the environment.⁵ Not only has the need to reduce food waste been stressed at international and EU level but also important initiatives have been taken by non-state actors. The primary objective is to divert food from landfills and at the same time feed the hungry. In order to achieve this, the creation of food surplus should be prevented in the first place by measures such as raising awareness among consumers, adoption or revisiting of laws and regulations concerning food safety and waste management and adapting food supply to the actual demand. However, once surplus food has been produced, the best solution is to redistribute it to those in need or use it for animal feed.⁶

This article will try to find solutions to the rising emergency of food waste.

The first part will be dedicated to a lexical clarification, because the first challenge originates from the need to reach accuracy and precision in the legal definitions. Language has the power to convey messages and the legal language has a double strength in this regard, since its message does not only communicate thoughts, but it is also translated into binding rules.

For this reason, particular attention shall be paid to the compilation of a technical glossary, explanatory of terms and expressions used by legal scholars in a developmental perspective. The first concept worthy defining is “sustainable development”, which has a historical background and

⁴ Jenny Gustavsson, Christel Cederberg, Ulf Sonesson, et al., *Global Food Losses and Food Waste* (Rome: FAO 2011), at p. 4.

⁵ *Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security* (Rome: CFS HLPE 2014), at pp. 32-34.

⁶ Effie Papargyroupoulou, Rodrigo Lozano, Julia K. Steinberger, Nigel Wright and Zaini bin Ujang, “The food waste hierarchy as a framework for the management of food surplus and food waste”, *76 Journal of Cleaner Production* (2014), pp. 106-115, at pp. 112-114.

plays a key role in directing environmentally oriented policies. Further areas where an epistemological shift might have tangible effects cover: (i) the target of protection (i.e. the individuals that shall be better defined as food sharers or mindful individuals rather than consumers); (ii) the mechanisms of participation (via networks in a multi-layered perspective rather than in a hierarchical way) and finally (iii) the effective participation of the actors involved.

The second part of the article will illustrate a few virtuous examples of a sustainable progress curbing the shortcomings of the consumer culture. *It will highlight a revolutionary way to tackle food surplus redistribution and the increasing role of individuals in the operation of virtual food banks.*

The third part will scrutinise the three domains where the change is already in place: networks have replaced the archaic systems of a top-down decision-making process; individuals have found effective ways to overcome waste and consumption; the culture of participation can be further enhanced to effectively protect the environment.

A path forward to the critics will lead the article to an end.

THE SHARING ECONOMY AND ITS RULES

The dictionary of sustainability

Moving from a perspective of consuming finite resources to effectively sharing the unused ones, requires a shift in mentality and therefore a change in terminology.

The first step in this epistemological process consists in defining the term “sustainability”, as the matrix⁷ definition from where all the other legal terms derive. From the literature on this concept, we come to know that the term has followed an evolution: coined in the Brundtland Commission’s report on the global environment and development in 1987, was then defined oxymoron⁸. Thanks to the Brundtland Report (named after its Chairperson, the Norwegian Prime Minister at the time), the term passed into policy discourse and then into everyday language. The

⁷While researching on the applications of the term “matrix” to the concept of sustainability, I came across some technical definitions of matrix sustainability, such as the strategy proposed by Sustainable Land Development International (SLDI) for sustainable business and land development best practices implementation. It is officially called “The Sustainable Development Matrix” and it consists of a comprehensive green development strategy. See <http://www.ethosolutions.org/green-development-strategy-the-sustainable-development-matrix/>. Accessed in December 2015. The term I used do not have the intention to reproduce that technical concept, though it has common grounds.

⁸M. R. Redclift, “Sustainable Development (1987-2005) - An Oxymoron Comes of Age”, 3 *Horizontes Antropol.* (2007), at p. 65.

concept developed further afterwards, by including non-human species and their rights and opened up the way for Non Governmental Organisations (NGOs) which play an active role in protecting the environment, up to the culminating point of the first Earth Summit in Rio de Janeiro in 1992.⁹As Jonathan M. Harris reminds in his paper, from the term sustainable development one can derive three essential aspects: the economic feature, the environmental feature and the social feature.

1. Economic: An economically sustainable system must be able to produce goods and services on a continuing basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances which damage agricultural or industrial production.
2. Environmental: An environmentally sustainable system must maintain a stable resource base, avoiding over-exploitation of renewable resource systems or environmental sink functions, and depleting non-renewable resources only to the extent that investment is made in adequate substitutes. This includes maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources.
3. Social: A socially sustainable system must achieve fairness in distribution and opportunity, adequate provision of social services including health and education, gender equity, and political accountability and participation.¹⁰

In this regard, the old terms of consumption economy shall be replaced by the terms collaborative or sharing economy. The source of the concept comes from the book of Rachel Botsman and Roo Rogers, who describe this idea by providing examples such as the decision to opt for a new lifestyle, for sharing rather than consuming, for trusting and relying on other people's good faith.¹¹

Similarly, the term "consumer" contrasts with the concept of sustainability, for evoking the consumerism as a culture where social status, values, and activities are centred on the consumption of goods and services. The words that better fit the idea of a sustainable development are "sharing individuals", and they have already a practical impact in the food sciences domain, when we think at initiatives such as Foodsharing.de, extremely active in Germany

⁹Ibid., 66.

¹⁰J. M. Harris, Sustainability and Sustainable Development, International Society for Ecological Economics, Internet Encyclopaedia of Ecological Economics, February 2003, in <http://isecoeco.org/pdf/susdev.pdf>. Accessed in December 2015.

¹¹ R. Botsman, R. Rogers, *What's Mine is Yours. The Raise of Collaborative Consumption* (New York: HarperCollins Publishers, 2010). See the comments of A. Dabrowska and K. Gutkowska, "Collaborative consumption as a new trend of sustainable consumption", 14 (2) *Oeconomia* (2015), at pp. 39-49.

and Austria. The need to undertake a change in attitude and mentality is suggested by Clive Hamilton: he underlines how the emergence of a new ecological consciousness will depend not so much on a change of beliefs and attitudes, but on the emergence of a new sense of self and on the relationship between the self and the natural environment.¹²

Another domain which requires a new epistemological approach is the one covering the good administration principles, with the participation at its core. The participatory approach, which has happily accompanied the development in the democratic instances, shall now be re-thought in the light of an effective cooperation between the parties. Participation shall be the means, not the purpose: if the idea of transparency has successfully impacted the legal cultures of the EU Member States in many respects, it is also true that this participation has been confined in the realm of the procedural rights' conquer, rather than effectively tapping the substance of an effective protection. On the contrary, the participatory approach shall serve the purpose of a substantive protection of environmental rights: in one side, it shall help creating fundamental rights for the weak parties (the endangered Planet Earth at first); on the other side it shall support the idea that the individuals follow a self-regulatory attitude, by consciously taking responsibility of their behaviour.

Technology to the rescue

It's after closing time. Today the bakery in the suburbs of Milan didn't sell much and but the elderly owner does not seem worried at all. She takes out his smartphone, quickly types something in on a new application she has recently downloaded and in 10 minutes a small van pulls to a stop in front of the bakery. A young man from the next-door non-profit jumps off the car and enters the shop with huge bags. His mission is clear: save the bread. The baker helps him to pile up the unsold loaves in the van, knowing that tonight or tomorrow they will feed many hungry mouths in her neighbourhood. Just a year ago, the destiny of unsold bread would be terrific: rotting in the landfill. But not anymore.

The new application called "Breeding", started by young people in relation to EXPO 2015,¹³ helped reduce much bread waste in Italy. The non-profit start-up operating as a digital platform and a mobile application was set up with the purpose of redistribution of bread from retailers and catering services as a reaction to the tremendous bread waste. Indeed, every day 1.300 tons of

¹²C. Hamilton, "Consumerism, self-creation and prospects for a new ecological consciousness", 18 *Journal of Cleaner Production* (2010), at pp. 571-575.

¹³<http://breeding.foundation/>

bread are wasted in Italy, which is almost 20% of bread produced daily.¹⁴ Breeding connects bread retailers with charity organisations by means of alerts operating on the basis of the geo-localization service incorporated in the application, which guides the associations to the closest retailer. This allows them to save both time and money spent on transportation and has a smaller footprint on the environment.

A new trend in managing surplus food redistribution: virtual food banks in sharing economy.

Indeed, a new revolutionary trend has emerged in food surplus management, as smartphones spread widely among the population, building the grounds for sharing economy. There has been a boom of websites and mobile applications which facilitate redistribution of unmarketable food and encourage food sharing among consumers by enhancing a direct connection between food donors and beneficiaries. These technologies seem to be an efficient tool not only in reducing food waste but also in fighting hunger. Thanks to their efficiency, they are gradually overcoming the traditional food bank system.

In Italy, where food waste costs €13 billion each year¹⁵ and where food donation is encouraged by the Good Samaritan Law,¹⁶ numerous websites and mobile apps have been created with the purpose of further facilitating surplus food management. Recently a study has been carried out to analyze and assess the role of web-based technology in reducing food waste. The study examined and classified eight web and mobile platforms operating in Italy. It follows from the

¹⁴Vittoria Iacovella, "Moltiplicato e buttato via: lo scandalo quotidiano del pane", 23 April 2014, in http://www.repubblica.it/fischiailvento/2014/04/23/news/pane_lo_scandalo_quotidiano-84243278/. Accessed in December 2015.

¹⁵Alessandra Magliaro, "Sprechiamocibo? Il doppio di quello che pensiamo. Rapporto Waste Watcher", 16 October 2015, available on the Internet at: http://www.ansa.it/lifestyle/notizie/societa/best_practice/2015/10/13/sprechiamo-cibo-il-doppio-di-quello-che-pensiamo.-rapporto-waste-watcher_22c5502b-b86d-417e-b618-720d39aaf1ae.html (last accessed on 6/12/2015).

¹⁶ Law No 155 of 25 June 2003 relating to the regulation of the distribution of food products for the purpose of social solidarity. This revolutionary law establishes a legal framework in which non-profit organisations redistributing donated food are treated as final consumers in line with Recital 13 of Directive 2011/83/EU on consumer rights, thus facilitating the donation of food. The application of this provision is limited to free distribution of food to the most deprived and to charity purposes. It entails the reversion of burden of proof, meaning that it is for consumers to check if the food they receive from a food bank is safe for consumption, which perfectly fits in the context of sharing economy. However, this does not imply lower protection of the health of consumers. The so-called Finance Law sets out food safety obligations for non-profit organisations, including food banks, with regard to the adequate state of preservation, transportation, storage and use of food in line with EU Regulation 852/2004 on the hygiene of foodstuffs. See Article 1(236) of Law No 147 of 27 December 2013 relating to the provisions for drawing up the annual and pluriannual budget of the State.

outcome that there has been a shift from the traditional food donation schemes to the phenomenon of so-called quasi-food-banks, which can efficiently redistribute surplus food to those in need.¹⁷ Given the specificity of the subject, I will refer to virtual food banks rather than to quasi-food-banks in this article, since the former describes the new idea more accurately.

The emerging trend of virtual food banks can be better illustrated on the first non-profit, food-sharing association in Italy known as “IFoodShare”.¹⁸ Established in 2013, one of its main tasks is to organise and manage the distribution of food products donated by private persons, associations and retailers to the most vulnerable or disadvantaged people. Operating as a web platform, it enables small and big retailers, producers and consumers to exchange surplus food. The users of the website can offer so-called food baskets by publishing announcements about food they intend to donate. In order to request the given food basket, other users can directly contact them by means of an internal email system and make an appointment to pick it up. In this case, the platform’s responsibility for food safety of products is ensured by the requirement to indicate the use-by date in the announcement.

Legal issues related to virtual food banks.

The two examples of web-technologies illustrated above raise the issue of liability of these organisations. It could be claimed that the virtual collection of food by the platforms makes IFoodShare and Breeding virtual food banks. Food banks normally fall within the scope of the food business operator under Regulation 178/2002 on the general principles and requirements of food law (“General Food Law”). Article 17 sets out an obligation for food business operators (“FBOs”) at all stages of production, processing and distribution to ensure that foods they place on the market is safe and compatible with traceability and hygiene rules. For this purpose, a food business operator means the natural or legal persons responsible for ensuring that the requirements of food law are met within the food business under their control.¹⁹ According to the Commission, food

¹⁷ Chiara Corbo and Fabio Fraticelli, “The use of web-based technology as an emerging option for food waste reduction” in LeireEscajedo San-Epifanio and Mertxe De RenobalesScheifler (ed.), *Envisioning a future without food waste and food poverty: societal challenges* (Wageningen: Wageningen Academic Publishers 2015), pp. 133 *et seq.*, at p. 139.

¹⁸ <http://ifoodshare.org/>

¹⁹ Regulation (EC) No 178/2002 of the European Parliament and of the Council laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, OJ 2002 L 31/1, Article 3(3).

banks fall within the scope of this provision.²⁰ It therefore follows that food banks have a duty of care towards consumers.

However, the issue with virtual food banks is that they hardly handle food in a direct manner. Neither the Hygiene Regulation nor the General Food Law address this situation. Regulation 852/2004 specifies that its provisions apply only to undertakings, the concept of which implies a certain continuity of activities and a certain degree of organisation.²¹ Yet it is unclear what is meant by the requirements of “a certain continuity of activities” and of “a certain degree of organisation”, which, if satisfied, could exempt virtual food banks from responsibility for meeting hygiene rules. These concepts are better defined in Regulation 1169/2011 on the provision of food information to consumers, which explicitly exempts from its application undertakings occasionally handling with food.²² This provision excludes the liability of virtual food banks with regard to provision of food information. Moreover, if applied to the context of the Hygiene Regulation, quasi-food-banks might not be held responsible for the hygienic state of food products they recover by means of their digital platforms. Consequently, the responsibility seems to rest with the food donors and/or the consumers in the logic of sharing economy.

THE FOODSHARING EXPERIENCE IN GERMANY.

Germany went even further in the technological evolution of solutions to tackle food waste by putting into place a well-functioning foodsharing system in its proper sense.

It's 7.35 pm, all the shops' shutters are closing down and there the groups of food savers and sharers start its job, in many different cities and towns in Germany. Equipped with extra boxes, shopping bags and baskets, the well-organised, yet pacific army of food savers and food sharers will collect all the food that is going to expire that very day and will distribute it among their family members and friends.

This is made possible thanks to a non-profit website and a group of highly-motivated and inspired people who are willing to support the idea of commonality: the foodsavers, acting as

²⁰ European Commission, “Réponse donnée par M. Kyrianiou au nom de la Commission”, 13 December 2004, available on the Internet at :http://ec.europa.eu/food/food/foodlaw/guidance/1reply_fr.pdf (last accessed on 4 December 2015).

²¹ Regulation (EC) No 852/2004 of the European Parliament and of the Council on the hygiene of foodstuffs, OJ 2004 L 139/1, Recital 9.

²² Regulation (EC) No 1169/2011 of the European Parliament and of the Council on the provision of food information to consumers, OJ 2011 L 304/18, Recital 15.

coordinators of the foodsaving and sharing initiative, and the foodsharers, acting as a peaceful army of food collectors.

Joining this community requires a high degree of commitment, since there is a questionnaire that needs to be answered and rigorous rules to comply: under the supervision and constant support of the foodsavers, the foodsharers monitor online the situation of shops, retailers, big supermarkets acting in her/his area and declares that s/he will pick up the food at a due time.

A well-built system of responsibility has been put in place.

On one hand, the foodsharers are obliged to fulfill their commitments to pick up the food and in case of impossibility, they have to promptly inform their coordinator and find a substitute. On the other hand, all the users sign up a legal agreement, where they exempt the food business operators from liability for the further use of the food and they commit themselves to distribute the food without charging the recipients of the distribution.

Background information: some facts and some benefits of the foodsharing.de platform.

The original idea for a platform against food waste originated in the summer of 2011, during the preparations for the movie *Koste den Abfall* (in English *Taste the Waste*) between the director Valentin Thurn and the head of the social media campaign for the film, Sebastian Engbrocks. A parallel activity was developed in early 2012 by the students Thomas Gerling and Christian Tenth and the two initiatives merged in one unique approach. The start up capital had been collected via crowdfunding, another excellent example of sharing resources, at startnext.de and the final capital of 11.594 euros from 394 supporters was considered sufficient to financially support the initiative. The platform has grown exponentially in two years, and in February 2014 counted more than 35.000 active users. Moreover, statistics show that in 18 months 40 tons of food have been given away via the network.

In sum, the system seems to be extremely efficient: it involves the participants in a proactive way, since they have to commit themselves to collect food at the right time. It is a social self-regulatory tool, based on a strong sense of solidarity and efficiency: the participants are encouraged to share their opinions online, to rate the food and the efficiency of the system.

MAJOR BENEFITS OF SHARING.

The logic of sharing implies that less services and goods are produced and wasted. An amazing achievement, that connects us to the times of the bartering system, with a set of at least five benefits. First, bartering helps to save money, for unwanted assets and extra time can be bartered. Second, it curbs consumerism, with its core idea to shift from the shopping mentality to the swapping advantages. Third, it has a social impact, since it fosters the idea of connecting people and helping each other by exchanging skills and services. Fourth, it helps, through the geo-location system in technological devices, to leave a smaller environmental footprint and to get maximum utility out of unwanted possessions. Last but not least, it contributes to a general feeling of cleanliness.²³

LEAVING BEHIND THE CONSUMER MENTALITY AND SHIFTING TO THE NEW PARADIGM

Networks and not pyramids

This study on the virtuous effects of the sharing economy meets the expectations I have longed for as scholar in different research fields.

When studying the regulatory tools adopted in a multilayered system (as the one of the financial markets, as well as the environmental protection and food safety), I have supported the idea of a participatory democracy through networks, ascertaining how the development of our global village has required the developments of new rules, based on networks rather than on hierarchical systems, grounded on transparency and efficiency rather than on top-down approaches.²⁴ I have defined the global village as a beautifully fitting oxymoron, suggesting that the community, united by the speed of trade and communication, takes on the dimensions of a village. This expression became extremely widespread with the emergence of new technologies (first and foremost the internet, and here the idea reappears as communication through a reticular or network system). In this sense, applied it both to describe how the huge world has shrunk to an easily explored domain similar to a village, and also to indicate how each village within the world has destroyed its borders. Finally, the words “globalisation and globalise” only appeared in

²³See <http://www.swapsity.ca/img/pdf/SunMedia.SwapSity.100403.pdf>. Accessed in November 2015.

²⁴M. Poto, “Environmental Regulation in China through the lenses of the European Model”, *Asia Pacific Journal of Environmental Law*, APJEL, Wolters Kluwer, December, 2015.

academic language from the mid 1980s.²⁵ The world has become a global area, where players, be they individuals or communities, interact free of the barriers of territorial borders. They exercise their choices without any limits.

The International community, and European society are, in fact, societies of individuals, or simple citizens in a supranational public place, perceived as an extension of the private domain. Nations, like individuals, do likewise. Hence the future of globalisation depends on the skill of both individuals and nations in contributing to the opening up of choices and of integration.

The platform of the food sharing, as well as the other cases illustrated above, clearly show that the decision-making process is no more only in the hands of the public authorities (at the top of the pyramid of the decisions), but it is rather the result of a participatory methodology which uses the network system at its best. The reasoning in terms of network is at the basis of the definition of collaborative economy, as the economic system of decentralised networks and marketplaces that unlocks the value of underused assets by matching needs and haves, in ways that bypass traditional middlemen.²⁶

From consumers to sharing individuals

“Downshifting” is a word that captured my attention while questioning consumerism. It has been used by Clive Hamilton, to describe the voluntary decision to reduce income and consumption. Hamilton defines this new category of aware individuals as “voluntary simplifiers and cultural creatives [...]” that “are not for the most part motivated primarily by philosophical concerns but by a desire to attain more balance in their lives”, choosing for moderation and frugality rather than for consumption and wealth. “Rich lives instead of lives of riches” is one of the mottos of the new self-creating “downshifter” (50 million of individuals according to the survey), who deliberately choose to earn less money and to attain more balance in their lives, preferring to devote more time to their families, health and hobbies.²⁷

²⁵ H. Shams, “Law in the Context of ‘Globalisation’: A Framework of Analysis”, 35(4) *The International Lawyer* 1589(2001). On globalisation and law see also: A. M. Slaughter, *A New World Order* (Princeton University Press, 2004); M. Castells, “Global Governance and Global Politics” in *Political Science* (Cambridge University Press, 2005); S. Cassese, “The Globalization of the Law” 37 *New York University Journal of International Law and Politics* 973(2005); J. E. Stiglitz, *Making Globalization Work* (W.W. Norton & Company, 2006).

²⁶See R. Botsman, “Defining The Sharing Economy: What Is Collaborative Consumption—And What Isn’t? Are Airbnb, Zipcar, Etsy, and Uber really all doing the same thing? Or do we need better definitions of this new economic force?”, in <http://www.fastcoexist.com/3046119/defining-the-sharing-economy-what-is-collaborative-consumption-and-what-isnt>. Accessed in November 2015.

²⁷C. Hamilton, *Consumerism*, *supra* note 9 at p. 575.

These actors have specific characteristics in the domain of food safety. When investigating on the new frontiers of food safety law, I have also started supporting the idea of a necessary shift of paradigm, which requires to develop the idea to actively engage the participants of the food supply chain, and presupposes their active role as decision-makers.²⁸

As stated above, any reflection on sustainability involves a whole community, and this is the lesson that we learn from nature: the only way to sustain life is to build up and to nurture the community. In this regard, Capra states that we shall start reasoning in terms of “system thinking”, for it is crucial to understand the essence of ecology: from the Greek word *oikos*, household, ecology implies a structured system of relationships, as the science of the various members of the Earth Household. “System thinking” means thinking in terms of relationships: “each species in an ecosystem helps to sustain the entire food web. If one species is decimated by some natural catastrophe, the ecosystem will still be resilient if there are other species that can fulfill similar functions. In other words, the stability of an ecosystem depends on its biodiversity, on the complexity of its network of relationships.

This is how we can understand stability and resilience by understanding the relationships within the ecosystem.”²⁹ Surely, as for the new paradigm required to conceive the consumers as “mindful individuals”, here the Western world will be challenged to find a methodology to map the relationship, in order to understand how they originate and then develop. Capra explains that “Understanding relationships is not easy for us, because it is something that goes counter to the traditional scientific enterprise in Western culture. In science, we have been told, things need to be measured and weighed. But relationships cannot be measured and weighed; relationships need to be mapped. So there is another shift: from measuring to mapping.”³⁰

The example provided by the food sharing initiative, as well as from the other case studies illustrated above, marks a clear turning point in this shift of paradigm, in two main regards. On one hand, if the protected target in the European Food Law legislation since 2002 has always coincided with the consumers’ health, the new concept of sharing overturns this idea, and leads part of the society from the logic of consumption to the concept of sharing. On the other hand, we assist here to a reversal of burden of proof: in the past, the liability in case of unsafe food was in the hands of

²⁸See L. Fornabaio, M. Poto, “The food sustainability challenge: a web of mindful individuals can make a critical difference to the development of sustainable food policies”, forthcoming in *Revista de Direito da Cidade*(February 2016), ISSN 2317-7721

²⁹Capra, Luisi, 2014, 34.

³⁰Ibid., 56.

the food business operators, in the new conception, the proactive role of the foodsharers makes them responsible for their choices. As said above, the participants of the sharing initiative sign up a legal agreement, where they exempt the food business operators from liability for the further use of the food and they commit themselves to distribute the food without charging the recipients of the distribution.

The protection of the Planet as the ultimate goal in progress

Last but not least, when reflecting upon the achievements of the participatory democracy applied to the environmental protection, I have supported the idea of trespassing the binomial concept participation-procedural tool.³¹ The participatory approach, borrowed by the second pillar of the Aarhus convention and generalised to the administrative activity was not sufficiently developed, for there was need of a structural change, based on the idea that the Earth has to be the centre of the system and where the ecological interest has to stand out as a fundamental right of the individuals. There is no shortcut to this process. Of utmost importance is the need to come to the common consensus that “sustainable development, democracy and peace are indivisible”³² and shall be pursued with a unified approach.

CRITICAL APPROACHES TOWARD THE SHARING ECONOMY AND WAY FORWARD

The progressive concept of sharing economy as a significant driver of the so-called “fourth industrial revolution” has been enthusiastically supported by the World Economic Forum in Davos.³³ Food sharing, and of sharing economy as such, has been introduced in a period of increasing unemployment and poverty rates in Europe and in times of an urgent necessity for more efficient climate change response measures in order to safeguard the environmental and social interests. The recently adopted Paris Agreement could be interpreted to implicitly promote the development of web-based food sharing initiatives which mitigate the negative impact of unsold

³¹ M. Poto, “Strengths and Weaknesses of Environmental Participation Under the Aarhus Convention: What Lies Beyond Rhetorical Proceduralisation?”, in E. Lohse, M. Poto (ed. by), *Participatory Rights in the Environmental Decision-Making Process and the Implementation of the Aarhus Convention: a Comparative Perspective*, (Berlin: Duncker&Humblot, 2015), at p. 154.

³² W. Maathai, “An Unbreakable Link: Peace, Environment, and Democracy”, 29(4) *Harvard International Review*(2008).

³³ See “World Economic Forum special: co-ops to drive the 4th Revolution”, 20 January 2016, in <http://ica.coop/en/media/news/world-economic-forum-special-co-ops-drive-4th-revolution>. Accessed in February 2015.

food on the environment by encouraging efforts of private actors to address and respond to climate change.³⁴

Despite the noble goal of sharing economy, several progressive economists point out the downside of the sharing. Dean Baker argues that the new sharing is “largely based on evading regulations and breaking the law”.³⁵ There is indeed a risk that the sharing might expose consumers to substandard or unsafe products, especially those near or after the expiration date. As I mentioned earlier, there has been a notable shift in product liability from food business operators to consumers, whereby the former dismiss any responsibility or the latter voluntarily contract to take on the responsibility. New regulations should therefore be adopted at national or regional level to ensure that the food safety standards are respected by providing for random checks by public authorities over virtual food banks and other food sharing platforms.

The sharing economy might also by-pass the norms prohibiting discrimination on the basis of age, sex, race, economic conditions and other factors.³⁶ Food sharing was designed to alleviate hunger and improve the economic situation of the poor. However, given that most food sharing initiatives operate on the basis of web-based technology and by means of smartphones (which are not the most affordable tools), the assets of sharing economy might not reach the initially intended beneficiaries. Therefore, a qualitative study should be carried out to assess whether the poor and the elderly actually benefit from web-based food sharing initiatives.

In spite of the evident drawbacks of the sharing economy, it could be one of the most efficient tools to address the inequalities in our world by combating hunger and safeguarding Mother Earth for future generations at the same time.

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