The Common Good and Environmental Governance for the Support of Life

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Edited by

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TABLE OF CONTENTS

INTRODUCTION

LAURA WESTRA

The ongoing environmental crisis has given rise to grave concerns everywhere, and many authors have approached this topic from various disciplines and points of view, proposing different strategies to address and correct the situation. The role and possible efficiency of the existing legal regimes, most of which do not seriously consider the ecological problems that are the basis of most of the global problems that beset us, present a problem.

In Italy, the 2015 Expo of Milano, held from June 29 to July 4, attempted to address some of the major issues, primarily the availability of safe food and water, and the legal regimes that govern their distribution. Our conference took place at the University of Parma—an old university in a city roughly one hour from Milano.

The availability of safe, affordable food and water was among the principal themes of the meeting, together with a critique of existing legal regimes affecting people globally. The conflicts in many areas of Europe, together with the deprivations suffered by many in the developing countries outside the continent, have led to a health crisis in some areas and forced the ongoing migrations to Europe of refugees and other asylum seekers, all of which present grave problems for most European states.

This volume discusses these issues from the standpoint of existing legal instruments, with a primary focus on the necessity for ecologically oriented governance in order to mitigate and redress a situation that, at present, supports multiple human rights violations.

Mariasole Porpora's chapter provides an insightful analysis of the way a fragmented global community approaches the regulation of a common good—food. From her discussion of the case of GMOs, and the conflicting positions taken by the WTO and other international organisations, all primarily oriented to trade rather than human safety and protection, what emerges is the clear superiority of European regimes. These are far more committed to the protection of human rights and the cultural and ethical values of individual countries than what is present in North America.

Alessio Malcevschi promotes and explains the multiple uses of biocharculture. Not only does the author believe that the present agricultural systems would be greatly enhanced by the adoption of biochar, but that biochar would also decrease the problems created by climate change, the loss of ecological integrity and other major, ongoing grave abuses of natural resources. Malcevschi explains in detail the scientific issues that demonstrate how the present agricultural practices do not succeed in reducing hunger worldwide, and contribute significantly to environmental problems such as climate change. The consequences of adopting this novel (but long-established) procedure would reduce many of today's ills, such as conflicts due to resource scarcity, or the masses of asylum seekers and refugees that follow such conflicts.

Alicia Epstein's chapter discusses the European Parliament Resolution of January 13, 2009 (Common Agricultural Policy and Global Food Security, 200 9/2153 [INI]), and the European Commission's CAP Toward 2020 (Meeting the Food, Natural Resources and Territorial challenges of the Future [COM, 2010]), from a food security viewpoint, also considering the "greening" of EU Directives aimed at food production and availability. Despite the stated aim of these instruments to improve the environmental effects of the present agricultural practices, the actual results continue to suffer from the primacy of trade-oriented regulations.

Veronica Valenti and Michele Tempesta discuss the way the right to water demonstrates the conflict between the obligation of states to comply with human rights legal instruments, and their commitment to investors and multinational corporations represented by those investors. The International Centre for the Settlement of Investment Disputes (ICSID) has been involved in many cases in developing countries, and that jurisprudence demonstrates clearly the divergence between the corporate profit motive and the ongoing deprivation of the basic right to water.

In Part II, Lucia Scaffardi and Monica Cappelletti discuss recent jurisprudence in the United States and Australia regarding the patentability of genes. The authors discuss the major problems involved: first the conflict between the formal and substantive aspects of the issue; second, the de facto (if not de jure) responsibility of science to give the primacy of human rights to health.

Elena Carpanelli's chapter discusses the conflict between cultural rights and the protection of the environment. This theme is often researched and discussed at the meetings and in the published work of the Global Ecological Integrity Group, who sponsored the meeting at the University of Parma that led to this collection. The results of our 24 years of work are confirmed here. Most often, the significance of environmental protection

is not taken into consideration in the jurisprudence, and indigenous cultural rights and their closeness to the environment are not properly evaluated.

Simone Gabbi provides a painstaking analysis of the regulatory regime based upon scientific risk assessment models developed in Europe. He contrasts the public fears of special interests corrupting the processes intended to safeguard food safety with what happens in regulatory regimes in North America and Europe. He acknowledges the emergence of new technical tools—that would replace the traditional "elitist," "expert" approaches to risk assessment—resulting in the appropriate risk management.

Yet, the introduction of stricter systems of ethical regulations often results in higher rates of non-compliance. In addition, the newer approach involving reliance on informed citizens, "crowdsourcing," and involving other interested parties, also carries its own problems. First among these is the quest for the appropriate criteria for those who should be involved, and the "borders" for the public to be included. He concludes that the present "attacks on science" must be neutralised by serious responses to attacking "well-informed citizens" who attempt to eliminate the presence of needed controls for public safety.

Francesco de Vanna's chapter contrasts the rule of law, based upon individual states' constitutions, even when informed by global regimes, and the actual effects of globalisation. Globalisation informs governance even in its administrative legal aspects, so that the resulting global governance is influenced by multiple regulations both vertical and horizontal in nature, which limit the sovereignty of each state in various ways. Global players such as the WTO and ISO clearly influence decisions according to their own interests, for the most part. Examples of such clusters of laws include the International Tribunal for the Law of the Sea and the UNCLOS, and their conflicting approaches to the case of overfishing near Chile. On that case, two separate courts argued about one simple case, and the rules that would prevail in a resolution were not clearly set out. Hence, it is necessary to oversee the conflicts of existing legal regimes in order to develop a responsible global form of governance.

Marco Ettore Grasso discusses the concept of sustainable development and the corresponding responsibility regarding the various aspects of "disintegrity" that continue and intensify in the post-modern age. The first type of disintegrity is the enforced separation between disciplines that are forced to proceed on their own path, without any integration between different sciences that would result in the needed integrated policies, supportive of sustainability. The second type of disintegrity is the one that

is clearly emphasised in the papal Encyclical of June 2015, Laudato Si'—the "regimes of inequities." This form of disintegrity is based upon the non-sustainable use of natural resources, and the ongoing lack of preventive measures to avoid the resulting unsustainability. This lack of prevention and care leads to the violation of the rights of future generations.

Finally, the third type of disintegrity reflects an "increasing impairment of the virtues," as virtue ethics recommends starting with virtuous relations towards the environment. Pope Francis recommends the use of "sobriety" and "humility" in recognising our place within the universe and our lack of respect for natural entities, coupled with the excessive use of technological innovations. The desired humility should help us regain our moral integrity.

The chapter by Janice Gray and David McCoy takes human health and explores whether the common good is likely to be served by the approval of unconventional gas activities. They begin by briefly exploring the concept of the common good and the mechanics of unconventional gas mining and fracking. It then discusses the way the legal and governance frameworks for unconventional gas activities attempt to manage the industry. In that regard, they focus on the Quadrilla case in the UK. Finally, they discuss some of the potential public health impacts which may be relevant if Quadrilla is, through the legal and regulatory framework, ultimately granted approval to engage in unconventional gas activities in Lancashire, UK. Such a discussion is designed to highlight the strengths and weaknesses of the legal and governance model in serving the common good as demonstrated by public health outcomes related to the unconventional gas sector.

PART 1:

THE RIGHT TO FOOD AND WATER AND ENVIRONMENTAL GOVERNANCE

CHAPTER ONE

COMMON GOODS AND COMMON NEEDS: THE CASE OF GMOS

MARIASOLE PORPORA[1]

Law, Sausages and Common Goods

"The less the people know about how sausages and laws are made, the better they sleep in the night." This quotation has been attributed to both Otto von Bismarck and the American poet and lawyer John Godfrey Saxe. In either case, it perfectly reflects the sense of confusion and bewilderment one has when dealing with food law issues.

Indeed, like sausages, the food regulatory system is a conundrum of several hardly distinguishable, hardly digestible elements. Food rules themselves, though all addressing the same object, can serve different purposes and protect opposite interests.

Food is a complex matter and hence, like the environment,[2] it is hardly definable in distinct terms; therefore, it is usually addressed with more general expressions that catch its intersections with other fields of law. Specifically, it is not possible to discuss food governance without considering the regulation of commerce, agriculture, environment protection, human health, and animal wellbeing, as well as national cultural and even religious traditions.

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[1] PhD Candidate in Administrative Law at the University of Parma, Italy.

[2] The utilisation of the expression "environmental protection" is the result of a complex hermeneutical activity by scholars and courts in order to determine a system of norms protecting and promoting the landscape, regulating polluting activities and ruling local plans, which do not necessarily exhaust within them. For instance, the difficulties of both the Italian constitutional legislator and the courts in limiting the different areas of environmental law reflect the difficulty in finding a straight definition of such a good. On such matters see, in general, G. Rossi (ed.), *Diritto dell'ambiente* (Torino: Giappichelli, 2015).

As a consequence, food policies frequently lack internal consistency. This demonstrates the double nature of food, considered as both a common good and a commodity, and as having global and local dimensions at the same time.

In economics, public and common goods are non-rivals, since use by one individual does not reduce availability to others. However, while public goods are not excludable because individuals cannot be effectively excluded from use, common goods are.[3]

Generally, food could be seen as a global public good[4] like the environment, or rather as a global common good since its demand is shared by all humans. However, it has experienced a progressive process of privatisation making food equal to any other product sold on the free market. This has inherently derived from technological development, which led humans to depart from self-sustenance systems where people needed to breed and cultivate in order to have food, to developing mutual exchanges of goods through trade. Therefore, the privatisation of food is a process with a long history.

In contrast, what is now emerging is the tendency to privatise its governance. Many areas of food regulation are now covered by the enforcement of private standards, rather than public requirements.[5] These two processes contribute to curbing the relevance of this good for the public sphere and limiting the areas where the values implied in food regulation are underpinned by common policies. In other words, the more food regulation is privatised, the more the values and principles related to food fall outside the scope of general interest.

Therefore, food cannot be properly defined as a common good in its economic definition, which entails non-rivalry and excludability.

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[3] The distinction between common, private, public, and club goods has been developed by P. A. Samuelson in "The Pure Theory of Public Expenditure," *The Review of Economics and Statistics* 36 (4) (1954): 387–9, and J. A. Buchanan, "An Economic Theory of Clubs," *Economica* 32 (125) (1965): 1–14.

[4] Theories on global public goods have recently been developed by economists. See I. Kaul, I. Grunberg, and M. Stern, *Global Public Goods: International Cooperation in the 21st Century* (New York: Oxford University Press, 1999).

[5] See. P. McMichael, "Global Development and The Corporate Food Regime," in *New Directions in the Sociology of Global Development (Research in Rural Sociology and Development, Volume 11)*, edited by Frederick H. Buttel and P. McMichael, 265–99 (Bingley: Emerald Group Publishing Limited, 2005), and M. C. Jordan, "The Privatization of Food: Corporate Control of Biotechnology," *Agronomy Journal* 92 (4) (2000): 803–6, and J. Clapp and D. A. Fuchs (eds), *Corporate Power in Global Agrifood Governance* (Cambridge MA.: MIT Press, 2009).

Rather, what is common, what every human shares, is not food in itself, but the need for food.

Therefore, the definition of food is twofold—it is both a commodity and a common global need or, from a government's point of view, a common global responsibility.

This has some implications on the regulation of common goods. The connection of food governance with other areas of law protecting public and common goods influences the food regulatory system; above all, however, it affects the way the safeguarding of those goods is delivered by the authorities. The more food policies are attracted in the area of trade law, the more the regulation of common goods is affected by privatisation.

That said, it is crucial to understand if public policies take the double nature of food into consideration, since this influences their effectiveness.[6] The more policies drift away from the point of balance between the different interests involved, the more opposite trends try to readjust the lost equilibrium, causing negative effects on the internal consistency and unity of food policies.

Precaution and Prevention in the Regulation of the Food Sector

GMO policies are a privileged point of observation of the conflict between the possible approaches towards food policies. In this area, the tension between the global and the local dimensions of food, as well as between its process of commodification and "commonification," is at its highest level.

In this area, the fragmentation of governance is clear. The general objective of creating a single global—or European—market tends to overpower the attempts to protect the other interests involved in food governance, concerning human health, food security,[7] and food safety, as well as the protection of biodiversity, ethical beliefs, and local economies.[8]

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[6] According to C. Rocha, an industrialised system addressing food only in economic terms cannot attain food security for all humans. See "Food Insecurity as Market Failure: a Contribution from Economics," *Journal of Hunger & Environmental Nutrition* 1 (4) (2007): 5–22.

[7] After the economic boom of the 1960s, food security was no longer considered an emergency. However, after the global crisis at the beginning of this the twenty-first century, governments and organisations have started to draw attention back to these issues. According to a report by the Food and Agriculture Organization ("State of Food Insecurity in the World," 2015, www.fao.org), although the number of people affected by hunger is decreasing, it is still around eight-hundred million.

[8] According to C. D. Stone, "The oppositions to GM *food*s arises not merely from diverging interpretations of the limited empirical data but also from conflicting

The reason for this fragmentation relies on the inherent structure of the global regimes, born to support and not replace the national legal order, which are instead based on political representation and fundamental shared values. The lack of a global constitution prevents sector-based systems gathering around common principles and creating clear and controllable power relationships between global actors. The result is a constant process of negotiation between values and the creation of liquid hierarchies, based on the degree of representation of the relevant interests.[9]

The food governance network is formed of a large number of organisations acting at local, national, regional, and global levels. These bodies do not exercise a general competence on all food law issues, but normally focus on single aspects, such as food safety, human health and animal welfare, trade, sustainable development, or food security. For instance, the Rome-based United Nations agencies (FAO[10], IFAD,[11] and WFP[12]) mainly carry out initiatives regarding food security. At the same time, the WHO[13] is more concerned with food safety and other health-related issues. Nonetheless, the basic texts of these organisation always mention the enhancement of free trade among their main objectives.[14] Under global principles, the protection of health, the eradication of hunger, and the threats to food safety can be mainly resolved by the elimination of trade barriers among states. Therefore, measures to protect the safety of

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national and cultural values … including control over what we eat, and attitudes toward science, sovereignty, and capitalism." See "Is There a Precautionary Principle?" *The Environmental Law Reporter* 31 (2001): 10790. In contrast, according to L. Perfetti, there is no real conflict between the protection of public health and the promotion of free trade. Namely, liberalisation of the market and the promotion of its efficiency through competition happen in the light of a large framework of rules; therefore, the freedom to compete with other producers occurs only if competitors abide by food safety rules. Hence, there is no real opposition, but a convergence between the protection of health and free trade. See "Principi della disciplina pubblica dell'alimentazione," in *Rivista di diritto agrario* 1 (2014): 15.

[9] See S. Cassese, *What is Global Administrative Law and Why Study It?*, in Sabino Cassese, Stefano Battini, Elisa D'alterio, Giulio Napolitano, Maurizia De Bellis, Hilde Caroli Casavola, Elisabetta Morlino, Lorenzo Casini, Edoardo Chiti, and Mario Savino, "Global Administrative Law: an Italian Perspective," RSCAS Policy Papers (2012), 2.

[10] Food and Agriculture Organisation.

[11] International Fund for Agricultural Development.

[12] World Food Programme.

[13] World Health Organisation. It is also part of the United Nations family.

[14] See, for instance, the Preamble of the "Constitution of the Food and Agriculture Organization," Quebec, October 16, 1945, on www.fao.org.

food and human, animal, or plant life must firstly comply with the obligation to ensure free competition. In other words, the protection of the common need of food falls under the enhancement of its marketability.

The powers retained by these organisations fall under the spectrum of soft law, since compliance with the rules issued by them is based on states' voluntary adhesion. However, by means of continuous recalls and linkages to other soft law measures and mandatory rules, these policy proposals form a coherent and cohesive body of recommendations for policymakers covering several areas of intervention. Hence, they retain a very high potential of impacting on food policies.

However, global food governance revolves around two major focal points: the WTO and the EU institutions.[15] These two regulators base their policies on different grounds.

At the global level, food standards are set by an agency funded by the WTO and FAO, called the Codex Alimentarius Commission.[16] The commission's rules on food safety are included in the Food Standards Programme. The function of the programme is to eliminate non-tariff barriers to trade. As with all global regulators, the commission's standards belong to "soft law." However, a set of cross references from the SPS Agreement to the standards makes them mandatory for all the member states of the WTO. Countries can only set higher sanitary or phytosanitary standards if they are justified by solid scientific studies. Therefore, the global system relies on the principle of prevention.

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[15] See D. Bevilacqua, *La sicurezza alimentare negli ordinamenti giuridici ultrastatali*, (Milano: Giuffré, 2012). The author defines the food safety governance as a legal order which is sector-based and transnational, since it regulates a specific matter and comprises several levels of government (global, regional, national, and local), which mutually influence themselves (56–7). The global governance has also been described as an "arena" by S. Cassese, *Oltre lo Stato* (Bari: Laterza, 2006), 8.

[16] On the role of non-tariff barriers see S. Battini, "La globalizzazione del diritto pubblico," in *Rivista trimestrale di diritto pubbl*ico 2 (2006): 327. On their classification, see L. P. Mahé, "Environment and Quality Standards in the WTO: New Protectionism in Agricultural Trade? A European Perspective," in *European Review of Agricultural Economics* 24 (3/4) (2007): 480–503; e MAST (multi-agency support team), *First Progress Report to the Group of Eminent Persons on Non-tariff Barriers.* Mimeo (Geneva, June 2008). See also A. De Capoa, *Norme tecniche e commercio internazionale. Focus su 20 paesi in tema di etichettatura, certificazione, origine, contraffazione e tutela dei consumatori* (Il Sole 24 Ore, 2010).

On the contrary, the EU food policies are based on the precautionary principle, which admits stricter measures even when the negative consequences of a given phenomenon are not sure, but only possible.[17]

Although some have argued for the non-existence of such a distinction,[18] the two principles provide policymakers and agencies with a different level of discretion in the regulation of risk.[19] They do not impose a given choice to the agency, but set procedural boundaries to its activity.[20] Namely, what differentiates precaution from prevention is the moment when the authority is legally authorised to act in order to prevent the negative effects from actually occurring. The precautionary principle allows public powers to adopt measures when the consequences of a phenomenon are very likely to occur, yet a degree of uncertainty remains. In contrast, the principle of prevention relies on sound science only, and therefore the authority can only act in view of clearly demonstrated risks. Hence, the legitimacy or arbitrariness of measures invoking these two principles depends on the amount and quality of information available to the authority in charge with the adoption of the measure.

In other words, while the main global policies rely only on science and get swallowed by the pursuit of a single goal[21]—that is the construction of

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[17] According to some scholars, policymakers might also foster people's fear to achieve pre-meditated objectives and hide them under the scope of the precautionary principle. See C. Sunstein, *Il diritto della paura. Oltre il principio di precauzione* (Bologna: Il Mulino, 2010). On this principle, in general, see L. Krämer, *Principi comunitari per la tutela dell'ambiente* (Milano, 2002), 82 ss; M. Sollini, *Il principio di precauzione nella disciplina comunitaria della sicurezza alimentare* (Milano: Giuffré, 2006); A. Trouwborst, *Evolution and Status of the Precautionary Principle in International Laws* (The Hague, London, 2002).

[18] A. Barone, *Il diritto del rischio* (Milano: Giuffré, 2006), 77; L. Krämer, *Principi comunitari*, 82 ss; M. Sollini, *Il principio di precauzione*; A. Trouwborst, *Evolution and Status of the Precautionary Principle*.

[19] On the distinction between the two principles see S. Romero Melchor, "Principio de precaucion: principio de confusiòn?" in *Gaceta Juridica de la UE 2000* 207 (1999): 89 ss; L. Marini, *Il principio di precauzione nel diritto internazionale e comunitario. Disciplina del commercio di organismi geneticamente modificati e profili di sicurezza alimentare* (Milano: Giuffré, 2004); D. Bevilacqua, *La sicurezza alimentare*, 274.

[20] F. De Leonardis, *Il principio di precauzione nell'amministrazione di rischio* (Milano: Giuffré, 2005); G. Manfredi, "Note sull'attuazione del principio di precauzione in diritto pubblico," *Diritto pubblico* 3 (2004).

[21] According to D. L. Post, "One of the key criticisms of the Codex Alimentarius Commission is that despite its dual mandate to protect public health and to promote fair trade practices, in fact public health protection takes a back seat to trade interest … Although initial drafts of standards are often issued from the

a free global market—the EU legal system allows for embracing the social, cultural, and local economy considerations. This is also due to the fact that the EU system is still partially based on representative democracy, and therefore the general concerns of states exercise a higher impact on the contents of policies, which is less possible in global sector-based contexts.

The tension between the two systems is visible not only in the different policymaking approach, but also when courts are entrusted with the power to settle disputes concerning risk regulation. Namely, the development of the principle of precaution in the EU started from a decision of the Court of Justice regarding food additives.[22] Further, the precautionary approach has become the focal point of all EU food regulations, especially those regarding the importation of food from non-EU Countries. In this area, the most important disputes have regarded animal feed[23] and GMOs.[24]

The difference between these two approaches is going to become harsher for two reasons that have emerged recently. On one side the United States, whose policies influence and are well represented in global institutions, and the EU are currently negotiating the Transatlantic Trade and Investment Partnership,[25] whose goal is to create a free-trade area

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Codex secretariat, in fact the drafts are usually written by individual countries … The result is that a handful of countries, usually those that can afford to devote staff time to drafting Codex standards in between committee meetings, dominate the framing of the standard." See "The Rise of Regulatory Capitalism: The Global Diffusion of a New Order," *The Annals of the American Academy of Political and Social Science* (2005).

[22] The European Union Court of Justice, *Sandoz, BV174/82.* The Court of Justice has further developed the principle in other cases such as *Fedesa*, November 13, 1990, C-331/88; *Eurostock Meat Marketing* December 5, 2000, C-477/98; *Association Greenpeace France c. Ministère de l'Agriculture et de la Pêche*, March 21, 2000, C-6/99; *National Farmers' Union*, October 22, 2002, C-241/01, and *Monsanto SAS et al. c. Ministre de l'Agriculture et de la Pêche*, C-58/10 e C-68/10.

[23] See the EC-Hormones case (WTO Appellate Body Report, EC—Measures Concerning Meat and Meat Products, adopted February 13, 1998).

[24] *EC-Biotech* (WTO Appellate Body Report, European Communities—Measures Affecting the Approval and Marketing of Biotech Products, adopted November 21, 2006, DSR 2006:III, 847).

[25] The commission publishes the report of the negotiations on its website. Although the need to preserve the secrecy and effectiveness of negotiations justifies a certain degree of obscurantism on the bargaining process (EU *C. Justice, T-529/09—in't Veld c. Council*), the commission has decided to disclose the main details in order to enhance transparency and citizens' confidence in EU institutions.

between the two countries by eliminating tariffs and, more importantly, non-tariff barriers, such as differences in sanitary and phytosanitary measures.[26] On the other, in March 2015, Directive n. 412 entered into force, providing European member states with an opt-out clause to forbid the cultivation of already authorised GM species in their territories.

What are the impacts of these events on the regulation of the food sector? What are the implications for global governance, and, ultimately, can food still be considered a common global need?

The following paragraph will analyse the EU rules on the cultivation and commercialisation of GMOs and draw some conclusions about their impact on the global food safety regime.

Case Study—the Regulation of GMOs in the EU

The cultivation of GMOs is regulated by Directive 18/2001 and, for what regards food and feed, Regulation 1829/2003. Contrary to the United States, the European approach towards GMOs has been subordinating the cultivation and circulation of genetically modified food and feed to a prior authorisation granted after a centralised procedure and valid for the whole European territory. Namely, under the law, GMOs are authorised throughout the EU by a procedure involving EFSA[27] (which provides the scientific opinion on the safety of these products), the commission, and the member states, represented in the standing committee on the food chain and animal health. After receiving a positive reaction from EFSA, the Committee shall reach a decision on the authorisation for cultivation of the GMO. However, if it is not able to do so it refers the question to the commission, which decides alone on the matter. Until now, all GMOs in the EU have been authorised without the contribution of the committee because of internal disagreements, dealing mainly with non-scientific reasons, such as the likely impact on national and local economies and methods of production, which are still strongly tradition-based.

The new opt-out clause provided for by Directive 412 aims at crossing this hurdle by giving countries the possibility to forbid the cultivation of authorized GMOs under some conditions. In particular, measures must be in conformity with union law, reasoned, proportional and non-discriminatory, and based on compelling grounds, such as those related to: (a) environmental policy objectives; (b) town and country planning; (c)

[26] Pursuant to this, negotiations proved to be more difficult only with regard to non-tariff barriers.

[27] The European Food Safety Authority.

land use; (d) socioeconomic impacts; (e) avoidance of GMO presence in other products; (f) agricultural policy objectives, and; (g) public policy.

For what regards the reasons listed in (a–c) and (f), they could overlap with some aspects considered within the procedure of prior authorisation. Namely, the aim of the procedure is to assess environmental risks as well as the negative consequences on human health and animal welfare.

In order to avoid overlapping, Directive 412 states that national measures must be compatible with the risk assessment carried out by EFSA[28]; therefore, it seems that the scope of state intervention is reduced to those environmental aspects that are complementary to those considered in the authorisation, because they have a narrower territorial origin and impact.

Nonetheless, national discretion is very limited. The elements considered in the authorisation, together with the growing body of rules the EU has enforced in the fields related to agriculture[29] and the environment,[30] form a tight bond around member state autonomy.

Furthermore, European countries already have the possibility to assert their environmental concerns within the already existing procedures. Firstly, it is possible to adjust the scope of the authorisation according to national needs during the procedure of prior authorisation, and to even re-discuss the authorisation after its issuing in case new evidence is found. This allows for keeping the assessment of the different interests involved at a central level, balancing the need to consider national issues with that of reaching a common position, stabilising the single market and protecting stakeholders' expectations towards European institutions.[31]

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[28] See n. 6 of the Premises of Directive 412/2015.

[29] Initially, the European intervention on agriculture was carried out with directives in order to leave states a leeway in the regulation of this sector. However, the EU has progressively expanded its jurisdiction on agrifood issues, drawing upon regulations. On the erosion of the national regulatory power see A. Gérard, "Le droit communautaire harmonisé," in *Le droit de l'alimentation dans l'Europe d'aujourd'hui.* Actes du colloque europeen de 1984, sous la direction de A. Gérard (Bruxelles, 1987), 17; E. Vos, "EU Food Safety Regulation in the Aftermath of the Bse Crisis," in *Journal of Consumer Policy* 23 (2000): 227–55.

[30] See G. Rossi (a cura di), *Diritto dell'ambiente* (Torino: Giappichelli, 2015).

[31] The principle of legitimate expectation has been elaborated by the German courts and subsequently adopted in the EU. According to it, the administrative and legislative authorities shall protect the expectations of those induced by law to take a particular course of action (see Italian Constitutional Court's judgment of April 4, 1990, n. 155 and April 1, 2010, n. 124). Therefore, it is an expression of the principle of legal certainty and based on the assumption that individuals act rationally. However, this does not entail that public choices must always fulfil

Moreover, GMO law allows member states to adopt coexistence and emergency measures. The former aim at preventing contamination between GMO and non-GMO crops.[32] The latter permits temporary safeguarding measures when it is evident that authorised GMOs are likely to constitute a serious risk to human health, animal health, or the environment. In the past, safeguarding measures have always been judged as arbitrary by both European and global courts, because they frequently hide other socio-economic reasons.[33]

This is the main reason why Directive 412 also envisages the possibility of basing national measures on "socioeconomic" and other "public policy" aspects.

This shifts decision-making from the EU to the member states, changing the distribution of powers between the two regulatory levels. Although European authorisation does not cease to operate, the actual policymaking power is shifted onto the states. The result is the increase of the fragmentation of food governance. Therefore, nineteen EU member states have already requested to opt out of producing genetically modified crops, effectively banning their cultivation.[34]

Indeed, the expressions used in the directive are of broad interpretation, which ideally leaves more space for state discretion. However, this does not imply that countries' policymaking power is completely unbound. Two factors must be considered.

First of all, although the European authorisation is based mainly on scientific aspects, the separation between the risk analysis, carried out by EFSA, and the decision-making power, retained by the commission and the member states, implies the consideration of "other legitimate factors,"[35] that is reasons of public concern, as well. Therefore, the

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citizens' expectations but that their good faith shall be considered when balancing the interests at stake.

[32] Pursuant to art. 26 a of Directive 18/2001/CE, providing for the possibility of enforcing measures to avoid the involuntary presence of GMOs in traditional or organic crops. See also Commission Recommendation of July 13, 2010 2010/C 200/01 on, "Guidelines for the development of national co-existence measures to avoid the unintended presence of GMOs in conventional and organic crops."

[33] See CJEU, July 16, 2009, *Commission v. Poland*, C-165/08.

[34] The full opt-out requests were made by Austria, Bulgaria, Croatia, Cyprus, Denmark, France, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, and Slovenia. Others, like Germany, have filed a partial opt-out request, to allow for research on biotechnology.

[35] The "other factors" are to be considered legitimate only if they are justified by outstanding reasons of public concern, as those pursuant to article 36 TFUE and the related case laws of the EU Court of Justice (see "*Cassis de Dijon*" Sent.

authorisation binds the contents of future national measures from both scientific and non-scientific points of view.

Secondly, the European Union and its members must abide by rules set at the global level, according to art. 216 of the TFEU. The WTO system aims at protecting human health and the environment, but its primary goal is to safeguard the free global market. Measures which are stricter than the standards set by the Codex Alimentarius Commission are considered non-arbitrary and necessary as long as they are supported by a solid scientific base. Almost no room is left for ethical, cultural, or socioeconomic considerations which are not in line with the idea of the free global market.

The new directive increases the differences between the global and European sets of values at the base of food policies.

Interestingly, while the possibility to opt-out has been enforced for what regards cultivation, the European Parliament has recently set aside the proposal of the commission to provide the same exception for the circulation of GMOs.[36] The main reason behind this decision is that opt-out measures would not be compatible with the single market, since they could constitute an internal barrier to trade.[37] However, considering that EU food safety law is usually stricter than global and other countries' standards, it seems that the lack of reference to the compatibility with international rules was deliberatively made.

As a matter of fact, this divergence is likely to be reproduced and accentuated during the current negotiation of the Transatlantic Trade and Investment Partnership, whose goals entail the elimination of tariff and non-tariff barriers. A great emphasis is placed on the harmonisation of sanitary and phytosanitary standards specifically. Although negotiation does not directly involve GMOs, US negotiators have negatively welcomed the entry into force of Directive n. 412.

Moreover, with the signature of TTIP, the conflict will shift from a diplomatic and state-to-state level to a judicial and companies-to-state level, because the treaty envisages a dispute settlement resolution method

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20/2/1979, c.120/78, *Rewe-Zentral-AG*), a well as by objectives of general interest, according to article 52 of the Charter of Fundamental Rights and subsequent case laws (see C. Just., July 12, 2012, C-59/11, *Association Kokopelli*). According to the commission's interpretation, this doctrine has prevented abiding by EFSA's opinions. Actually, it seems that the impossibility to allege "other legitimate factors" depends on the lack of states' agreement on the matter, which prevents the formation of a political consensus within the commission.

[36] The European Parliament's vote of October 28, 2015.

[37] See European Parliament press release of October 28, 2015, on www.europarl.europa.eu.

according to which stakeholders can challenge before an arbitral board the violation of the treaty by a state.[38] This could facilitate the capture of the regulator by multinational and company lobbies.

Conclusions

This work aims at answering the question of how the globalisation and fragmentation of governance affects the regulation of common goods at the global level.

The analysis of the global food governance and the GMOS regulatory system has provided some answers.

Firstly, the globalisation of trade and, consequently, its regulation has changed the way food is addressed by policymakers and stakeholders. Namely, food is no longer considered a common good, but a commodity. Therefore, whereas common goods deserve greater protection by public powers, products on the market are subject to private or public standards falling under the promotion of free trade. Ultimately, globalisation changes the inherent nature of goods.

The privatisation of foodstuff does not come alone, but follows the de-commonification of other similar goods, such as the environment.[39]

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[38] Investor–State Trade Dispute Settlement, ISDS. This method has already been provided for in many commercial treaties between states. Pursuant to it, private stakeholders can directly challenge the breach of the treaty by a state before an arbitral court. In fact, according to the Court of Justice, the violation of international rules is not directly relevant under EU law. However, internal rules shall be interpreted in light of international obligations. Ultimately, ISDS is the only tool for businesses to claim for states' abidance to international commercial treaties. At the same time, some fear that it could also facilitate lobbies' capture of the regulators, to underrepresented stakeholders' cost.

[39] For instance, the new Common Agricultural Policy focuses on multi-functionality, which is the ability of farmers and food chain actors to produce both commodity and non-commodity outputs. Namely, multi-functionality is a concept raised from the idea that agricultural activities could contribute to the provision of social and environmental benefits, such as contrasting climate change and protecting biodiversity and landscapes. However, this also entails that the activities affecting the environment, such as agriculture, have as their primary goal producing economic goods and eventually cause, as a side-effect, the protection of such public good. See C. Potter and K. Thomson, "Agricultural Multifunctionality, Trade Liberalization and Europe's New Land Debate," in *EU Policy for Agriculture, Food and Rural Areas*, edited by A, Oskam, G Meester, and H. Silvis (Wageningen: Wageningen Academic Publishers, 2011), 213.

However, food still has some features that enable its definition as a common global need. This entails that free-trade objectives shall be considered together with others' values. The equal representation of interests cannot, as some have argued,[40] lead to a re-commonification of food, but rather to a more inclusive and democratic approach during the elaboration of food policies. GMOs' governance clearly shows that the interests revolving around the food sector are not all represented in the same way. Food is eradicated from its social and cultural meaning and is mainly treated as a commodity. Commercial values are better represented at the global level, and the absence of a constitutional system prevents balancing them with other relevant factors.

On the other hand, environmental, social, and local economies and ethical values are better reflected at the local and national levels. The conflict between values becomes a conflict between territories, and between global and local policies. Therefore, food governance is not built on an inclusive but mutually exclusive rationale.

This situation suggests a question—is it necessarily true that global problems correspond to global solutions,[41] if global institutions are not able to equally represent all the features involved in the process?

Given that the idea of a global constitutional system is currently unrealistic, we have three possible scenarios.

The first entails the improvement of the connections between the WTO and the other global regulators in the areas of health, environment, and the other interests involved in food governance. This could create a de facto constitutional food system and reduce the current fragmentation of governance. This solution, however, does not solve the lack of accountability suffered by global regulators, which are not elected and even indirectly represent an imaginary global society.[42]

The second scenario, in some ways preferred by the EU legislator, allows lower institutions to regain the regulatory power for all those areas in which no global consent has yet been reached, such as GMOs. The absence of a world society should allow global law to reduce its (although

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[40] J. L. Vivero Pol, "Transition towards a Food Commons Regime: Re-Commoning Food to Crowd-Feed the World." Paper delivered at the ECPR genera conference "Governing Food in an Era of Crises," University of Montreal, August 26–29, 2015.

[41] This is the title of a publication that followed the WTO public forum of 2009, which insisted on the necessity of a common approach to the problem by all states (WTO, "Global Problems, Global Solutions: Towards Better Global Governance," www.wto.org, 2009).

[42] See D. Bevilacqua, *Il free trade e l'agorà* (Napoli: Editoriale Scientifica, 2012).

indirect) mandatory strength. This could be possible not only by changing global law, but also by modifying its interpretation set by global, international, European, and national courts, which have always preferred a strict interpretation of global commercial rules.

The third solution regards the enhancement of procedural safeguards within food policymaking. In this context, the European Parliament has recently adopted a resolution requiring the commission to submit, on the basis of Article 298 of the Treaty on the Functioning of the European Union, a proposal for a regulation on a European Law of Administrative Procedure. Moreover, on May 19, 2015 the commission issued a better regulation package to improve the transparency and efficiency of the regulatory process, both at legislative and administrative levels.

Although procedural safeguards can serve several purposes, including indirect political control over future policies by the legislator,[43] the adequate openness of procedures can contribute to a balanced representation of interests.

The three possible solutions to the lack of internal consistency and external responsiveness of food law can also cooperate in a new reform framework in order to provide for a change in the relationship between represented interests and regulators.

Ultimately, the call for an endogenous reform in food governance rests on the need for a holistic approach in addressing common global needs.

[43] See C. M. Radaelli, "Rationality, Power, Management and Symbols: Four Images of Regulatory Impact Assessment," in *Scandinavian Political Studies* 33 (2010): 164–88.

CHAPTER TWO

BACK TO THE FUTURE: HOW BIOCHARCULTURE MAY PROVIDE A SOUND SOLUTION TO FILL THE TECHNOLOGY GAP BETWEEN RICH AND POOR COUNTRIES IN SOIL MANAGEMENT

ALESSIO MALCEVSCHI

Introduction

A Glimpse at the Future Climate

For many years, scientists all over the world have been warning that the global ecosystem is at risk from the anthropogenic abuse of natural resources. They have identified nine key processes that regulate the stability and resilience of the earth's system and attempted to quantify just how far these systems have been pushed already.[1] Transgressing these boundaries increases the risk of destabilising critical biophysical systems and triggering abrupt irreversible environmental changes that could drive the earth system into a much less hospitable state, increasing poverty and leading to a deterioration of human wellbeing in many parts of the world, especially developing countries.[1] There is evidence that four of these nine planetary boundaries—climate change, loss of biosphere integrity, land-

[1] J. Rockstrom, W. Steffen, K. Noone, A. Persson, F. S. Chapin, E. T. Lambin, M. Lenton, C. Folke, H. Schllnhuber, B. Nykvist, C. A. De Wit, T. Hughes, S. Van der Leeuw, H. Rodhe, S. Sorlin, P. K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley, "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society* 14 (32) (2009) www.ecologyandsociety.org/vol14/iss2/art32/

system change, and altered biogeochemical cycles (phosphorus and nitrogen)—have already been crossed. Among them, climate change is widely regarded to be one of the major challenges of the twenty-first century. It is widely acknowledged that the combustion of fossil fuels and CO_2 production are mainly responsible for such deterioration of the global climate system, in particular global warming. It has been estimated that since 1880 the atmospheric concentration of carbon dioxide (CO_2) has increased by 36%, along with other greenhouse gases (GHGs) such methane (CH_4) by 148% and nitrous oxide (N_2O) by 16%.[2] As a consequence, the earth's average surface temperature has increased by 1.5°F (0.83°C). Worryingly, it has been suggested that the increased concentrations of GHGs released in the atmosphere may increase the global average temperature by up to +6ºC by 2100. It is currently accepted that a 2°C temperature change in the coming years is the upper acceptable limit, beyond which catastrophic climate and ecosystem alterations may take place. Staying below a 2°C limit probably implies that, even having reduced emissions by 90% by 2050, CO_2 has to be actively removed from the atmosphere.[3] Therefore, sustainable actions, both from environmental and economic points of view, have to be taken now. The 2006 Stern Review released by the British government[4] states that the economic impact of climate change under a "business as usual" scenario would exceed the combined cost of the great depression and the two world wars combined, and concludes that while the economic costs of continuing business as usual will amount to between 5% and 20% of global GDP every year, the cost of avoiding this by investment in mitigation strategies may be as little as 1% of GDP**.**

Consequences of Global Warming on Food Security in Developing Countries

In this context, the effects of climate change combined with bad land management are seriously affecting the vital link between agriculture and food security, especially in poor countries. The global warming has not

[2] T. F. Stocker, D. Qui, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley, "Summary for Policy Makers", International Panel on Climate Change (IPCC) (Cambridge and New York: Cambridge University Press, 2013)

[3] A. J. Weaver, K. Zickfeld, A. Montenegro, and M. Eby, "Long Term Climate Implications of 2050 Emission Reduction Targets," *Geophysical Research Letters* 34, (2007): 1-L19703.

[4] *Stern Review: the Economics of Climate Change. Executive Summary*. (2006)

impacted the same way everywhere. For instance, the 2011 report "Livelihood Security: Climate Change, Conflict and Migrations," released by the United Nations Environmental Programme (UNEP), observes that, from 1970 to 2006, seasonal temperatures in one of the most endangered areas of the planet, i.e. the Sahel region of Africa, have risen from 0.5°C to 2.0°C. This increase in temperature, coupled with a fall in rainfall, has had drastic consequences on the growing of crops and food security in this region. Making the consequences of climate change on agriculture and food security even worse in the developing countries is bad land management due to the overuse of fertilizers, inappropriate farming practices, and overgrazing, which altogether negatively affect soil fertility and the carbon cycle. Carbon forms the key component for all known life on earth, and the carbon cycle is the circulation and transformation of carbon back and forth between living things and the environment. Carbon is the main component of organic matter present in the soil that affects its physical, chemical, and biological properties, contributing greatly to its proper functioning on which human societies depend. The benefits of soil organic matter (SOM) include improvement of soil quality through the increased retention of water and nutrients, resulting in the greater productivity of plants in natural environments and agricultural settings. Since the beginnings of recorded history, societies have understood that wrong human activities can deplete soil health and its ability to produce food.[5] Only in recent history has the understanding of soil health and productivity been tied to SOM levels, with the depletion of SOM stocks often leading to large-scale impacts on wide ecosystems, undermining the resilience of many communities in developing countries, especially in Sub-Saharian Africa and South Asia,[6] which directly depend on natural resources for their livelihoods. There is evidence that the combination of poor soil management and the effects of climate change has several consequences on crop growth including: (1) low productivity, in terms of the quantity and quality of crops, (2) higher costs of agricultural practices, through changes in water use, particularly irrigation, and agricultural inputs such as fertilizers, (3) bad environmental effects like the worsening of soil drainage, nitrogen leaching, soil erosion and reduced crop biodiversity, (4) less rural space, through the loss or grabbing of cultivated lands and land speculation, (5) the unpredictable effects on the adaptation of crops and livestock, and (6) massive human migration from drylands to

[5] J. R. McNeill and V. Winiwarter, "Breaking the Sod: Humankind, History, and Soil," *Science* 304 (2004): 1627–9.
[6] World Bank Report, "Turn Down the Heat: Why a 4°C Warmer World Should be Avoided" (2012).

neighbouring countries, putting further pressure on natural resources and increasing the frequency and aggravation of local conflicts. Every year, more than twelve million hectares of productive land become barren due the consequences of global warming, desertification, and drought, which means a loss of twenty million tons of grain, and there is a fear that agricultural yields could fall by 50% in the next few years in some African countries if production practices are not changed. The current form of industrial agriculture is not an option. The recent international Assessment of Agricultural Knowledge Science and Technology for Development report (IASSTD)[7] contained a highly detailed analysis of the agricultural food production system over the last fifty years and concluded that, while there were some benefits in the short term, in general the Green Revolution has failed to address the key issues of hunger and poverty which form an inseparable nexus. At the moment, 70% of the world's poor are rural, with a large proportion of children and women, and among them a total of 795 million people are estimated to be suffering from chronic hunger and related diseases. Many climate models used to simulate vegetation and animal movements have revealed that there is a link between the expansion and desertification of existing semi-arid regions such as the Sahel and the spread of vector-borne disease such as malaria and hygiene-related illnesses such as cholera. By 2050 our planet will contain more than nine billion people, and if we want to meet the world's food demand, reduce poverty, and improve rural livelihoods and human health, we should increase food production by 70%; i.e., we will need an additional 120 million hectares of new productive land equivalent to the size of South Africa. Keeping in mind that today about 80% of food consumed worldwide[8] is produced by smallholders and family farms, 72% of which cultivate less than one hectare of land, this is clearly an unbearable scenario. Therefore, we have to develop and implement a fundamentally new approach to agriculture and food production in order to stimulate capacity building and improve resilience in the developing countries to the unavoidable climate change consequences.

Modern and Old Techniques for Soil Management

[7] IAASTD Report, "Agriculture at a crossroad-Global Report" (Washington: Island Press, 2009) www.unep.org.
[8] FAO Report, "Family Farmers: Feeding the World, Caring for the Earth" (2014), http://www.fao.org/resources/infographics/infographics-details/en/c/270462.