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The Inescapable Radiality of Food and the Impossibility of Environmental 'Restoration'

Abstract
Though issues such as climate change, environmental protection and food security are often siloed in academic and political discussions, this essay moves from the premise that it is not meaningful to treat them as separate categories. Using the recently passed EU "Nature Restoration Law" as a springboard, the argument will be made that the 'restoration' approach to confronting environmental challenges is unsound. More specifically, the law's approach to biodiversity, which includes "the safeguarding of food systems" depends upon a deeply flawed conception of what 'food' is. The essay will instead propose a view of food and environment which sees them as reciprocally transformative and constantly in flux. Neither can be understood as a "thing" since both are "radial" and deeply interconnected. Such a perspective makes evident that other thinking modalities are needed to address the current crises in environmental/food landscapes. A discussion of the potential contribution of religious imaginaries is followed by observations regarding the role of law. Understanding the interrelations between food, environment, law and the cultural imaginaries that tie them together is crucial towards any attempt to "address the humanitarian global food crisis" as the EU claims to do.

Keywords: Food, EU Law, Ecology, Religion, Environment.

1. Preamble

In 2020, Swedish environmental activist Greta Thunberg set her sights on the EU and its role in addressing climate change. As she had been doing for a few years, she called on the moral obligation of the EU to lead. At an extraordinary meeting of the European Parliament's Environment Committee, she stated that the just published EU climate law proposal was "a surrender" and that "Nature does not bargain, and you cannot make deals with physics. We will not allow you to surrender our future"[1]. This was something of an apex in a building public conversation regarding climate change. The language suggested that a battle was being waged in which evil forces (industry?) were destroying the planet and the EU (moral guardian) was giving in. In July 2024, after several iterations, the European Parliament has responded with the "Nature Restoration Law" described on the Commission web site as, "the first

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[1] Available at: https://www.europarl.europa.eu/news/en/press-room/20200304IPR73905/greta-thunberg-to-meps-we-will-not-allow-you-to-surrender-our-future Accessed August 20, 2024.

continent-wide, comprehensive law of its kind"[2]. The first line of the law reads, "It is necessary to lay down rules at Union level on the restoration of ecosystems to ensure the recovery of biodiverse and resilient nature across the Union territory"[3]. It further states that such restoration efforts are necessary towards the safeguarding of food systems. The EU has thus chosen its battle position, and the target is *restoration*. This paper will argue that the 'restoration' approach to confronting environmental plights, and the conception of 'food' iterated in this, and other related EU regulatory documents are both dramatically mistaken.

The argument will be made along three key lines. First, that any understanding of food production is necessarily preceded by *consumption* and *conception*, creating relational and dynamic interweavings that make it impossible to determine *a priori* what 'food' is. There is nothing that can everywhere and always be qualified as 'food' per se, since it is nothing more and nothing less than a cultural result, a culmination of relations between living organisms and what they choose to consume[4]. The universal insistence on food as a material absolute is, however, assumed as an underlying premise in regulatory documents to promote the European political desire to maintain a status quo in which, as it boldly announces, "Food supply is not at stake in the EU today"[5]. At the very least, this ignores the interdependent relationships between food in Europe and the rest of the world (imports and exports of seeds, ingredients, products, laborers, patents, resulting climate effects, carbon emission trading, etc.). More importantly, it fails to recognize that what is provided, protected, and called "food" changes constantly from one place to another, one moment to the next. Food is a cultural entity, and its reification is political rather than scientific or "objective". Illustrations will be provided of these assertions and connections and the futility of treating food as a "thing".

Second, there is an easily traceable connection between current EU attitudes towards environmental conservation and the Christian biblical idea of the Garden of Eden. If the world has been given to humans for their dominion—in modern terms control and consumption—then it follows that the earth is a collection of resources, there for the taking. The idea that biodiversity is to be "wisely used" so it can "deliver benefits" is nothing other than the application of this biblical interpretation, frequently referred to as earthly stewardship—and not without criticism—in both Christian and secular language. At the same time, there may be religiously rooted cognitive frameworks that have a very different view of the relationship between humans and their environment, also traceable to biblical sources. Religiously rooted ideas with universalist aspirations could have something to offer to otherwise morally impoverished—or at least myopic—attitudes. In every case, some examination must be made of the unspoken value judgments EU goals incorporate when pronouncing the promotion and/or protection of different "habitats" and "ecosystems". What criteria, after all, will be applied to determine which areas/species/lifeforms are to be 'promoted' and which eliminated in the name of sustainability? Whose environments will be sustained? The cultural assumptions underlying food/environmental policy must be deconstructed if political choices have any hope of being equitable.

[2] A summary description is available at: https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en Accessed August 20, 2024.
[3] European Parliament, Council of the European Union (2024).
[4] Ricca (2024).
[5] European Commission (2022).

Next, it will be argued that the 'restoration of nature' seen as "an insurance policy to ensure the Union's long-term sustainability and resilience" is a self-satisfied approach that completely ignores the enactive reciprocity inescapably involved in any act of eating and making food, both of which are creative, generative, and continuous. The hubris in the idea that natural evolution has a 'rewind button' and that with the correct manipulations we can put things back the way they were and thereby control climate change must be dismantled if any attempt is to be made to "address the humanitarian global food crisis" as the EU claims to do. Basic evolutionary theory would seem to be in contrast with any vision of pushing biological developments backwards.

The essay then concludes by proposing two avenues of hope, so to speak. First, it is suggested that religiously rooted imaginaries with universalistic aspirations could be useful to a more globally minded view of resources and all the creatures who depend on them. Regardless of particular religious or other world views, the interpenetration of all life forms cannot be denied or overlooked if any of the current challenges (from global warming to food security) are to be meaningfully addressed. We are in desperate need of a genuinely *global* view. The realization of any kind of planetary approach, however, will require legal support, since regulatory tendrils reach and condition every aspect of daily life including food and environment. The semantic plasticity of the law may be precisely what is needed to realistically 'sustain' the constant flux that is the future of our environments and everything within them, including human life. If they were able to open themselves up to a *planetary radial* view, creative legal approaches could be a font of hope. Since how law regulates the environment has important consequences for "nature" and therefore food, the analysis will begin with food, nature, and the EU Restoration Law.

2. The making and unmaking of 'food'

The first mention of food in the Nature Restoration Law is a reference to The Special Report of the Intergovernmental Panel on Climate Change (IPCC) and its statement that "restoring ecosystems will be fundamental in helping to combat climate change and also in reducing risks to food security."[6] Shortly thereafter, reference is made to the communication of the Commission of 23 March 2022 entitled "Safeguarding food security and reinforcing the resilience of food systems" which indicates how "geo-political developments have further underlined the need to safeguard the resilience of food systems". Indeed, this more food focused document begins immediately with a geo-political positioning and with the establishment of the tight connection between environmental challenges and food security:

> **The unprovoked Russian invasion of Ukraine** has further destabilised already fragile agricultural markets. The Covid-19 pandemic and climate change are putting agriculture all over the world under pressure. The latest IPCC report documents how threats to food security and nutrition from droughts, floods and heatwaves as well as sea level rise are already materialising and are set to grow due to global warming, especially affecting vulnerable regions.[7]

The report goes on to describe in detail how the Ukraine/Russia conflict has put the global wheat market at great risk, particularly as Ukraine is "known as the breadbasket of Europe." The term

[6] European Parliament, Council of the European Union (2024).
[7] European Commission, Directorate-General for Research and Innovation (2022).

'breadbasket' is a good place to start for an analysis of the simultaneous materiality and immateriality of food.

In cultural political terms, breadbasket refers to "a part of a region that produces cereals for the rest of it."[8] The verb 'produce' is key, however. The first cultivation of wheat took place 10,000 years ago, and wheat-derived products are indeed products: they are not found in nature but are rather created through complex processes of growing and processing grains and seeds, grinding them into flour, often followed by leavening, and then of course baking. 'Bread' is a broad term which can refer to a wide array of potential products. Though certain regions rely much less on wheat/bread than on rice or corn as staple foodstuffs, it is taken as a given in the West that bread is *the* basic food, thus the concern over breadbasket instability. This idea leaks into a secondary definition for 'breadbasket': "a person's stomach, considered as the target for a blow", e.g., "there's one in the breadbasket for you".[9] In both cases, the centrality of the breadbasket is clear. It is considered by many to be the essential nucleus of food systems, of bodies. Nevertheless, as in all categorizations, what is deemed to be 'essential' is an exclusively cultural determination, a choice not a given. There is a *conception*, a plan or an idea that is required in order for bread to become bread. It must be ideated, created. It cannot be made without detailed chemical knowledge. Its *consumption* as a food is then another step in a cognitive relational process. First something is identified/selected/made as food, then it is ingested, digested, changed. All consumed things become part of the consumer as part of this transformation. After digestion they become part of the earth from which they emerged, in a biological cycle as old as time. Without the long chain of processive events that constitute these transformations, there is no such thing as bread. That it has been deemed food emerges from another set of relational transactions between people and environment, and its subsequent treatment within the food category is also highly variable. In the last century, responses to epilepsy, obesity, gluten intolerance and more have included a rejection of carbohydrate-dense foods, with bread at the top of the list. When people stop including bread in their diets, in some sense it is no longer food for them. Simultaneously, in other social circuits it remains vital.[10] This time liquidity that is so evident in bread—and in all food—is part of its being. It *is* and *is not* in relation to its creators/consumers, its geographical, biological, and social involvements. If bread is the quintessential food product, then it should be obvious that *food does not exist independently of complex interrelational interactions between people and environment*.

A still wider view makes this even more apparent. Bread, after all, is credited as a key factor in the human social transformation from nomadic existences to settled societies; as a central product born of agriculture, bread changed the fabric of human lives as early as 14,000 years ago. Corn and rice obviously involved similar transformations, but bread may be the most widespread food product in existence. The varieties in its modes of production and consumption are vast, and alterations in preferences have been and continue to be dramatic (from 'wild' grain dark bread to highly processed white bread and back again, to offer a single Western example). Bread can be the primary element in meals or an accompaniment, thick and chewy or paper thin and crunchy. In the Middle Ages in Europe, old bread was used as a plate for other foods. It might be safe to say that there are as many forms of

[8] Oxford Languages.
[9] Ibid.
[10] About the social and cultural meanings of bread, a great deal has been written. At least one anthropolgist defines the French primarily as "bread eaters" (*Anthropologie des mangeurs de pain)* with the description, "Bread, a symbolic narrative food of identity", Gnaba (2011).

bread making and consumption as there are peoples. It should also be noted that bread is not an easy product. In all of its forms it requires a tremendous amount of human effort: cultivating grains, drying, toasting, grinding them, combining the resulting flour with at least water, leavening (optionally), and finally baking. The term 'breadbasket' could bring to mind a simple container that holds one kind of food substance, but it refers metaphorically to a long and complex chain of events and relationships. Political concerns about risks to breadbaskets refer to the availability of an edible substance that is important enough to have an impact on human possibilities for survival. Bread, then, is not a thing but rather an icon, a semiotic sign that refers to massive relational flux, filled with history.

Nor is this observation unique to bread, of course. The most cursory glance at the foods of the world reveals unrelenting diversity and complex chemistry/artistry, from fermentation to animal husbandry to the selection of plants, herbs and animal types and parts for consumption. What we eat changes dramatically from one place to another, from one time to another. With alarming speed, people change their consumption preferences, and substances fall in and out of the food category. Yesterday's chestnut could be today's cricket. Seaweed, bird saliva, and ant larvae might here be considered nuisances or at least irrelevant to food, there considered important sustenance. The emergence of "novel food" as a category for European regulation has brought this issue into the spotlight.[11] Laboratory-made products for consumption from cultivated meat to mushroom-made milk proteins as well as vertically farmed produce are today at times attacked, at others celebrated not only as additions to the food category but indeed as top solutions to "save the planet." Humans have always constantly *invented* their 'food' with remarkable technologies such as cooking meat (thereby transforming human anatomy) and farming produce (transforming societal forms), today evolving in cellular technologies and experimental farming techniques. Whether we grow our food in the ground, in water, in laboratories or elsewhere, what we eat is the result of the relationships we choose and their reciprocal impact on us. Nothing we call food exists independently of our efforts to make and shape our experience with the world.

Nonetheless, regulatory documents are still based on an underlying assumption that food exists independently of our conceptions of it or even of its constantly changing nature, and often there is not even any attempt to define it. Thus, we find enunciations such as, "Evidence shows that restoring agro-ecosystems has positive impacts on food productivity in the long-term, and that the restoration of nature acts as an insurance policy to ensure the Union's long-term sustainability and resilience"[12]. In light of the brief prior analysis a question immediately arises: restoring agro-systems to what? To when? To which exact moment in which slice of a 'system' is the document referring? And then "food productivity": whose food? At what point in time? What people eat, what foods they depend on for survival are not and never have been stable but instead shift, shape and are shaped by geographies and social changes. To return to the breadbasket idea, the wheat fields of southern Italy (the closest region that might be called a national breadbasket) are the result of massive deforestation by the Romans since

[11] With typical European modesty, the EU defines novel food as "… food that had not been consumed to a significant degree by humans in the EU before 15 May 1997, when the first Regulation on novel food came into force." That a category defining what food *is* could be made along regional-temporal lines, without considering what food has been consumed to a significant degree *elsewhere* is in contrast with global trends that have been active for decades; notably, people—particularly the wealthy—actively seek foods never before seen or consumed in their territory for their perceived health benefits. For recent scholarship on novel food regulation in Europe, see Scaffardi, Formici (eds.) (2022).
[12] European Parliament, Council of the European Union (2024).

agriculture was the economic basis for the Roman Empire; wheat fields were not found, but rather made by razing forests. A call for "restoring" forests at the expense of food-producing terrain would seem to be counterproductive towards a goal of "food productivity", particularly since Italy, identified the world over for its love of pasta, depends on imported wheat to produce enough for national consumption.[13] Bolivians have been moving away from consumption of their primary staple crop quinoa (and towards far less nutritionally-rich pasta and bread) ever since it caught the attention of Western markets[14] increasing (slightly) their wealth, decreasing their nutritional intakes, and over time shifting to homogenous approaches to farming. Landscapes the world over continue to be determined by agricultural market-driven choices, from the sweeping results of corporate monocrop farming to the international expansion of selected crops such as soy or avocados. One group's "food productivity" often ends it or severely hampers it for another.

Indeed, the Nature Restoration Law directly defends and promotes 'extensive agriculture' sustaining that "Extensive agriculture is vital for the maintenance of many species and habitats in biodiversity-rich areas"[15]. What is extensive agriculture? Brittanica defines it in this way:

> ...a system of crop cultivation using small amounts of labour and capital in relation to area of land being farmed. The crop yield in extensive agriculture depends primarily on the natural fertility of the soil, the terrain, the climate, and the availability of water.
> Extensive agriculture is distinguished from intensive agriculture in that the latter, employing large amounts of labour and capital, enables one to apply fertilizers, insecticides, fungicides, and herbicides and to plant, cultivate, and often harvest mechanically. Because extensive agriculture produces a lower yield per unit of land, its use commercially requires large quantities of land in order to be profitable.

Though the language is abstract, it contains direct implications for how people live and eat. The restoration of extensive agriculture means allotting more land to large farms run by fewer and fewer people. This means continuing the trend that distances people from what they eat and leaves its management to large corporations.[16] The EU states that extensive agriculture methods encompass "precision agriculture, organic farming, agro-ecology, agroforestry and low intensity permanent grassland"[17] which sounds humane but likely includes monocrops managed by drones.

One might object in its defense that the Nature Restoration Law has been created by Europe for Europe. The stated goal is the "long-term sustainability and resilience" of the European Union.

[13] The issue of wheat for pasta in Italy reflects the complexity of today's food markets. While Italy is the 25th largest exporter of wheat in the world, it is simultaneously the 7th largest importer of wheat Available at: https://oec.world/en/profile/bilateral-product/wheat/reporter/ita Accessed July 3, 2024. This is because as the largest per capita consumer of pasta in the world, it lacks the durum wheat necessary to furnish adequate pasta production for the domestic market. Available at: https://global.ilmanifesto.it/the-pasta-is-made-in-italy-the-wheat-isnt Accessed July 3, 2024.

[14] A similar even more conspicuous phenomenon can be observed in Bolivia whose staple crop of quinoa caught the world's attention because of its high nutritional content prompting the United Nations to declare 2013 as the International Year of Quinoa. Prices spiked and Bolivian domestic consumption dropped as farmers had more to gain economically through export. Though trade imbalances have eased relative to their 2013 peak, today exports are still double local consumption. Perez, Muriel (2024)19.

[15] European Parliament, Council of the European Union (2024), 10.

[16] "...extensive agriculture must be carried on where land values are low in relation to labour and capital, which in turn means that extensive agriculture is practiced where population densities are low and thus usually at some distance from primary markets". Brittanica, https://www.britannica.com/topic/extensive-agriculture

[17] European Parliament, Council of the European Union (2024), 10.

However, the idea that such a goal could be accomplished in autonomy from other territories is at the very least profoundly naïve. From a strictly geological perspective, consider this small but perhaps evocative anecdotal example. In Italy and other European countries, the rain periodically carries sand from the African Saharan desert and deposits it upon the territory. The skies become yellow or red and houses, cars, plants, are all covered in sandy deposits. Is this "Saharan rain" European or African? Would sustainability imply finding a way to make the sand remain in Africa? Is there any consideration of 'nature'—meaning land, flora and fauna—that can be made independent of weather? Is not every water source eventually connected to every other one? How can any discussion of food or agriculture take place without consideration of this interdependence?

An agricultural perspective begs the question of which crops should be sustained and made resilient. The food system in Europe—if we are considering what people eat—does not include only European-produced foods. In fact, if measured by weight, in 2016[18] the EU imported more food than it exported. As of 2023, this deficit was limited to certain food categories such as "oilseeds and protein crops, fruit and nuts and coffee, tea, cocoa, and spices" but it should be noted that 22% of European agri-food exports go the UK whose proximity and ex-European status would seem to skew the picture somewhat.[19] To return more directly to the relationality of food, the WWF points out that the average European consumes 60.6 kg of soy per year[20]. How? Through the consumption of animal and dairy products that depend on soy for their production; cows, pigs and farmed fish are all fed with significant quantities of soy. If the meat and dairy consumed in Europe are almost entirely dependent on soy crops in the US and Brazil, then how can they be called European? Finland alone consumes more than 20kg of bananas per capita per year. No European banana crop could produce enough to sustain this practice, despite Iceland's heroic geothermal efforts[21]. Should sustainability efforts work towards convincing Europeans to stop eating bananas?

Every *thing* eaten is produced by and dependent upon other *things*. Each act of consumption *makes* the consumer and the consumed. Every action and interaction involving production and consumption is transformative and the interrelationships involved are all-encompassing. This is made plain by phenomena such as the relationship between the forest canopy tree "Balanites wilsoniana" and forest elephants. The trees are consumed by elephants who subsequently digest and disperse their seeds. Elephants provide the only means of seed dispersal available and the digestion process has a crucial impact on the subsequent germination of the seeds. While these tree seeds can germinate without elephants, their evolutionary success is drastically improved by elephant dispersal and digestion.[22]

[18] "In 2016, the European Union (EU) imported almost 93 million tonnes of food from outside the EU, worth a total of €101 billion. Compared to 2012, food imports have increased by 6% in terms of volume and by 18% in terms of value. On the other hand, in 2016 the EU exported 91 million tonnes of food outside of its borders. These exports were worth €84 billion. Compared with five years ago, this is an increase of 42% in volume and 20% in value." https://ec.europa.eu/eurostat/web/products-eurostat-news/-/EDN-20171016-1

[19] Available at: https://agriculture.ec.europa.eu/news/eu-agri-food-trade-achieved-record-surplus-2023-2024-04-05_en Accessed July 10, 2024.

[20] Available at: https://www.wwf.eu/?6146966/Average-European-consumes-over-60kg-of-soy-a-year--new-research Accessed July 10, 2024

[21] Available at: https://utahforge.com/2023/03/31/did-you-know-europes-largest-banana-producer-is-not-who-you-think/ Accessed July 10, 2024

[22] According to one study, "…elephant gut passage is expect to improve relative germination by as much as 4000%." Cochrane (2003).

Plainly: without the elephants, the trees cannot thrive. Without the trees the elephants cannot thrive. Less poetically, Europeans depend on African and Asian laborers to harvest their fruit and vegetable crops and often to perform other food-related labor on dairy and livestock farms without which the majority of "staple European foods" would be unavailable. The statement "Food supply is not at stake in the EU today" assumes the continuation of a status quo in which imported foods and people are crucial and silent assumptions about the very constitution of 'food' undergird the entire regulatory apparatus.

Organisms and their environment are inextricably interdependent, and this includes perhaps most of all humans. The relationship between human beings and all the other entities with which we share an environment—including anything and everything that was, is or will become 'food'—is dynamic and interpenetrative. As Ricca notes, this relationship is "dynamic—or enactive—in the sense that its elements do not precede the relationship but are themselves the result of ongoing and mutually transformative interpenetration. From this perspective, the only reality is the relationship itself."[23] To give just one small example: human DNA research has shown that lactase persistence, the maintaining of the enzyme required to break down the lactose in milk and make it digestible, is found in communities that have traditionally herded cattle. In rapid time (from an evolutionary perspective), human cow herders developed the previously non-existent ability to digest cow milk.[24] The composition of the human body changes as its interactions with its environment change. We should perhaps not be surprised what recent research has illuminated: the human microbiome is the site of the most extreme diversity in human DNA. We might say that the gut really is the breadbasket, the core nucleus that more than any other element defines human 'being.' If food is not a 'thing' but rather an endless series of relationships in constant flux, how might the role of humans in the management of global food be conceptualized? Before exploring some options, I would like to analyze further how it is currently being presumed in European regulation.

3. Earthly stewardship and nature as a service provider

In today's largely secular modern Europe, it might be assumed that the moral and ethical framework behind this and other policies is unrelated to religious belief or dogma. Secular Europe takes great pride in its autonomy from all things religious, its dependence on science and "rational" decision making to inform environmental policy. As I have argued elsewhere, however, and joining a growing chorus[25], secularism is something more complex than a facile separation of church and state. What secularism is and does in any given context depends on the specific history and the relationships between state and religious institutions in each environment. The constitutional substance of current mainstream Western thinking regarding "the environment" and ecology more generally cannot be meaningfully understood without considering the religiously rooted ideas that have formed their cognitive basis. Even policy documents such as "Safeguarding food security and reinforcing the resilience of food systems" that appear neutral hold within their language value-laden ideas with value-laden consequences. I have argued that food itself is not an abstract entity that exists a priori, but rather a

[23] Ricca (2018).
[24] Check (2006).
[25] Ricca, (2023b), Casanova (2009), Calhoun et al (2011), Vazquez (2018b).

conclusion of cultural choices that continues to change. What gets included in the rubric "food systems" will vary from place to place and even moment to moment depending on the values informing the categorical schemes employed. So too "security" and "resilience" change according to who and what are held to be worthy of securing and maintaining. The omnipresence of religion in the European historical social landscape has shaped the ideas that govern all social policies, including those that shape food governance. How we think about nature and people's relationship with it has immediate bearing on how food policy is shaped. In short, the consonance between the importance of bread, outlined above, and the Lord's prayer invocation "give us this day our daily bread" is no coincidence.

Though it does not directly govern food, the EU Restoration Law is meaningful as an indicator of EU attitudes and regulation guiding agro-ecosystem policies. With reference to the 2019 "European Green Deal", the preamble immediately identifies the EU's goal to "protect, conserve and enhance the Union's natural capital" because "biodiversity is to be valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people." The message is that natural resources (plants, animals) are "capital", that is, a collection of valuable 'things' that belong to Europeans and are to be *used* since their role is to deliver benefits to people. *Wisely* used, to be sure, but used. This kind of language is repeated throughout the document for example in the call to "restore, maintain and enhance nature's contributions to people", or the observation that "ecosystems deliver, if in good condition, a range of essential ecosystem services". Much highlighted is how "nature restoration" efforts must capture and store carbon effectively. 'Pollinators' are deemed "essential for the functioning of terrestrial ecosystems, human wellbeing and food security, by pollinating wild and cultivated plants," and "fishstocks" are to be conserved and managed. In every case, there is an emphasis on the restoration and conservation of a conglomerate of things called Nature whose purpose in the world is to serve humans. If this attitude sounds familiar, it may be because of its inescapable resonance with one of the most important texts for Christian theology. Consider the following verses of the biblical book of Genesis:

> [1:28] God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth."
> [1:29] God said, "See, I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food.
> [1:30] And to every beast of the earth, and to every bird of the air, and to everything that creeps on the earth, everything that has the breath of life, I have given every green plant for food." And it was so.
> [9:2] The fear and dread of you shall rest on every animal of the earth, and on every bird of the air, on everything that creeps on the ground, and on all the fish of the sea; into your hand they are delivered.
> [9:3] Every moving thing that lives shall be food for you; and just as I gave you the green plants, I give you everything.

In a world in which every moving thing is food for humans, given by the grace of God, the idea of Nature as services, resources for the taking, makes perfect sense. This is not to say that the EU is in any direct way engaging a biblical prescription, but rather that this approach has historical foundations. It is not an objective rational universal idea, but instead a cultural emergence. Certainly, I do not wish to suggest that there are secret Christian motives behind EU nature and agro-system policies. Nor would I condone reducing Christian ecological thought to one interpretation of a brief biblical citation. Indeed, the ideas of dominion and of earthly stewardship are controversial across religious and secular

lines. Ecotheologists have argued compellingly, to take one example, for a biblical interpretation that understands Genesis in conjunction with Psalm 104. In this reading—which I will expand upon below—both are a celebration of God's creation in which humans are part and parcel of a holistic creation, one without hierarchies, one in which each part is dependent upon the others.[26] My intention here is simply to identify one anthropologically relevant strain of cognitive positioning that has undoubtedly seeped into the worldviews that at this moment have a commanding presence in Europe: nature is controllable and ours for the controlling.

There is by now a great deal of literature analyzing European secularism and the anthropologically Christian ethical and moral permeations that characterize it.[27] In the case of food sustainability policy—as in many other sectors—these permeations lurk silently within the unarticulated assumptions that (unwittingly?) uphold them. Not only is the entire premise of these documents that nature is there for the taking, the very imposition of "restoration" as the overarching goal implies that at some point (entirely unspecified) "nature" was as it should be. Human neglect and misuse have led to deterioration which must now be corrected, and 'things' must be put back to how they were. Sin was committed and must now be atoned for. It should go without saying that not every culture shares this worldview. To take just one, a Buddhist mindset would more likely include acceptance and humility towards "nature" rather than control and remaking of it.

Nevertheless, the means of atonement and restoration intended by the EU are specified fairly clearly. Member states are tasked with aiding in "covering" set percentages of both land and sea areas "in need of restoration" in respect of "ecological principles" as well as restoring "at least 25,000 km of rivers into free-flowing rivers in the Union by 2030"[28]. Another stated goal is the planting of at least 3 billion additional trees in the Union by 2030 and this based on "the overall principle of planting and growing the right tree in the right place and for the right purpose"[29]. It is not difficult to view these declarations in an idyllic cast, imagining forests resprouting where perhaps urban landfills or abandoned lots are located. Clean, flowing rivers taking the place of polluted industrial dumping grounds. Songbirds returning where electrical poles have long buzzed. Increased green spaces in cities contributing to improved air quality. Yet as we have seen, each interaction between people and their environment is the result of and also a driver of change. Changes in food markets have increased monocrops, altered which crops are grown in Europe, which crops are imported, and which exported. Migrations from rural to urban living spaces have been significant, putting urban space at a premium, and farmers have famously left the farm to start new lives in the city. Planting trees and removing dams will have major impacts not only on songbirds but also on people. The repeated refrain "in full respect of ecological principles" still seems to reside within a cognitive framework in which people's inclusion in 'ecology' comes and goes. How else could one speak of bringing nature "back into our lives"? Israel has become infamous for planting trees in Palestinian territories in the guise of benefiting nature, but at the cost of expelling people.

[26] Jorgensen, Padgett (eds.), (2020) 42 – 49.
[27] In addition to the sources cited above, see Fitzpatrick (2008) for a succinct description of key issues as well as Vazquez (2018b).
[28] European Parliament, Council of the European Union (2024), 14.
[29] Ibid, 12.

Furthermore, differing worldviews have diverse ideas about what an application of ecological principles requires.[30] Let us imagine that a large swath of land is designated for the implementation of extensive farming. According to the document, this is also an act of "restoration". The density of Europe is such that it is unlikely that such land was simply "empty" before. The EU Restoration Law states that:

> In the absence of a common method for assessing the condition of agricultural ecosystems that would allow setting specific restoration targets for agricultural ecosystems, it is appropriate to set a general obligation to improve biodiversity in agricultural ecosystems and measure the fulfilment of that obligation on the basis of a selection of indicators out of the grassland butterfly index, the stock of organic carbon in cropland mineral soils or the share of agricultural land with high diversity landscape features.[31]

A general obligation to improve biodiversity could see smaller farms consolidated, residential areas "restored" into grassland, or lines of use redrawn based on landscape features. With what consequence for residents? Farmers? Livestock? And the people who eat the livestock? The long chains of relationships all seem obscured by the allegedly noble cry to "bring Nature back into our lives". Given that *we* are an integral part of nature, I fail to see how it ever left. Today in Europe the percentage of people choosing a vegetarian diet is increasing, many motivated precisely by the desire to improve global environmental conditions. This population could potentially appreciate a shift towards vegetable farming rather than soy crops for animal feed, for example. What will be the impact on these considerations as plans for planting 3 billion trees are being made? Does the EU recall that trees are more than carbon sinks? While the Restoration Act refers to protecting conservation trends and increasing the percentage of species and habitats not currently in "favorable status", it is unclear what criteria are being applied to determine precisely which areas/species/lifeforms are to be promoted and which—consequently—eliminated in the name of sustainability. Whose environments will be sustained? Are we certain that maintaining a status quo in which there is dramatic wealth disparity across and within EU countries is a suitable means for transforming the Union into "a fair and prosperous society"? This is further problematized by the declaration that "It is important that the Union uses its trade policy and extensive network of trade agreements to engage with partners on the protection of the environment and biodiversity also globally, while promoting a level playing field."[32] A level playing field for whom? As seen above with Italian wheat, trade alterations have led to Italy not having the wheat necessary to produce pasta for its own domestic consumption. Is this a level playing field? The idea of nature as a service provider as well as the idea of human stewardship of natural resources will inevitably underpin decision-making processes that require difficult choices regarding which sources,

[30] I believe that what is called for is not merely a recognition of "cultural differences" but rather the putting into question the way difference is made different. The various groups of people who object to practices of environmental extractivism ("the accelerated extraction of natural resources to satisfy a global demand for minerals and energy and to provide what national governments consider economic growth") seek not just to put an end to these practices but to "defend the specific ways they make their lives and worlds against extractivist destruction". De la Cadena, Blaser (2018) 1-4. To make sense of radically differing worldviews, we need to acknowledge that "what look like semantic domains are not divisions of the same whole. Rather, what intersect at unpredictable junctures are *worlds*, each of which (an observer might say) recognizes its own environment". Strathern (2018) 25.

[31] European Parliament, Council of the European Union (2024), 10.

[32] European Parliament, Council of the European Union (2024).

which protections and in what ways. Biodiversity is a category that must *include* humans. With this diversity come different worldviews which will need to be respected if equity and justice are the goals.

4. Restoration as anti-theological and anti-evolutionary

I have argued that there is an interpretation of Genesis that sees the world as a garden meant for human dominion. This view seems well represented in prevalent ideas and policies that treat environmental elements as resources to serve humans. This connection, however, is only one piece of a larger puzzle. While it seems to have seeped into Western culture as a viable outlook, upon closer scrutiny, it may not accurately reflect religious views regarding the overall relationship between humans and every other being with which they share creation. To meaningfully engage religiously rooted understandings of this relationship—even limited to modern historically Christian Europe—requires a deeper look. While this is not the forum to address the topic in a comprehensive way, I believe that a more attentive look at the Genesis text can provide useful insights that reveal how the idea of "restoration" is particularly incongruent with the human-creation relationship as described in Genesis, and as understood in more general terms by the Abrahamic faiths.

If we take a step back to review the entire text of Genesis, we find that before the arrival of the word "dominion" there are at least three notable features. First, as at least one theologian points out[33], there is no definitive hierarchy in the biblical description of the process of creation. The scheme of the first six days is ordered spatially. The physical universe is created, followed by its inhabitants, and each addition is declared good. The repetition of this phrase ("God saw that it was good") serves as a kind of uniting thread that weaves creation together as each addition joins the others. It is specified that the green of the earth is intended for all of its inhabitants, "And to every beast of the earth, and to every fowl of the air, and to every thing that creepeth upon the earth, wherein there is life, I have given every green herb for meat: and it was so." Once the world has been completed, the declaration changes slightly. The whole is said to be "*very* good" (emphasis mine); "the whole is greater than the parts"[34]. This is further supported by a second marked feature of the text: relationality. Genesis begins with God moving "upon the face of the waters" and with the creation of light. The very next act is to make dark, to divide light from dark and create the first relational entity, "And the evening and the morning were the first day". From this moment on, each new addition is described in relation to others, "Let there be a firmament in the midst of the waters, and let it divide the waters from the waters", the land is related to the waters, the lights dividing day and night are intended to shape time itself, "Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years…". Genesis describes a holistic ecology a combined wholeness is of greatest value and each element is fundamentally related to the others. A third recurring element in the text is the repetition of the quality of fecundity. The earth "brings forth" the grass, the herb "yields"

[33] Bauckham in Jorgenson, Padgett (eds.) (2020).

[34] "If we are tempted to think that it is simply the creation of humans, the last act on God's agenda, that makes creation 'very good,' we should note carefully that what God approves in this way is 'everything that he had made.' Humans are essential to the completed whole, but so is every other component of this complex creation. There is no indication that any part is more essential than any other. In fact, the sequence of the six days makes it clear that they are necessarily interrelated", Ibid, 44.

seed and fruit "whose seed is in itself". The waters "bring forth the moving creature that hath life", etc. There is an emphasis on the generative aspect of nature, and *every* creature is instructed to "be fruitful and multiply". All of this text precedes any mention of dominion, a term whose interpretation has itself spawned great quantities of scholarly debate.

Setting aside the question of dominion, we can nevertheless turn back to the "Nature restoration law". If we can accept that Europe has a long history of connection and engagement with Christianity and that Genesis is a primary Christian text for understanding the relationship between humans and the earth, what is to be made of the concept of restoration? The text makes very clear that the divine intention is to populate the earth as an ecological whole, where each creation is related to and dependent upon the others and the directive is to reproduce, to continue to populate the world. It is forward looking, forward moving. Restoration is the precise opposite. It goes backward and attempts to edit what exists to return it to a prior condition. Its numeric directives (e.g., to plant 3 billion trees) make no mention of the relationships that define nature (e.g., no trees without elephants, no plants with seeds).

There is another perspective that can be attributed to Christian thinking that could be aligned with the idea of restoration. This is the view in which the order of nature, being of divine origin, should not be modified and must be preserved. But even this idea can be contrasted with alternative readings of both Genesis and the biblical story of Noah and the covenant he makes with God.[35] The key lies in the concept of *imago dei*, humans made in God's image, called upon to continue the creative work of God. This is a proactive task, particularly as recounted in the story of Noah who is charged with saving the animals of the world from the flood and then stewarding the repopulation of the earth afterwards. The covenant also includes God's promise that life will never again be destroyed by a flood. All of this points to having responsibility for what is to come, what is to be created. If humans are meant to continue the work of God, then their task is generative not restorative. Future looking, not backward looking. If, as I have argued, Genesis describes a holistic interrelated world focused on fertility, then the cognitive basis of the "Nature Restoration Act" cannot be aligned with a Christian frame of reference.

This is not the place to enter into an extended comparative analysis of the different conceptions of the human-nature relationship that are part of various religious traditions. Nevertheless, and at the very least it should be noted that any interpretation informing decision making should take stock of differences including those emerging from "minority" religious traditions. To fail to do so would constitute, among other things, a denial of the right to religious freedom.[36]

An evolutionary frame of reference would be equally flummoxed by declarations of restoration, since Darwinian natural selection outlines how traits are favored or not in service to the constant evolution of species. Habitat and wildlife restoration projects have succeeded in meeting specific objectives, to be sure. But there have also been many cases of human experiments in ecological adjustments that have not had favorable outcomes. The interpenetration of species within any given habitat is such that it is extremely difficult to predict what the actual results of interventions may be.

[35] For an extensive analysis of these ideas in the context of a new definition of human dignity as *agentive*, see Ricca (2024).
[36] This statement is only a head nod to something about which I have written elsewhere, see Vazquez (2018a), joining a large literature. In a nutshell, the idea is that religious views cannot be constrained in denominational theological containers but instead spill out into "general" thinking about every aspect of life. Things that seem obvious, neutral, taken for granted in one tradition will be controversial or incomprehensible in another.

Restoration as defined by the EU also seems to be in opposition to modern food development and management perspectives whether the topic is making farming more efficient to increase food production, reducing meat consumption and production, turning to organic farming practices, eating locally, developing meat alternatives, creating food in laboratories or any other of the myriad food movements. Hydroponics and aeroponics notwithstanding, for the moment food is still primarily grown in the ground. Massive sweeping movements to change waterways and plant trees in the name of "restoration" are unlikely to be conducive to solving farming and food challenges. The claim that "Food supply is not at stake in the EU today" can only hold meaning if the widespread interdependence of global food systems and the people who labor within them are ignored. Restoration seems problematic if not impossible without selecting a specific time and condition set that the current state is to be restored *to*. But how would that ever be achieved? How could it be possible? Would towns built over old farmlands be raised? Would current farms be built over or "reforested"? How many people would need to moved? Should marshlands "reclaim" residential areas? The idea that "nature" consists in non-domesticated animals and plants that we can put back where they once were is almost childlike.

At this point, a caveat may be in order. My argument here engages specific EU documents with a broad scope at a conceptual level. I am aware that there may be teams of environmental scientists and agricultural experts working together to answer the very questions that I pose here, and the July 2024 version of the law is already more careful and detailed than its March predecessor. It may be that the 3 billion trees to be planted are envisioned for land that is now entirely "unused". There may be sound ecological reasoning and research behind other goals outlined in these documents, despite the tautological quality of many of its pronouncements.[37] I certainly do not deny the urgent need for concerted efforts to address very real environmental problems, including excess carbon. There are, however, cognitive deficiencies in the way that these policy documents address what "nature" is and does, and consequentially what food is and does. A policy that assumes that the quantitatively prescribed planting of trees or restoration of waterways is indisputably positive for the environment does not seem to pay attention to what 'environment' is and the interrelationality of our involvement with it.

There is an almost generic-because-ubiquitous lesson that never seems to be learned. When we poison rats that are destroying crops, for example, the poison is passed on to predators of rats affecting an upward cascade of animals which perhaps increase populations of other crop-destroying animals. Plant one thing and its spread destroys another. Eliminate "problem" insects and "helpful" insects die too, such as bees, moths, butterflies, etc. As the EU points out, one third of the everyday foods consumed in Europe are pollinated by bees and other insects.[38] The use of neonicotinoid pesticides, or 'neonics', however, was found to have significant negative impacts. Neonics have been banned from the EU and the UK since 2018, in response to scientific evidence of the harm they can do to the bees that pollinate crops and maintain biodiversity. Shortly thereafter, in 2021, it was reported that EU member states and the UK had issued plans to export more than 3,800 tons of these banned insecticides. The intended destination for nearly one half of the total weight of the EU's exports of banned neonic chemicals? Brazil – a country that hosts up to 20% of the world's remaining

[37] "Nature-based solutions are solutions that are inspired and supported by nature…" in European Parliament, Council of the European Union. 2024, 4.

[38] Available at: https://rea.ec.europa.eu/news/eu-funded-projects-helping-protect-bees-across-europe-2023-05-17_en Accessed August 20, 2024.

biodiversity.[39] Meanwhile, Brazil is the single biggest exporter of agricultural products to the EU worldwide.[40] Food reveals the boomerang effect of our environmental decision making. If we continue to treat each element in the highly complex and interdependent reality that is the environment as if it were a 'thing', an object that can be isolated from its relational dependencies, what possibility can there be of finding solutions that are effective, much less just? The success rates of crops are dependent on the impacts of insects, animals and weather systems. Decisions on their management are inevitably driven by economics. It is no coincidence that the EU and UK sought to export their banned insecticides to poorer countries, nor that those countries were willing to purchase them.

The logic employed in the negative case of pesticides is the same employed in the redistributive logic of food. Environmental restoration is being prioritized with the assumption that food supply in Europe is "safe." But what remains unexamined is what we are calling food at any given moment, as well as where, when and how it is produced. As has been pointed out, "The food to be redistributed is taken as an a-priori. Even its transformation into calorific potential for the purpose of survival merely masks in the shadow of the formal data and calculation the choices regarding land use, the distribution of human labor, the selection of food on the basis of contextual and cultural appropriateness, and so on. If we consider that food production and the management of the earth's environment are necessarily global/planetary activities, it follows that quantity and quality are not figures that can be treated separately."[41] As Europe formulates policy for food systems both locally and abroad, I would argue that in addition to nutritional, environmental and geopolitical concerns, any food justice goal-making must be done with an eye towards what can be learned about how and why people eat what they eat. One pressing question is: what imaginary will we use to put all the stakeholders, which means all humans, in agreement? There are a few observations to be made about the potential assistance religiously rooted imaginaries could provide.

5. Religious roots rooting

Though religions have been blamed throughout history for their negative influence on any number of human projects including the destruction of the environment[42], as I have tried to show in small part in this essay, there are arguments to made for their potentially positive contributions. This includes not only organizational efforts but also the worldviews that inform and drive them. I have written elsewhere [43] about an interreligious effort organized by Pontifical Athenaeum Antonianum (a Franciscan pontifical university), the General Curia of the Friars Minor and the Grand Mosque of Rome to contribute to the production of solar energy in Rome and beyond. This and other similar efforts can be appreciated not only for being denominationally cooperative and forward thinking but

[39] Available at: https://unearthed.greenpeace.org/2021/11/18/revealed-europe-and-the-uks-vast-shipments-of-banned-bee-killing-neonics/ Accessed August 20, 2024.
[40] https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/brazil_en
[41] Ricca (2024).
[42] Perhaps most famously by medieval historian Lynn White Jr., whose1967 provocative article "The Historical Roots of our Ecologic Crisis" has become one of the most controversial and cited texts within theological debate about the environment. White (1967). "The Historical Roots of Our Ecologic Crisis." *Science*, vol. 155, no. 3767, 1967, pp. 1203–07. *JSTOR*, http://www.jstor.org/stable/1720120. Accessed 12 Aug. 2024.
[43] Vazquez (2024).

also for the specific way they contribute to the general public conversation on the relationship between people and environment. The project was designated as the creation of an "energy community", one that would gather and redistribute energy to one and all, "because distributing energy to all means also to the last, to those who have been impoverished. Lands that are rich but have been impoverished by war." Subsequent descriptions include the cultural aspect of "peace energy" and the idea of "turning buildings into trees". This is interesting to consider alongside the EU directives for restoration and planting trees. While the EU concept is quantitative, the interreligious concept is metaphorical, though no less tangible. The EU describes bringing nature "back into our lives" inserting thereby a division between humans and environment. The interreligious project seeks to transform existing human constructions into means for improving the environment in ways that will benefit not only the immediate site but also others to whom energy will be donated. I believe this demonstrates a religiously semiotic understanding of relating, one that seeks universality, and in deference to divinity, does not attempt to dominate or control earthly processes but rather seeks to harmonize with them. This is in keeping with an interpretation of biblical sources that sees humans as stewards whose task is to take care of creation, to be responsible for helping it to flourish since we are integral to it.

The ideas and conceptions that form the bedrock of cultural thinking in any context will always contain their religious past and present, whatever it may be. History cannot be erased, it can only be denied or ignored, but usually at great cost. In Europe, religious roots run deep and are most troublesome when they remain hidden from sight. If we ignore the Christianity that lies beneath our scientific approaches to environmental and food system challenges, for better or worse, we may inadvertently alienate non-Christians while depriving ourselves of potential solution-generating outlooks. The word "root" as a verb is also useful since it can indicate both the act of searching as well as the act of settling in, becoming established, creating the possibility of growth.

As we continue to face environmental and food crises, the criteria to determine how and what to 'promote' in the name of sustainability must be better understood and refined if there is any hope for justice. The cultural assumptions underlying food/environmental policy must be deconstructed if political choices have any hope of being equitable. As Finn eloquently reminds, us, "No matter how well-intentioned, a movement based on such an impoverished moral imagination about what is worth wanting when it comes to food will never deliver anything worthy of the name justice."[44] Our moral imagination must dare to encompass not so much what is worth "restoring" but rather what is worth nourishing, planting, growing, protecting in conjunction with difficult decisions about what will have to be renounced or limited. It is increasingly clear that we cannot adequately feed the world without changing our food systems, no matter how "adequate" is defined. A vision of nature that does not include humans is not up to the task of contributing to meaningful solutions. Regardless of one's religious beliefs, it seems impossible to deny that we have indeed been given everything. What we make of it and what categories we use to do so is up to us. Again, religious imaginaries may have something to offer.

While environmental protection movements often use universalist rhetoric, the political and economic actors directing policy and shaping the determining categories (e.g., carbon footprint, organic) tend to be regionally based. Food regulation particularly so. Even those projects that seem designed to protect environmental and community interests such as "farm to table" schemes operate

[44] Finn (2019).

in an inescapably non-universalistic way because they still rely on a reified concept of food. It bears repeating: each choice to consume one thing has an effect on those things not consumed. The decline of a food trend will have dramatic consequences for the exporting area. One company reported that Americans collectively spend $900,000 a month on avocado toast. 80% of American-consumed avocados are produced in Mexico. Avocado trees can take up to 10 years of growth before they reliably produce fruit in significant quantities. If eating "locally" were to spike in popularity in the US, Mexico could find itself with the same problem experienced in Northern Australia in recent years. Farmland in the Atherton Tablelands was once rich in corn, sorghum and tropical fruits as well as dairy farms but it was transformed into endless avocado fields which have now led to a glut in the market. Now farmers are struggling to sell their avocado farms and oversupply is plaguing many of those still in business.[45] In each case, the focus tends to be on local consumption, with little to no regard for planetary impacts driven by water consumption, carbon emissions related to transport, etc. A universal view would have to view food in planetary way, not in terms of moving pre-determined food from one country to another, but rather by looking at the entire planetary production of, say, avocados to determine all impacts from irrigation to transportation to nutritional results. The idea would be to recast the view of food according to "chorological areals"[46] which draw new lines around core categories such as nutrition and sustainability and address food needs through global rather than local calculations. What are the potential food stocks available in each space? Where might we think about limiting production of certain items? As one author succinctly put it, "We can't have it all everywhere".[47] A cognitive shift to a "new universalism" would take tremendous effort, but it could find support in the worldviews of many religions. Though religious institutions have long been condemned for their particularistic views, many traditions share universalist aspirations. Whether we consider the Christian idea that "we are all God's children" or the Buddhist idea of universal consciousness, a universalist teleology is a common element. A truly universal approach to the environmental problems we face including feeding the world would see every human as indigenous[48], and every food scarcity or lack of security as a single, shared problem. This may sound utopic, but as I have tried to argue here, given their interconnectedness, these *are* shared problems whether we acknowledge them or not. Much as it might accomplish EU goals, there is no real "rewind button" on nature and what is transformed in one direction will impact every other 'what' in every other 'where'. A universal view is not so much a dream as a reality that can choose to face or ignore.

6. What role, then, for the law?

Thus far I have argued for the inescapable relationality of food and the perils but also potential in religious worldviews to enrich our imaginary when addressing environmental challenges. I have been critical of EU efforts to "restore" nature, but I support entirely the notion that something must be done to address environmental destruction as well as the related challenges for food production and

[45] Available at: https://modernfarmer.com/2020/09/we-can-now-cryogenically-freeze-avocados-for-future-generations/ Accessed August 20, 2024.
[46] Ricca (2024).
[47] Holt, et al. (2016).
[48] Ricca (2023b) and (2024).

consumption. Clearly it does not make sense to remain passive in the face of known risks, particularly when our knowledge of and development in agricultural possibilities both on the ground and in the laboratory is increasing exponentially.[49] Proactive plans can and should be made. Objectives can and should be set. I suggest that the most efficacious approach would be to take a radial view, one free of predetermined ontological targets. An approach that assumes responsibility for all of the effects generated, intentional, unintentional, and everything in between. We decide what 'nature' is and what it means to protect it. The planet is an interconnected whole such that deciding "what nature we want" also means deciding what we plant and where, what we eat. Just as the pitiless exploitation of natural resources for industrial productivity has had disastrous and sometimes unexpected consequences, a relationally uninformed approach to food production, trade and even innovation will fail to deliver desired results. Acknowledging and understanding relationships means taking seriously both shared and contrasting needs across the planet.

Legal targets often make use of quantitative goals. One of the Nature Restoration Law targets is "to ensure that, by 2030, at least 30 % of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity." Restoration presumably includes reduction of human water use. Water is, however, of course essential to agriculture, and the very climate effects these measures are meant to contrast have already wreaked havoc with water access. By way of illustration, in 2022, Spain experienced its hottest year on record. The long drought that accompanied this heat wave caused water reservoirs to drop to critical levels. The Spanish government responded by setting new limitations on the amount of water that could be drawn from the Tagus River. Water transfer from the Tagus irrigates 70% of the fruit and vegetables exported by Spain. Indeed, the water transfer system from central Spain reservoirs to fruit orchards in Valencia and Murcia was one of the largest hydraulic engineering projects ever carried out in the country and contributed to its development as a major fruit and vegetable exporter. The Supreme Court ruled that "the Tagus must have a rate of water flow that's considered 'ecological', which technicians say means it must not fall below 8.65 cubic metres per second." But as one agricultural engineer of the small farmer's union decried at the subsequent protests in Madrid, "The environmental excuse and the protection of the natural ecosystem are not enough".[50] I would add that human flourishing is actually part of the "natural ecosystem" and as such cannot be considered to be separate. 'Flourishing' is qualitative, more than quantitative. What is relevant in this illustration is law's semantic power in making determinations that can potentially bridge the qualitative/quantitative division. The Spanish Court's definition of 'ecological' in this case has not included farmers (as farmers as opposed to merely water-consuming humans) as part of the ecology. The quantitative definition may be perfectly valid as a way to protect drinking water, but food irrigation is equally crucial to human survival. Law has the power to defend, discard or modify the categories upon which its rulings depend. A radial/relational ruling might seek to come up with new definitions of what version/vision of an 'ecosystem' needs to be protected and how.

[49] Among the more astonishing of recent declarations is Solar Food's "Making Food Out of Thin Air". This company produces "a laboratory grown micro-organism that, once dried, has the consistency of flour and a minimum 50% protein by volume". Available at: https://aim2flourish.com/innovations/making-food-out-of-thin-air. Accessed August 20, 2024

[50] Available at: https://www.reuters.com/world/europe/spanish-farmers-protest-against-plans-curb-water-supply-irrigation-2023-01-11/ Accessed August 20, 2024.

Radial visions of food and its related regulation schemes would likely imply shifting towards models that do not attempt to ship all "food" everywhere and instead respect the limitations of land and climate that condition reasonable production arrangements. It could mean rethinking some of the assumptions behind terms such as "food adequacy" upon which important organizations such as the FAO (Food and Agriculture Organization of the United Nations) depend.[51]Current gaps between social and nutritional analyses could benefit from conceptual bridge-making. In a fascinatingly counter-intuitive analysis, one scholar elaborates[52] how some of the key the assumptions that underly vast amounts of policy making in the US on food challenges in poor communities are simply unsubstantiated by scientific evidence. Headlines on what the evidence reveals include:

- available data does not strongly support the popular association between poor people and fatness
- poor people do not eat more fast food than richer people
- poor people are more, not less, likely to cook meals at home
- fruit and vegetable consumption isn't very well correlated with health outcomes except economically; those who generally eat more fruits and vegetables tend to be healthier because they also tend to be wealthier
- whereas the associations between income, BMI, fast-food consumption, and health outcomes are weak or nonexistent, the associations between income and chronic disease risk are robust.

The real barriers to adequate food in the US context, then, may be not having enough time or money to shop for food and the frequent impossibility that:

> ...people with meaningful relationships can eat together on a regular basis. The most significant barriers to that vision might include mass incarceration, the unpredictable work schedules of service-sector jobs, and the lack of affordable housing where the densest concentrations of those jobs are located. What would better serve the goal of food justice for these communities are criminal justice reforms: ending cash bail, eliminating mandatory minimum sentences, or working toward prison abolition. It is possible that supporting unionization efforts in the service industry and the fight for minimum wage increases and laws to protect workers' rights (e.g., mandating that work schedules be posted a minimum number of days in advance) would serve that community's needs better than community gardens or more produce in corner stores.[53]

Finn's observations point towards a vital aspect of another potentiality of law: its scope is wide ranging. The relations impacting food, as I have tried to show, encompass myriad domains from carbon trading to organic farming to laboratory-made nutrients. The law has the ability to intervene and facilitate in each and every one of these areas, as well as in areas that are less obviously connected to food, such as prison reform. Even more importantly, the law has *semiotic* potential. I have argued that thinking of food as a "thing" existing a priori is counterproductive to solving current food and environmental challenges. Instead, the relational flux that is food should remain present in all kinds of decision making, and this could imply allowing terminology and its meanings to remain open, changeable. If, for example, insects become more widely consumed due to their proteinic low-cost contribution to

[51] See Ricca's analysis of the FAO food adequacy definition in Ricca (2024).
[52] Finn (2019).
[53] Ibid.

global diets, regulations regarding insects will likely change, and with them the way we name them, they ways in which they are conceived. In short, pests may become snacks. The law has always been instrumental in supporting semantic transformations, indeed, it has often been noted that law makes its objects.[54] Consider this communication from "the Commission to the European Parliament, the European Council, The Council, the European Economic and Social Committee and the Committee of the Regions":

> In September 2021, more than 161 million people in 42 countries were acutely food insecure. Nearly one in three people in the world do not have access to adequate food and for about 3 billion people the costs of a healthy diet were out of reach. These numbers risk rising further and therewith falling further short of reaching the Sustainable Development Goals by 2030.[55]

'Food insecure', 'adequate food' and 'healthy diet' are all terms with legal stipulations attached, legal ramifications. They are not "objective" conditions but rather qualifications supported by value judgments. How they are defined in regulatory terms has far ranging implications for millions of people. In the last decades, imperialist logics have led to 'healthy diet' being defined in culturally tone-deaf or oblivious ways with environmentally and socially compromising results.[56] If we allow that even the word "food" is shifting at all times, this makes these terms even less stable. But it also provides opportunities for law, which can use its semantic interpretive privileges to construct solutions.

The days of widespread self-sufficiency when it comes to food are long gone. Modern humans depend on their communities to eat, to survive. Legal systems are involved in every aspect of food, from what can be produced (and where and how), to how it can be transported and sold and even where it can be eaten. The role of law in reshaping new possibilities is therefore critical. New definitions of what is included in the categorical spectrum of a term like 'ecological needs' could have conspicuous effects on what are currently stagnant ponds of injustice. I have written elsewhere about lawsuits leveraging the human right to health to change regulations for environmentally polluting companies. Several South American countries have included 'rights of Nature' in their constitutions and legal frameworks. The possibilities for categorical regeneration are limitless and it may be the law that has the best chance of generating major change. One first step might be to take a good hard look at whether or not 'restoration' is the best way to work towards sustaining "a healthy planet and delivering benefits essential for all people". The next could be to invite other concepts to the table. An open ended semio-spatial view to what food and environment are would leave room for a range of different voices to be heard, from the bottom up rather than from governments down. If justice is the goal, then the answer to my earlier rhetorical question of whose environments will be sustained can only be: everyone's.

54 Ricca (2023a), Dewey (1924).

55 European Commission, Directorate-General for Research and Innovation (2022).

56 Whether we look at hunger programs in tropical areas designed by northerners and providing imported costly foods that not part of native diets or the ever-growing propensity of the rich to consume foods that come from far flung places because of their perceived salutary qualities (e.g, quinoa as discussed above), how we define "healthy" has decisive consequences for all people and environments.

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