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Farm to Fork: EU's Strategy for a Sustainable Food System¹

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Abstract

The interrelationship of EU's answer to the question of sustainable food systems is a pertinent issue when it comes to recognising the intrinsic relation amidst healthy people, societies, and a healthy planet. It is a strategy that is central in the EU Commission's agenda, to reach the United Nations' Sustainable Development Goals. It is paramount to understand the overall matrix of an agricultural and economic sustainable future, present and future goals calling out to members states for immediate need to help reshape sustainable solutions that will impact future generations. An outline of EU's previous environmental framework will be examined comparatively to the current which pledges climate neutrality by 2050 binding this into Climate law. US President, Jo Biden in his first days in office ratified the Paris Agreement for a carbon free grid by 2035 and net zero emissions by 2050 reconvening US's meaningful participation in the global climate network and, economic growth. Focus on key areas of study, environment, food, economy, future generations, and areas of reassessment will be viewed within the scope of shaping a perspective that the Green Deal and food sustainability is not only a call to reform previous economic models, but to address the elephant in the room; Can technologies guide us to a better future? Can they create new jobs? Provide better work opportunities? Support local farmers? Decrease food waste? Solve hunger? Save the planet? Is the Green Deal and Farm to Fork a utopia, a dream, or a sustainable reality?

Keywords: environment, food, economy, future generations, Green Deal, Farm to Fork, transition, GMO's, health, sustainability.

Introduction

The Farm to Fork strategy is the core of the Green Deal which thoroughly addresses the question of sustainable food systems while recognizing the intrinsic relation amidst healthy people, societies, and a healthy planet. It is a strategy that is central in the Commission's agenda to reach the United Nations' Sustainable Development Goals (SDGs).

On 21 April 2021, the European Commission welcomed the provisional agreement between the co-legislators on the European Climate Law. As one of the key elements of the European Green Deal, the European Climate Law entrenches the EU's pledge to reach climate neutrality by 2050 setting its long-term target of reducing net greenhouse gas emissions by at least 55% by 2030. The EU Parliament committed itself to make Europe the first climate neutral continent, binding its pledge into EU law. Moreover, US President Jo Biden in his first day in office reconvened the Paris climate

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agreement with an ambitious agenda for a carbon free grid by 2035 and net zero emissions by 2050, (Kaufman, 2021). The question is, Does the Green Deal by way of Farm to Fork address the challenges of a sustainable food system or, is it just another characteristic of EU's current economic model?

1. F2F A Solution for a Sustainable Food System

The conception of sustainability firstly needs to be examined by addressing the question, what is a green economy? A green economy is perceived differently by different individuals, groups, societies. An explanation by the UNEP is, “a green economy is one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive.” (UNEP, 2011). Alternatively, civic society movements view green economy as, “just another facet of the current financial phase of capitalism, which also makes use of old and new mechanisms, such as the deepening of the public-private debt, the hyperstimulation of consumption, the concentration of ownership of new technologies, carbon and biodiversity markets, land grabbing, increased foreign ownership of land, and public-private partnerships, among others.” (Declaration of the People's Summit at Rio+20, 2012).

In the last few years discussion around sustainability has become an integral part of the global agenda. This is mostly due to recent scientific findings, narratives and experiences of environmental degradation and climate change that elucidate the need for new economic models.

1.1. A Closer Look at Farm to Fork Strategy

Farm to Fork strategy, according to the Commission's Family Farming Knowledge Platform is outlined as, ‘A sustainable food strategy key to achieving the goals of the EU's Green Deal. This strategy sets out the regulatory and non-regulatory measures needed to create more efficient, climate-smart systems that provide healthy food, while securing a decent living for EU farmers and fishermen,’ (Nations, 2020). Key areas which give rise to both consensus and debate of EU's Farm to Fork Strategy through its Green Deal could be analyzed through the debate of its economic targets, energy and environment. When it comes to economic trade the means of measuring economic growth and prosperity impacts global trade, consumption patterns and production, therefore raising questions of deepening globalization, growth and environmental sustainability. By mobilizing trade policy through EU's Green Deal and the United Nations Sustainable Development Goals (SDG's), together these could sustain trade asymmetry, human-up development, individual rights. For instance, support for local producers, specifically, locally based food systems, which are an integral component for

sustainable agriculture, provide for local economies and sustainable livelihoods to prosper while protecting the environment. Notably, with the support of F2F strategy local food systems based on small scale rural production make domestic markets more accessible for family farmers. This allows farmers to maximize their economic growth while producing food within the framework of sustainable strategies outlined in F2F and the European Green Deal. Sustainable locally based rural economies are contributing factors in promoting healthy people, healthy societies, and a healthy planet. Moreover, energy distribution shapes how our societies and economies operate. If all global partners appreciate the need to further increase energy efficiency, promote energy conservation, transform the industrial structure, diversify energy supply this in turn, could increase the world's consumption of renewable energy sources by 20%. When going deeper into the question of environment, conceptions that recognize nature's true value have profoundly changed how governments, societies, lawmakers, policymakers protect the environment, within the scope of safeguarding it for future generations.

1.2. Food, Technology & Investment

EU's Green Deal shifts from the traditional economic model, specifically in 2019 the world witnessed a series of natural disasters, where among many, the flooding of 100,000 rivers in Milan, and 40,000 in Paris, gave way to grave concerns among civic societies worldwide who shared their worries on cardboard signs that read, "THERE IS NO PLANET B! DON'T BURN OUR FUTURE. THE HOUSE IS ON FIRE!" (Klein, 2019). This called for the urgent need to transform foregoing economies and policies into those that would protect the future of our planet.

The Green Deal sharply moves from previous environmental approaches which were aimed towards reducing consumption that, in effect resulted in degrowth. Within this reason, despite warnings, environmental practices were unpopular among governments and business communities alike particularly when it came to weighing their economic growth. However, one of the largest sources of certainty in the European Green Deal is that sustainable farming practices are supported by Research and Innovation (R&I) which receive funding from Horizons 2020, a multiannual EU funding programme aimed to stimulate research projects. Interestingly, for the period 2014-2020 H2020 invested an estimated sum of 80 billion euros (EMDESK, 2020), while for the period 2021-2027 funding is estimated to reach a staggering 100€ billion (Commission, Horizon Europe, the Next EU Research & Innovation Investment Programme (2021-2027), 2019). Significantly, the H2020 covered three initiatives, the 7th Research Framework Programme (FF7), the Competitiveness and Innovation Framework Programme (CIP), and the European Institute of Innovation and Technology (EIT) all dedicated to working with local regions which together with the F2F would help launch rural products

while solving crosscutting problems with synergies previously developed under the Common Agricultural Policy (CAP). Together, these procedures will be promoted in alignment with other EU programs to maximize projected outcomes of the F2F strategy (Commission, *What is Horizon Europe?* 2019).

Moreover, public support for human nutrition research has increased over the past several decades. Thus, there is ample data to promote the list of objectives outlined in the EC's policy to support a realistic case of certainty. Horizon 2020 program aimed to bridge the gap between nanotechnology research and markets. Moreover, by implementing nanotechnology this increases potential contribution for sustainable growth, competitiveness, environment, and livelihood that together develop an undisputable bond between sustainable growth and R&I. However, it needs to be underlined that a number of barriers do still need to be addressed in order to leverage large scale market introduction of innovative, safe and sustainable nano enabled products (Commission, *European Commission Programs*, 2020). Should nanotechnology become a more popular process, food fortification, specifically, nanoencapsulation (Jiwan Singh, 2017) could create a narrative that sustainable farming does in fact leverage sustainable economic growth. Should this be the case, it could essentially stimulate biofortification in EU rural products by means of agronomic practices, conventional plant breeding, and modern biotechnology that will then increase nutrient levels in crops during plant growth as for instance iron biofortification in sweet potatoes and zinc biofortification in wheat (Programme, 2020). Therefore, through R&I, the main components of F2F strategy become an even more realistic and, most importantly, the subject of food waste will be sustained while simultaneously growing economic opportunities. Moreover, upscaling is a cost-effective response that has gained footage in R&I, especially when looking at the successful case of Greek yogurt and its entrance into the food market. Specifically, it has earned its popularity in light of its lucrative process, resource efficiency and sustainability management. Upscaling is a technology that is functional, accessible and that works well for farmers, consumers, and the environment.

1.3. The Question of GMO's

What are the GMOs? Are they harmful to people and the planet, or could they serve as a guide to a better future? To begin with, many people feel confused or reluctant when it comes to the topic of Genetically Modified Organisms. Environment contamination caused by toxic chemicals was an immediate signal for the need to discover sustainable technologies to protect the environment and human health. Many physicochemical technologies that are currently applied to decontaminate and safeguard the environment as well as human health are technologies that are costly and chemical-consuming, which in effect cause secondary pollution and, as a result are not environmental-friendly.

An alternative solution is bioremediation technologies which use microbes and, plants together with their enzymes are viewed as eco-friendly and more sustainable technologies in light of their self-sustainable and cost effect nature. When it comes to agriculture genetic modification this process is expediated through the process of a scientific techniques that gives plants a specific desired trait. A common example is BT corn that has been genetically modified to release a toxin that helps resist pests which consequently has reduced the use of harmful pesticides by 37%. The largest source of uncertainty is in the 2050 climate-neutral Green Deal and F2F strategy with reference to the reduction of the use of pesticides and fertilizers. Notably, the EC targets to reduce the use of pesticides and antimicrobials by 50%, fertilizers 20%, and organic by 5% no later than 2030. Moreover, GMO's have been technical modified to survive harsh weather conditions, diseases, that have resulted in a higher yield for farmers, which in turn bring down the cost for both consumer and farmer (Ryan Raman, 2020) while sustaining the environment.

On the other hand, global grassroots organizations namely, Slow Food movement, (Food, 2015) supports that Genetically Modified Organisms (GMOs) present a serious threat to food sovereignty, farmers livelihoods, the environment and biodiversity. According to this grassroots movement, although GMOs are often demonstrated as the answer to hunger and food security, the problem remains yet to be solved. In fact, Slow Food perceives GMO's development and production, as many civic society movements already do, as a green economy which satisfies the economic interests of multinational corporations which contribute to the increase of corporate control, rather than to the need to feed increasingly expanding populations. Slow Food has expressed their deep concern about GMO's being included in the F2F strategy, in that the subject of food sustainability has polarized civic society, governments, groups, on a social, economic and political level, while in the field of science GMOs have developed a space for biology and technology to explore food sustainability through biotechnology (Agapakis, 2020).

1.4. Food Waste

The EC's model is very effective in its underlining points of food waste. Indeed, if this is not addressed, a sustainable rural economy is doomed to a "boom and bust" scenario. When it comes to food waste, EU's third largest country in terms of population before Brexit, the UK, which counts 67,886,011 inhabitants (Meter, 2021), food guru and activist Jamie Oliver had to say that the average British family tosses £680 worth of food annually which adds up to a staggering £12 billion nationwide (Oliver, 2020)! This is the equivalent of 86 million chickens alone wasted away every year in the UK. Sigismondi reported to the World Economic Forum in 2014 that on a global scale approximately 1.3 billion tons of local food gets wasted or lost annually (Sigismondi, 2014)!

Minimizing food waste is vital to maintaining a responsible and sustainable food system. Reducing maximal surplus unquestionably allows for better distribution for healthy food which in turn sustains the enormous strain of the planet's resources. If, however Europe wants to continue this path more detailed attention is required in sustaining the rural economy and small-scale farmers.

1.5. A resilient, healthy, equitable, ecological, and overall sustainable food system

There are points in the Farm to Fork strategy that perhaps call for reassessment. Particularly, the current plan does not refer to past strategies that could perhaps be viewed as slightly problematic. Namely, labor exploitation and, marginalized local farmers are broadly linked to the industrial food system. This needs to be examined further if, the European Green Deal and sustainable farming is to uphold a fair, healthy and environmentally friendly food system. Moreover, The F2F strategy seems limited in recognizing agroecology's role in the potential European food system. This immediately restricts support of small-scale producers which could add to farm concentration accelerating even further the vaporization of small-scale farmers who notable are the heart of agroecology and the sustainable food system. Subsequently, sustainable food production, specifically in the context of the pandemic, perhaps requires an even more ambitious target. A possible suggestion could be to increase biodiversity and soil fertility, which in turn would reduce erosion, contamination of soils, water, and air. If such a proposal were to be applied it would in effect support its adaptation to climate change, which in turn would decrease energy consumption. While the approach by F2F strategy does highlight this, and indeed does go that extra mile to appreciate the potential of organic farming, especially in relation to the new and young generation of farmers, still, it falls short in defining organic agriculture, and next to no attention is paid to farm renewal, access to land, and extensive livestock farming.

Significantly, F2F strategy supports job creation in the food and agriculture sector however, without outlining job description and, for whom the job will be created. Here, a clearer vision and leadership is required in that, if the EC wants the Green Deal and sustainable farming initiative to be viewed through a lens of a sustainable strategy. This will not only protect the environment, but additionally create a new green economic model that considers and defines work opportunities within the rural sector, develops gender equality, secures and dignifies working conditions and living wages, which are all are paramount if this policy is to work. Within this scope, F2F again needs a slight revision when it comes to legal rights and legal safe channels, which both need to be integrated into the strategy so as to secure third-country workers, migration and asylum policies, like those outlined in the Dublin Regulation. Most importantly these provisions need to become conditionalities on CAP payments (Euractiv, 2020) on the bases of respect for labor rights. Moreover, the 2017 Dublin

Regulation on migration cooperates with EU member states so as to facilitate the regularization of all migrants (European Commission, 2020).

Consequently, F2F creates an efficient, healthy, and climate-smart agri-food system where the EC ensures new initiatives and targets coherent with EU legislation. Specifically, Geraldine Kutas, Director General at CropLife Europe, expressed that those businesses understand the need for pesticide reductions and are open to discussions that encompass more "realistic" targets, stating that, "a reduction rate of 50% by 2030 is not realistic and will not have the desired effect of having a more sustainable food production model in Europe. The objectives presented today should be taking the farming industry on a journey to transform, not without sacrifices, but in collaboration with all parties involved in producing our food" (European Commission launches Farm to Fork strategy, 2020). In this respect, perhaps the EC needs to sustain a consensus strategy with EU representatives before presenting F2F strategies to the rural sector.

Conclusions

The European Green Deal and F2F strategy do promote a fair, healthy and environmentally friendly food system. While these strategies present a food system approach from a primary production consumer, still, they are welcomed from the long-standing need to tackle food matters and challenges. The food-environment nexus in relation to cost efficiency reflect real costs in terms of limited resources, pollution, Green House Gas (GHG) emissions and other externalities. The F2F's pledge to develop shorter food supply chains, to reduce long-haul transportation of produce, and to also regulate unsustainable crops in the hyper intensive food chain, take EC's sustainability policy to the next level. Ergo, the European Green Deal and F2F strategy fortify the concept of "think locally act globally" in that their strategy actively supports and strengthens local networks along with their economies which in turn are sure to help improve small scale farmers, consumers and the environment.

When it comes to GMO's and the level of sustainable genetically modified organisms, it is solely not a question of technology. Interestingly, when creating food through science, otherwise referred to as artistic engineering, according to Professor Agapakis, the renowned, robust synthetic biologist explains that synthetic biology is in fact an integral part of us and, what we eat. Therefore, by developing a fusion between biology and technology what can be achieved? A future that is open to choices which in turn will create awareness that could modify the way we eat (Agapakis, 2020). Professor Agapakis has been known to create controversy to the already much controversial concept of GMO food production, but does she? Or does she prove that technology through biology can develop a synthesis that can cultivate food. Although robust, sceptics from the environmental and

farming communities who question alternative methods of food cultivation could perhaps contemplate the conception. The underlining question here is, should they? When examined through the lens of the pandemic, in its wake COVID-19 sent unrepresented shockwaves which spiraled the food system out of control in its first 100 days. Within this perspective, when weighing the nature of genetically modified food to that of global starvation feeding the earth's population and people's livelihood without question takes precedence.

Finally, the EC has created the F2F strategy that is targeted to sustain health and prosperity through a series of ambitious strategies. Moreover, why consider Farm to Fork strategy? If the EC succeeds this could well mean that the challenge for sustainable farming and a green economy could be achieved while safeguarding the environment, this in turn could set the precedent for the green economic model based on EC and UN values and initiatives that may be adopted on a global level leaving present pressing issues of sustainability in the past.

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