

**Towards sustainable agriculture**  
 Prepared by IUCN's EU Policy Advisory Group  
*September 2018*



Photo: Pixabay - Ferenc Barna (CC0)

<b><i>Introduction: why this paper?</i></b>	<b>2</b>
<b><i>Agriculture and our environment: the challenge</i></b>	<b>3</b>
<b><i>The broader framework: the Sustainable Development Goals</i></b>	<b>5</b>
<b><i>Natural capital and risk management</i></b>	<b>6</b>
<b><i>Consumption</i></b>	<b>8</b>
<b><i>Sustainable agriculture in the EU</i></b>	<b>10</b>
 <b><i>Acknowledgments</i></b>	 <b>14</b>

*The IUCN European Policy Advisory Group (EUPAG), reaffirmed by the IUCN Council in its Decision C/83/28, plays a key role in helping shape the EU policy agenda to ensure alignment with IUCN's Programme. Its members belong to IUCN Member organizations or are members of IUCN Commissions.*

## Introduction: why this paper?

The agreed Agenda 2030 for Sustainable Development to which the EU and its Member States are committed sets a crucial challenge: the balanced implementation of all and each of the SDGs in an integrated manner, keeping in mind their direct and indirect connections to sustainable and healthy food. In this context, ensuring a sustainable agriculture sector in the future is crucial for the EU, but also globally.

It is very important to acknowledge that agriculture plays a crucial role in European society, securing the production of sufficient and safe food and sustaining viable rural communities. Europe has a long history of intense use of its territory compared with other regions of the world –in any case, before the mid-1700s the human use of land was insignificant compared with contemporary changes in the Earth’s ecosystems<sup>1</sup>–. However, food-related policies and changing consumption patterns in the EU over the past decades have also resulted in negative effects and losses to society, according to scientific assessments, the systematic monitoring of environmental trends and human health indicators. The past emphasis in the EU on security of supply is now having unforeseen consequences, e.g. large-scale food waste as well as adverse impacts on the environment and consumer well-being and health. Therefore, addressing the adverse impacts of the current agricultural system –globally and in particular in the EU– is a must for organisations working for the conservation of nature and for the equitable and ecologically sustainable use of natural resources.

*With this in mind, IUCN has developed this document as a structured first compilation of key evidence on sustainable agriculture, aiming to contribute to and inform discussion about the future of agriculture. The paper dedicates a specific chapter to the EU Common Agricultural Policy (CAP) post-2020, as this policy and the substantial EU budget attached to it are currently undergoing review for the post-2020 period.*

*This document cannot and does not intend to be comprehensive nor cover related issues such as water, the broader bioeconomy, nitrogen pollution, the role of plastics in food consumption and others. This is a first paper of its kind for IUCN, and should not be considered as the end-point, but rather as the start of a process which will continue over the coming years: contributing to sustainable agriculture while also exploring options for cooperation with relevant actors.*

---

<sup>1</sup> United Nations Convention to Combat Desertification. (2017). *The Global Land Outlook*. 1<sup>st</sup> edition. Bonn, Germany. <https://global-land-outlook.squarespace.com/the-outlook/#the-bokk>

## Agriculture and our environment: the challenge

Agriculture is the key foundation of human food systems. According to the UN Food and Agriculture Organization (FAO), the demand for food is likely to grow by 70% by 2050<sup>2</sup>. Agriculture depends on nature, for soil fertility, water, pollination, pest control and so on. However, unsustainable agriculture is at the same time the largest driver of species loss and conversion of natural habitats, and the greatest threat to natural genetic diversity globally<sup>3</sup>. In particular in the EU, around half of the EU's land is farmed, and agriculture is the most frequently reported pressure with negative impacts on the state of nature in Europe<sup>4</sup>.

The analysis of “A Safe Operating Space for Humanity” (2009<sup>5</sup> and its update in 2015<sup>6</sup>) identifies agriculture as the major source of risks in relation to the “planetary boundaries” defined in the analysis. Their analysis identifies the agricultural activity as one of the main drivers of the planetary boundaries in the high or increasing risk zones, and a significant contributor to the fifth; in particular to biosphere integrity, biogeochemical flows, land-system change, freshwater use and climate change<sup>7</sup> (see next figure).

Steffen *et al* identified climate change and biosphere integrity (which includes what was previously biodiversity) as the two core boundaries and stated that each has the “potential on its own to drive the Earth System into a new state should they be substantially and persistently transgressed”<sup>8</sup>. Within this framework, biodiversity loss far exceeds the safe levels, and reaches the highest overshoot level of the nine boundaries. Hughes *et al*, including the originator of the planetary boundaries concept, Johan Rockström, (2013<sup>9</sup>) have argued that, given the inherent interconnectedness of biodiversity, local changes in biodiversity soon scale up to regional and global levels. This has implications for the design and performance measurement of sustainable agricultural policy and shows the importance of local policy in the delivery of sustainability goals at larger spatial scales.

---

<sup>2</sup> See references to food security from the European Commission at: <https://ec.europa.eu/jrc/en/research-topic/global-food-security>

<sup>3</sup> See, eg:

<http://www.isaaa.org/kc/Publications/pdfs/documents/KAMmann2004.pdf>

<http://www.grida.no/publications/rr/food-crisis/page/3569.aspx>

<sup>4</sup> European Environment Agency. (2015). *State of nature in the EU: biodiversity still being eroded, but some local improvements observed*. <http://www.eea.europa.eu/highlights/state-of-nature-in-the>

<sup>5</sup> Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., De Wit, C. A., Hughes, T., Van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R. W., Fabry, V. J., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., and Foley, J. A. (2009). *A safe operating space for humanity*. *Nature*, Vol 461,24. <https://www.nature.com/articles/461472a>

<sup>6</sup> Steffen et al. 2015. Planetary Boundaries: Guiding human development on a changing planet. *Science* Vol. 347 no. 6223.

<http://www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html>

<sup>7</sup> Campbell B. MBeare D. J., Bennett E. M., Hall-Spencer J. M., Ingram J. S. I., Jaramillo F., Ortiz R., Ramankutty N., Sayer J. A., and Shindell D. (2017). *Agriculture production as a major driver of the Earth system exceeding planetary boundaries*. *Ecology and Society* 22(4):8.

<https://doi.org/10.5751/ES-09595-220408>

<sup>8</sup> *Ibid.* at 6

<sup>9</sup> Hughes T. P., Carpenter S., Rockström J., Scheffer M., Walker B. (2013). *Multiscale regime shifts and planetary boundaries*. *Trends in Ecology and Evolution*, 28(7): 389-395.

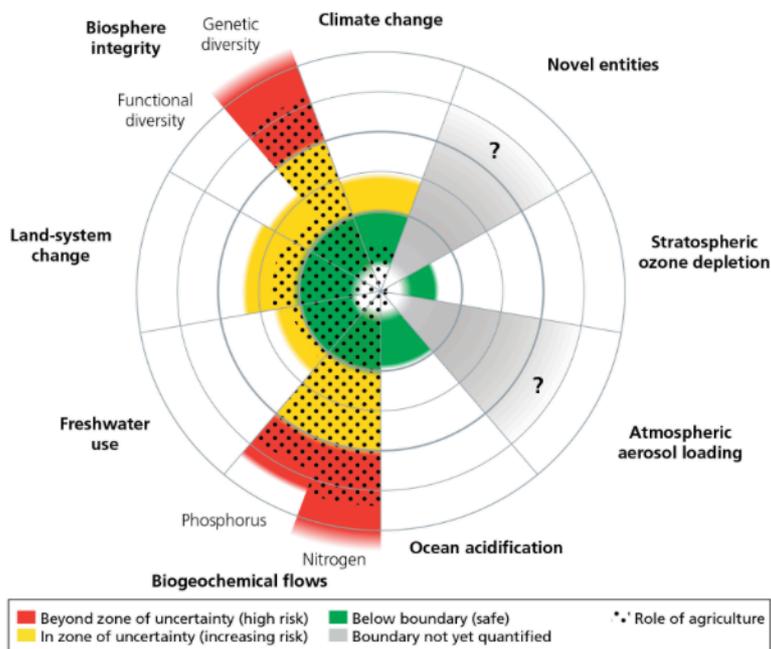


Figure from: Campbell B. MBeare D. J., Bennett E. M., Hall-Spencer J. M., Ingram J. S. I., Jaramillo F., Ortiz R., Ramankutty N., Sayer J. A., and Shindell D. (2017). *Agriculture production as a major driver of the Earth system exceeding planetary boundaries*. *Ecology and Society* 22(4):8.

The United Nations recently stated that “food production accounts for 70 per cent of all freshwater withdrawals and 80 per cent of deforestation, while soil, the basis for global food security, is being contaminated, degraded, and eroded in many areas, resulting in long-term declines in productivity”<sup>10</sup>. Between one quarter<sup>11</sup> and one third<sup>12</sup> of all land on the planet is affected by degradation, and two thirds of this is attributed to agriculture. It is estimated that there are only 60 years of farming left if current practices are maintained<sup>13</sup>. The global economic impact of land degradation has been estimated at up to €3.4 trillion in 2008, equaling 3.3–7.5 per cent of global GDP. Perhaps more worrying is that land degradation is undermining the long-term viability of agriculture: so it is clear that we have to find new ways of producing sufficient food<sup>14</sup> at a lower environmental cost<sup>15</sup>. The IPBES recently concluded that “avoiding land degradation and restoring degraded lands makes sound economic sense, resulting in, inter alia, increased food and water security, increased employment, improved gender equality, and avoidance of conflict and migration. In this sense, avoiding land degradation and restoring degraded lands are also essential for meeting the Sustainable Development Goals”<sup>16</sup>. As recognised during the last IUCN World Conservation Congress, we need to “transform our complex food production / consumption systems so that they do not degrade the biodiversity and ecosystem services on which they depend”<sup>17</sup>.

<sup>10</sup> United Nations Convention to Combat Desertification. (2017). *The Global Land Outlook*. 1<sup>st</sup> edition. Bonn, Germany. <https://global-land-outlook.squarespace.com/the-outlook/#the-bokk>

<sup>11</sup> For more information see: [https://www.unccd.int/sites/default/files/inline-files/LDN%20TS%20Technical%20Guide\\_Draft\\_English.pdf](https://www.unccd.int/sites/default/files/inline-files/LDN%20TS%20Technical%20Guide_Draft_English.pdf)

<https://www.unccd.int/sites/default/files/relevant-links/2017-06/Switzerland%20Speech%20Final%20100414.pdf>

<sup>12</sup> For more information see: <https://www.unccd.int/news-events/better-land-use-and-management-critical-achieving-agenda-2030-says-new-report-0>

<sup>13</sup> Arsenault, C. *Only 60 years of farming left if soil degradation continues*. *Scientific American*. <https://www.scientificamerican.com/article/only-60-years-of-farming-left-if-soil-degradation-continues/>

<sup>14</sup> Also in line with SDG 2 (Zero Hunger) and 12 (Ensure sustainable consumption and production patterns).

<sup>15</sup> ELD Initiative. (2015). Report for policy and decision makers: Reaping economic and environmental benefits from sustainable land management. [http://www.eld-initiative.org/fileadmin/pdf/ELD-pm-report\\_05\\_web\\_300dpi.pdf](http://www.eld-initiative.org/fileadmin/pdf/ELD-pm-report_05_web_300dpi.pdf)

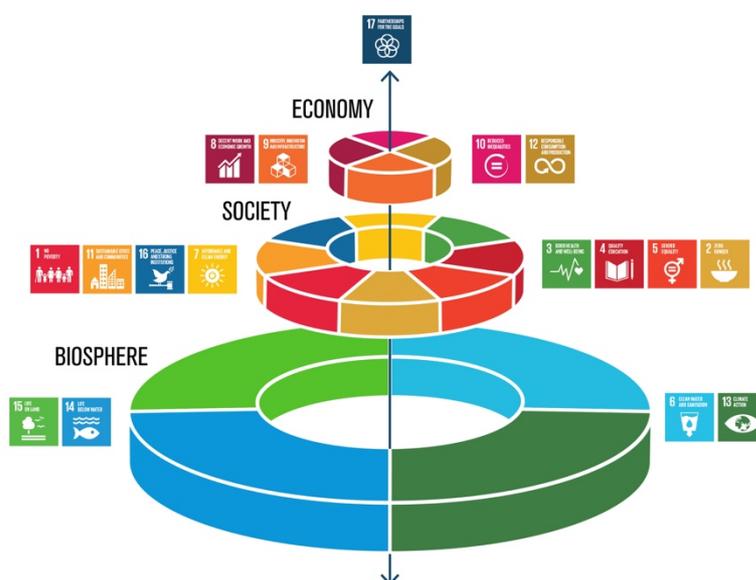
<sup>16</sup> IPBES, 2018. The assessment report on LAND DEGRADATION AND RESTORATION: SUMMARY FOR POLICYMAKERS. [https://www.ipbes.net/system/tdf/spm\\_3bi\\_ldr\\_digital.pdf?file=1&type=node&id=28335](https://www.ipbes.net/system/tdf/spm_3bi_ldr_digital.pdf?file=1&type=node&id=28335)

<sup>17</sup> For more information see: [https://portals.iucn.org/congress/sites/congress/files/EN%20Navigating%20Island%20Earth%20-%20Hawaii%20Commitments\\_FINAL.PDF](https://portals.iucn.org/congress/sites/congress/files/EN%20Navigating%20Island%20Earth%20-%20Hawaii%20Commitments_FINAL.PDF)

## The broader framework: the Sustainable Development Goals

The new Universal 2030 Agenda for Sustainable Development announced in 2015 the 17 Sustainable Development Goals (SDGs) as “integrated and indivisible, and balancing the three dimensions of sustainable development: the economic, social and environmental<sup>18</sup>”. The SDGs are premised on the notion that we cannot solve problems in isolation; so producing more food for a growing population (SDG 2- “Zero Hunger”) not only is intrinsically related with achieving good health and well-being (SDG 3 “Good Health and well-being”), but it requires healthy ecosystems (SDGs 14 & 15, “Life below water” and “Life on Land”). Therefore, a commitment for a sustainable healthy food future implies ensuring the health of our ecosystems<sup>19</sup>. In this sense, it is possible to identify a set of potential constraints and conditionalities that require integrated policy interventions. While no fundamental incompatibilities between goals have been found<sup>20</sup>, a careful balance is needed between achieving food for all and conserving and restoring ecosystems, including the balance between food- and non-food use of land<sup>21</sup>. In this sense, it is also important to highlight the need to advance the evidence-base for an adequate implementation of the SDGs, especially in relation with potential trade-offs between them.

All the sustainable development goals are directly or indirectly connected to sustainable and healthy food, as Johan Rockström and Pavan Sukhdev recently concluded. And more generally, it should be kept in mind that the economy should serve society so that it evolves within the safe operating space of the planet: economies and societies should be seen as embedded parts of the biosphere. The Stockholm Resilience Centre has illustrated this in the figure that follows<sup>22</sup>, a summary of the interdependence –one could call it hierarchy– between all SDGs:



<sup>18</sup> For more information on the SDGs, see:

<https://sustainabledevelopment.un.org/post2015/transformingourworld>

<sup>19</sup> See IUCN’s activity and information on SDGs:

<https://www.iucn.org/theme/global-policy/our-work/sustainable-development-goals>

<sup>20</sup> i.e. Where one target as defined in the 2030 Agenda would make it impossible to achieve another.

<sup>21</sup> International Council for Science (ICSU). (2017). *A Guide to SDG Interactions: from Science to Implementation*. [D.J. Griggs, M. Nilsson, A. Stevance, D. McCollum (eds)]. International Council for Science, Paris.

<https://www.icsu.org/publications/a-guide-to-sdg-interactions-from-science-to-implementation>

<sup>22</sup> See “How food connects all the SDGs”, from the Stockholm Resilience Centre website:

<http://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html>

## Natural capital and risk management

Broadly speaking, we risk undermining our current living conditions and economic and social system if we maintain business as usual (in all sectors, including agriculture). As scientists have recently warned, humanity might be about to cross a threshold which would likely cause serious disruptions to ecosystems, society, and economies<sup>23</sup>. In line with this, the term Anthropocene has risen in popularity since its coinage by Nobel prize-winner Paul Crutzen in 2000, including in academic journals. The term was formally suggested for adoption in to the geological timeline by the official group<sup>24</sup> responsible for investigating its adoption in 2016<sup>25</sup>. Agricultural expansion and intensification play key roles in several of the cited reasons, including the fossilization of the domestic chicken which “has become the world’s most common bird. It has been fossilised in thousands of landfill sites and on street corners around the world”<sup>26</sup>. This has led Crutzen to comment, 10 years after coining the term, that “agriculture must become high-tech and organic at the same time, allowing farms to benefit from the health of natural habitats”<sup>27</sup>. Waters *et al* (2016<sup>28</sup>) comment further on the global, geological implications of farming practices in the Anthropocene: “Soil nitrogen and phosphorus inventories have doubled in the past century because of increased fertiliser use, generating widespread signatures in lake strata and nitrate levels in Greenland ice that are higher than at any time during the previous 100,000 years”. The authors go on to note that this “expresses the extent to which humanity is driving rapid and widespread changes to the Earth system that will variously persist and potentially intensify into the future”.

As it is now well acknowledged, the erosion of natural capital poses threats to a continued national and global prosperity, yet political and economic systems are unprepared for responding to that risk. There are several reasons behind it, including the lack of accurate measure or value of the natural capital, or the challenges for economic models to reflect the dependencies between ‘capitals’. Actually, most cost-benefit analyses and economic methodologies used in everyday decisions assume that natural capital can be easily substituted by man-made capital, when, as has been argued by ecological economists such as Herman Daly, it cannot be substituted under ‘strong sustainability’ approaches that posit a critical natural capital<sup>29</sup>. Ekins *et al* provide a widely cited and comprehensive framework for the application of the concept of *critical natural capital* – the category of non-substitutable resources whose maintenance, as a stock, is essential for environmental sustainability<sup>30</sup>. Finally, there is also a lack of appropriate political and economic institutions to manage natural capital effectively<sup>31</sup>.

Not only is the invisibility of the natural capital in accounting a risk for our environment, it is also a financial risk. In 2013, a report commissioned by the TEEB for Business estimated in monetary terms the financial

---

<sup>23</sup> Steffen, W. et al, 2018. *Trajectories of the Earth System in the Anthropocene*. PNAS.

<http://www.pnas.org/content/pnas/early/2018/07/31/1810141115.full.pdf>

<sup>24</sup> Working Group on the Anthropocene. <http://quaternary.stratigraphy.org/working-groups/anthropocene/>

<sup>25</sup> As reported by The Guardian, 29/06/2016. <https://www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth>

<sup>26</sup> Zalasiewicz, J. (Chair of the Working Group), cited in *Ibid*.

<sup>27</sup> Crutzen, P. and Schwägerl, C. (2011). *Living in the Anthropocene: Toward a New Global Ethos*.

[https://e360.yale.edu/features/living\\_in\\_the\\_anthropocene\\_toward\\_a\\_new\\_global\\_ethos](https://e360.yale.edu/features/living_in_the_anthropocene_toward_a_new_global_ethos)

<sup>28</sup> <http://science.sciencemag.org/content/351/6269/aad2622>

<sup>29</sup> For an overview, see: Martins, N. O. (2016) *Ecosystems, strong sustainability and the classical circular economy*. Ecological Economics, 129: 32-39. <https://doi.org/10.1016/j.ecolecon.2016.06.003>

<sup>30</sup> Ekins, P., Simon, S., Deutsch, L., Folke, C., De Groot, R. (2003) *A framework for the practical application of the concepts of critical natural capital and strong sustainability*, Ecological Economics, 44(2–3): 165-185,

<sup>31</sup> Cohen, F., Hamilton, K., Hepburn, C., Sperling, F., and Teytelboym, A. (2017). *The wealth of nature: Increasing national wealth and reducing risk by measuring and managing natural capital*. Green Economy Coalition. <https://www.oxfordmartin.ox.ac.uk/publications/view/2607>

risk from unpriced natural capital inputs to production. The primary production and processing sectors analysed in the study were estimated to have unpriced natural capital costs totaling US\$7.3 trillion, related to land use, water consumption, GHG emissions, air pollution, land and water pollution, and waste<sup>32</sup>, which equals 13% of global economic output in 2009.

It is therefore crucial to make natural capital visible and to mitigate risks in order to provide a long-term framework for citizens, the economy, investments and finance. A number of methodologies, knowledge systems and tools exist in support for the evaluation of such risks<sup>33</sup>, as well as in support of environmental-economic accounting and reporting<sup>34</sup>.

From a finance perspective - both public and private - a risk mitigation approach will (continue to) provide a dynamic of its own in addressing the sustainability issues in long term finance- and investment decisions, and in particular in international supply chains in food products. Risk pricing may result in an increasing range of 'payments for ecosystem services' (PES), with carbon pricing and/or taxing as the major example. The SDGs could be considered as one of the most important tools to reduce risks. The concept of 'risk mitigation in the public interest' could provide a useful framework for the development of risk assessment tools, as well as a bridge between the public sector and private sector actors, including citizens/consumers<sup>35</sup>. It should be noted, however, that care must be taken to not increase different environmental risks while mitigating others under a PES framework that bridges public and private interests. For example, this has historically been the case in China, where the main afforestation PES scheme has resulted in poor quality forestry as local actors compromised long-term sustainability for quicker access to payments. poor ecological knowledge, advice, community and expert engagement as well as perverse incentives played key roles<sup>36</sup>. Carbon offsetting and storage using afforestation should take place within a regulatory framework that protects and enhances biodiversity via tailored local implementation, such as ensuring only native afforestation<sup>37</sup>.

---

<sup>32</sup> For over 1,000 global primary production and primary processing region-sectors under standard operating practices, excluding unpredictable catastrophic event (see TruCost. (2013). *Natural capital at risk: the top 100 externalities of business*. <http://naturalcapitalcoalition.org/wp-content/uploads/2016/07/Trucost-Nat-Cap-at-Risk-Final-Report-web.pdf>)

<sup>33</sup> For more information see:

-WBCSD Natural Capital Coalition Protocol Toolkit – <https://www.naturalcapitaltoolkit.org/>

- WRI Resource Watch – <https://resourcewatch.org/>

-Drawdown-project – <http://www.drawdown.org/>

-Sustainability Accounting Standards Board – <https://www.sasb.org>

-FOOD POLICY IN 2015–2016 – Reshaping the Global Food System for Sustainable Development IFPRI (USA):

<sup>34</sup> For more information see:

-UNSEEA – <https://seea.un.org/>

-EEA module – [https://unstats.un.org/unsd/envaccounting/eea\\_project/default.asp](https://unstats.un.org/unsd/envaccounting/eea_project/default.asp)

<sup>35</sup> SDG Compass – The guide for business action on the SDGs. Available at: [https://theshift.be/uploads/media/56c710ac12fba/2016.02.18%20ShiftCaf%C3%A9%20SDG\\_Compass\\_Guide.pdf?production-cbdfdc2C:/Users/sx02080/Documents/Bluetooth-uitwisselingsmap](https://theshift.be/uploads/media/56c710ac12fba/2016.02.18%20ShiftCaf%C3%A9%20SDG_Compass_Guide.pdf?production-cbdfdc2C:/Users/sx02080/Documents/Bluetooth-uitwisselingsmap)

<sup>36</sup> Yin, R., Z., M. *Ecological restoration programs and payments for ecosystem services as integrated biophysical and socioeconomic processes—China's experience as an example*. *Ecological Economics*, 73(15): 56-65. <https://doi.org/10.1016/j.ecolecon.2011.11.003>

<sup>37</sup> Cao, S., Chen, L., Shankman, D., Wang, C., Wang, X., Zhang, H. (2011). *Excessive reliance on afforestation in China's arid and semi-arid regions: Lessons in ecological restoration*, *Earth-Science Reviews*, 104(4): 240-245. <https://doi.org/10.1016/j.earscirev.2010.11.002>

## Consumption

The FAO forecast of demand for food foresees an important increase over the coming decades. Given these trends in consumption patterns globally and the concurrent environmental risks referred to above, the need to halt and reverse the degradation of biodiversity and ecosystems services on which food supply systems depend, is a matter of great urgency. Some actions can be already considered, such as reconsidering the way the current systems of production- and/or consumption subsidies, taxes and other incentives is designed and implemented, or maintaining and developing crop genetic diversity and local systems of production<sup>38</sup>. All in all, the demand/consumer aspects also need to be considered in discussions about sustainable agriculture.

Demand for food is an issue to be addressed in the broad sense of the word: in the case of the EU, consumers' interests in the choice of quality food for well-being and health as part of sustainable lifestyles is a fundamental factor to consider and act upon. The recent final report of the EU High Level Expert Group on Sustainable Finance<sup>39</sup> (2018) has identified *inter alia* the need to enable consumers to make informed choices and help incentivize sustainable production chains, recommending empowering them to express their preference for sustainable food production<sup>40</sup>. It is also important to keep in mind that there are close to two billion adults who are overweight on the planet, of which close to 650 million are obese, with a large number of these adults in the EU. A recent study categorised 51,6% of the EU adult population as overweight<sup>41</sup>. This is a key health concern: being overweight or obese is currently linked to more deaths worldwide than being underweight<sup>42</sup>. The number of overweight and obese individuals in addition to the over 450 million adults worldwide that are underweight, provides further evidence as to the unsustainability of global food systems<sup>43</sup>.

In the EU, estimates of food waste indicate about 88 million tonnes of food annually, with associated costs estimated at 143 billion euros<sup>44</sup>. This is equivalent to approximately 20% of the total food production in Europe. This has an important environmental impact, as for example it has been estimated that each tonne of food waste landfilled results in 4.2 tonnes of CO<sub>2</sub>-equivalent emissions<sup>45</sup>. As the United Nations states: "The widening gulf between production and consumption, and ensuing levels of food loss/waste, further accelerates the rate of land use change, land degradation and deforestation: in poor countries, food loss is primarily due to the lack of storage and transport while in wealthy nations, food waste is a result of profligacy and inefficiencies towards the end of the food supply chain"<sup>46</sup>.

<sup>38</sup> The Hawai'i Commitments can be found at: [https://portals.iucn.org/congress/sites/congress/files/EN%20Navigating%20Island%20Earth%20-%20Hawaii%20Commitments\\_FINAL.PDF](https://portals.iucn.org/congress/sites/congress/files/EN%20Navigating%20Island%20Earth%20-%20Hawaii%20Commitments_FINAL.PDF)

<sup>39</sup> Final Report 2018 by the High-Level Expert Group on Sustainable Finance. [https://ec.europa.eu/info/publications/180131-sustainable-finance-report\\_en](https://ec.europa.eu/info/publications/180131-sustainable-finance-report_en)

<sup>40</sup> The final report of the EU HLEG on Sustainable Finance can be found at: [https://ec.europa.eu/info/publications/180131-sustainable-finance-report\\_en](https://ec.europa.eu/info/publications/180131-sustainable-finance-report_en)

<sup>41</sup> EC, 2014, see: [http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Share\\_of\\_overweight\\_population\\_by\\_sex\\_and\\_age\\_2014.png](http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Share_of_overweight_population_by_sex_and_age_2014.png)

<sup>42</sup> See: <http://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

<sup>43</sup> See: <http://www.who.int/en/news-room/fact-sheets/detail/malnutrition>

<sup>44</sup> For more information on EU food waste, see: [https://ec.europa.eu/food/safety/food\\_waste\\_en](https://ec.europa.eu/food/safety/food_waste_en)

<sup>45</sup> Dinamix, Issue No. 2, February 2016. *Policy Report. A policy mix aimed at reducing impacts of agricultural production and consumption -Synthesis of potential impacts.* [https://dynamix-project.eu/sites/default/files/Dynamix%20Policyfield\\_roadmap\\_land\\_230316\\_0.pdf](https://dynamix-project.eu/sites/default/files/Dynamix%20Policyfield_roadmap_land_230316_0.pdf)

<sup>46</sup> United Nations Convention to Combat Desertification. (2017). *The Global Land Outlook*. 1<sup>st</sup> edition. Bonn, Germany. <https://global-land-outlook.squarespace.com/the-outlook/#the-bokk>

Ongoing developments in the economy, finance and expectations and attitudes of citizens and consumers can be expected to drive change in support for aligning action by private sector actors to the long-term objectives of the SDG agenda as issues of global public interest. Well-being and health are core concerns for citizens, and consumer choice should feature among the priorities for tackling food and farming related sustainability concerns (including fisheries). An important challenge that lies ahead is the maintenance of or transition to a sustainable balance between animal protein consumption and plant protein consumption by humans. On average, in 2017 an EU citizen consumed 22 kg per year of animal-based proteins and 16 kg per year of plant-based proteins<sup>47</sup> (FAOSTAT). Consuming protein from plant-based sources is much more efficient than from animal sources as it requires far less water, energy and land during the production and preparation stages. A larger share of plant protein consumption in human diets could more sustainably feed a growing population and middle class, and can contribute significantly in helping the EU to reduce its carbon footprint and nutrient losses<sup>48</sup>.

### EU's animal husbandry & land use footprint

Over recent years the EU 28 has used a relatively constant amount of 30 million metric tonnes of soy meal equivalent as animal feed, for livestock, pigs, chicken, aquaculture and other<sup>49</sup>. With 3 metric tonnes/ha as a rough average production figure in Argentina and Brazil<sup>50</sup>, where most of Europe's imported soy comes from, we estimate a footprint of soy as animal feed in EU28 of 10 million hectares in Latin America<sup>51</sup>. This does not include all recently deforested or drained land, for example in particular the Argentine pampa, but taking into account Indirect Land use Changes (ILUC) we may consider this figure as indicative of the pressure of European animal husbandry on natural resources in Latin America.

It is therefore important to reduce the land-use footprint of European animal protein consumption, via a human diet with a better balance between plant and animal protein. The recent European Strategy for the promotion of protein crops adopted by the European Parliament<sup>52</sup> aims to stimulate European feed production. However, most probably the full 10 million hectares of soy mentioned above cannot be replaced by European soy and other protein crops without resulting ILUC effects. Consequently, a combination of measures would be recommendable for the EU to reduce its footprint: trade chain and landscape measures, consumption reduction and responsible replacement of import soy. Furthermore, diplomatic relations with producing countries and large consumers such as China are important to curb deforestation. The recently formed group of seven signatory countries of the Amsterdam Declarations for Deforestation Free Value Chains seeks to strengthen measures against deforestation in member countries through agreements with the private sector and producer countries, as well as through strengthened European policies<sup>53</sup>.

<sup>47</sup> FAOSTAT, 2017. Available at: <http://www.fao.org/faostat/en/>

<sup>48</sup> European Environmental Agency. (2017). *Food consumption – animal based protein*.

<https://www.eea.europa.eu/airs/2017/resource-efficiency-and-low-carbon-economy/food-consumption-animal-based>

<sup>49</sup> USDA Foreign Agriculture Service (2018). Gain Report: EU-28 Oilseeds and Products Annual 2018. Available at: [https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Oilseeds%20and%20Products%20Annual\\_Vienna\\_EU-28\\_3-29-2018.pdf](https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Oilseeds%20and%20Products%20Annual_Vienna_EU-28_3-29-2018.pdf)

<sup>50</sup> Figures from the Ministries of Agriculture of both countries. Production of soybeans per hectare can be also found at FAOSTAT, 2016. Available at: <http://www.fao.org/faostat/en/>

<sup>51</sup> This figure also was given by Kross & Kuepper 2015 referring to 2013. A similar figure is expected for 2017/18 (see above).

<sup>52</sup> The European Strategy for the promotion of protein crops adopted by the European Parliament can be found at: <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2018-0095+0+DOC+XML+V0//EN&language=EN>

<sup>53</sup> The Netherlands, Germany, France, Denmark, UK, Norway, Italy. <https://www.euandgvc.nl/documents/publications/2015/december/7/declarations>

## Sustainable agriculture in the EU

### *How we got here: key ideas about the history of agriculture in the EU*

Looking back at demographic and socio-economic trends over the past 150 years, it is impressive to observe the scale of human intervention on the planet, and the scale of the increasingly adverse impacts on the natural functions of biodiversity –or on “nature” more generally. These trends are indicative of the unprecedented leap towards large-scale human settlements globally – which are still growing – and unprecedented, steadily increasing levels of demand for a much more abundant and varied “basket of food” on a finite planet, with finite natural resources.

Looking more closely at food during the 20<sup>th</sup> century post-war period (after 1945) in Europe, one imperative was securing safe and cheap food production for the population. This was a priority for the founders of the European Community in the 1960s, and continued to be so over the following decades. This was the basic objective of the longstanding EU Common Agricultural Policy (CAP) – with some important changes towards the end of the last century and first decade of the current one. In 1992, the CAP shifted from market support to producer support; price support was replaced with direct aid payments, and there was an increased emphasis on food quality, protecting traditional and regional foods and caring for the environment. Then, in the early 2000s, the scope of the CAP was widened to include rural development, starting to focus on the economic, social and cultural development of Europe with targeted multi-annual programmes. Farmers became more market oriented and, in view of the specific constraints on European agriculture, they started receiving income aid, while being bound to respect specific environmental, animal welfare and food safety standards. As acknowledged by the EU High Level Expert Group on Sustainable Finance “agriculture in Europe today is strongly characterised by ‘intensive’ production (...), but the environmental and health costs of this model, which are well recognised by European policy-makers, have become increasingly evident”<sup>54</sup>.

The latest reform which is currently ongoing, while it initially pointed in the direction of stronger environmental performance (as signaled by the EC Communication from November 2017<sup>55</sup>, from now on referred to as the “the EC CAP Communication”), a reduced budget and enhanced powers for Members States (in the recent EC proposal on a future EU Common Agricultural Policy<sup>56</sup> - from now on referred to as the “the EC post 2020 CAP proposal”) leaves a number of open questions about how it will really perform on environmental matters.

### *The future of agriculture in Europe: the CAP post-2020*

Europe has an important responsibility in keeping up its high environmental standards<sup>57</sup> and leadership on this issue. With this premise, and based on the information from the previous chapters, this chapter reflects on the specific current European discussion on the future EU CAP. The EC CAP Communication, the EC Communication on the future Multiannual Financial Framework (‘A Modern Budget for a Union that Protects, Empowers and Defends The Multiannual Financial Framework for 2021-2027’<sup>58</sup>, from now on

---

<sup>54</sup> Final Report 2018 by the High-Level Expert Group on Sustainable Finance. [https://ec.europa.eu/info/publications/180131-sustainable-finance-report\\_en](https://ec.europa.eu/info/publications/180131-sustainable-finance-report_en)

<sup>55</sup> See the EC Communication at: [https://ec.europa.eu/agriculture/sites/agriculture/files/future-of-cap/future\\_of\\_food\\_and\\_farming\\_communication\\_en.pdf](https://ec.europa.eu/agriculture/sites/agriculture/files/future-of-cap/future_of_food_and_farming_communication_en.pdf)

<sup>56</sup> See the EC proposal at: [https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap\\_en](https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en)

<sup>57</sup> As acknowledge by the own EU, see: [https://europa.eu/european-union/topics/environment\\_en](https://europa.eu/european-union/topics/environment_en)

<sup>58</sup> See the EC Communication at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0321>

referred to as the “the EC post-2020 budget proposal”) and of course the recent EC CAP post-2020 proposal, form the basis for discussion in this chapter.

### *The CAP’s role in implementing the SDGs and the biodiversity and climate objectives*

The EU is committed to implementing the 2030 Agenda for Sustainable Development and the SDGs internally and globally. The imminent review of the EU budget and of the CAP is a great opportunity to transform the food production and consumption patterns in the EU to ensure their long term sustainability<sup>59</sup>. As a recent IDDRI article states, the “SDGs need to become more than just a preamble to the framing of sectoral policy reforms, and must (i) be used to identify the key targets that the policy intends to address and the other impacts against which the policy should be evaluated, (ii) be translated in a way that is relevant for the sector considered and for the specific national or regional context, and (iii) lead to the identification of monitoring indicators”<sup>60</sup>.

The EU is committed to mainstreaming the SDGs into EU policies and initiatives, including into its longer term vision and sectoral policies after 2020. This includes reorienting the EU budget's contributions towards the achievement of the EU's long-term objectives through the new Multiannual Financial Framework after 2020 – which encompasses also the future CAP<sup>61</sup>. This commitment to the SDGs can be observed throughout the EC CAP Communication, which calls on the farming sector to step up and contribute to this commitment, as well as to the COP21 Paris Agreement and other EU environmental objectives<sup>62</sup>. However this commitment is less explicit in the EC post-2020 CAP proposal, where the SDGs are only mentioned once, in the ‘whereas preamble’. As there is a real risk of a lower budget for the future CAP –as can be observed in the current EC post-2020 budget proposal–, it is **important in the negotiations among the EU institutions on the future EU budget that the added value of the future CAP for sustainability is shown more clearly**<sup>63</sup>, as it is not easy to determine it from the EC post-2020 CAP proposal.

Considering the need to avoid working in silos but rather integrate all key considerations into decision-making, it is important to ensure all relevant departments of the European Commission act together in relation to sustainable agriculture. In this sense, it would be **advisable to ensure DG AGRI works together with DG SANTE, DG ECFIN, DG CLIMA and DG ENVI, at the minimum, in formulating and implementing the future Common Agriculture Policy.**

The recent EC post-2020 budget proposal does not appear to reflect strong EU environmental leadership. Although it does include some positive elements, such as an increase in funding for the LIFE programme for environment and an increase from 20% to 25% expenditure contributing to climate objectives, this level of ambition is surely insufficient for achieving the stated objectives. Furthermore, the budget for the rural development pillar of the CAP has been reduced. Surely **a more ambitious environmental approach would require more budget for rural development**, rather than less.

---

<sup>59</sup> As acknowledged by the European Commission: “A growing number of analyses question the long-term sustainability of the current trends in the production and consumption of food”. <http://ec.europa.eu/environment/archives/eusdsd/food.htm>

<sup>60</sup> Schwoob, M.H. et al, 2018. Making the SDGs count in the CAP reform: an analytical framework. IDDRI Issue Brief N°04/18 • MARCH 2018. <https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/D%C3%A9cryptage/201804-IB0418EN-SDG%20agri.pdf>

<sup>61</sup> See more on the EU’s implementation of the SDGs at: [http://ec.europa.eu/environment/sustainable-development/SDGs/implementation/index\\_en.htm](http://ec.europa.eu/environment/sustainable-development/SDGs/implementation/index_en.htm)

<sup>62</sup> EC Communication. (2017). *The Future of Food and Farming*. [https://ec.europa.eu/agriculture/sites/agriculture/files/future-of-cap/future\\_of\\_food\\_and\\_farming\\_communication\\_en.pdf](https://ec.europa.eu/agriculture/sites/agriculture/files/future-of-cap/future_of_food_and_farming_communication_en.pdf)

<sup>63</sup> Schwoob, M.H. et al. (2018). *Making the SDGs count in the CAP reform: an analytical framework*. IDDRI. N°04/18. <https://www.iddri.org/en/publications-and-events/issue-brief/making-sdgs-count-cap-reform-analytical-framework>

In any case, it is not easy to evaluate the final impacts (positive and/or negative) of the EC post-2020 CAP proposal, as most key decisions on its implementation will be taken at national level. For example, the implementation of the proposed eco-schemes for climate and environment in the first pillar is not compulsory for farmers. Furthermore, it is not fully clear how the EC control mechanisms over the implementation of the environmental objectives will work. The **establishment of clear, transparent and participatory monitoring mechanisms to ensure CAP Strategic Plans address environmental objectives and contribute to reducing risks in relation with the planetary boundaries, including sanctions in the case of infringements**, would help to enhance the environmental performance of the future CAP.

### *Tackling supply and demand*

Although the EC CAP Communication recognises that the CAP has a role to play in promoting healthier nutrition, it also states that “consumers’ food choices depend on a number of factors going far beyond the remit of the CAP”. It also recognises that the CAP can help to reduce food waste by stimulating better production and processing practices, and by supporting a circular bio-economy.

The EC CAP Communication recognises these concerns with the inclusion of an objective related to demand: “Improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, as well as animal welfare”. While this objective is welcome, its phrasing relates it more with the response capacity of the sector than with tackling the issue of the lack of well informed and well focused choices for sustainable consumption. The three impact indicators within the draft regulation refer to limiting the use of antibiotics, reducing risks related to pesticides and responding to the demand for quality food. **The CAP could also go beyond and address dietary issues in support of consumers’ well-being and health**, such as labelling and awareness-raising actions.

More broadly, the importance of engaging with the “demand side” is supported by the EU engagement with the Aarhus convention and EU regulations concerning food safety, and with legal aspects concerning the consequences of non-sustainable consumption in the EU. In this sense, the **EU is to inform citizens (all citizens are consumers) about the inherent environmental risks to them and to society as a whole, as well as about the opportunities for enhancing the sustainability of the EU production and consumption patterns towards 2030, and the CAP could play a role supporting relevant awareness raising actions**.

Finally, food waste is a crucial issue where the future CAP could play an enhanced role. A substantial reduction of the current levels of food waste in the EU Member States would be an important contribution to reducing the EU’s greenhouse emissions.

### *On the provision of public goods*

In the EC CAP Communication, EU farmers are defined as first stewards of the natural environment and providers of “carbon sinks and renewable resources for industry and energy”, stating that “they care for natural resources of soil, water, air and biodiversity on 48% of the EU land, foresters a further 36%”. However, it is interesting to see that “public goods” are only mentioned once in the EC post-2020 CAP proposal, in the context of the voluntary eco-schemes (whereas 31), while the EC CAP Communication mentions that the contribution of the CAP to deliver public good and ecosystems service related objectives should be strategic and measurable.

Protection of nature is intrinsically related to all land use policies including agricultural policy, and it is also fundamental for the good functioning of the agricultural sector; therefore it is of great importance to **ensure the direct support payments to farmers contribute effectively to protecting nature and addressing climate change**. The FAO recognises that the role of agriculture in the provision of ecosystem services depends on

the incentives available<sup>64</sup>. In this context, it should be remembered that both incentives and pressures are tools that the EU grants can use in order to start moving at a greater speed towards fully sustainable agricultural practices.

### *Delivering environmental results at national level*

As an important evolution from the previous CAP, the EC post-2020 CAP proposal gives greater responsibility to Member States to achieve agreed targets. While the EC CAP Communication specifically mentions that Member States should prepare their national CAP Strategic Plans taking into account their planning tools emanating from EU environmental and climate legislation and policies (including Natura 2000 management plans, Prioritised Action Frameworks and Biodiversity Strategies), the EC post-2020 CAP proposal is more general and mentions “a system of conditionality, under which an administrative penalty shall be imposed on beneficiaries receiving direct payments” related to the areas of: climate and the environment, public health, animal health and plant health, and animal welfare.

The EC post-2020 CAP proposal foresees a Performance Monitoring and Evaluation Framework (PMEF) to measure performance in relation to the Specific Objectives of the policy by using a set of common indicators. **A detailed EC monitoring of Member States’ implementation of the CAP is important –not only for the environment– in considering the enhanced flexibility and decision-making power that Member States will have. In this sense, reporting about the use of the CAP support for the implementation of relevant environmental planning tools (such as Natura 2000 management plans, Prioritised Action Frameworks and Biodiversity Strategies), could be an improvement to consider.**

Finally, **innovation** has a key role in achieving environmentally-friendly practices and can help to enhance the multi-functionality of EU agriculture and food systems. Existing efforts provide examples of how to make this happen, such as the European Innovation Partnership<sup>65</sup>. **Nature-based solutions**<sup>66</sup> are key for this purpose as they have potential to increase production, increase resilience to natural and climate change related disasters, improve environmental conditions including biodiversity, and help to reduce and manage risks affecting agricultural practices.

---

<sup>64</sup> F AO, 2007. *The state of food and agriculture - Paying farmers for environmental services.*  
<http://www.fao.org/docrep/010/a1200e/a1200e00.htm>

<sup>65</sup> See more information at: <https://ec.europa.eu/eip/agriculture/en>

<sup>66</sup> See information about IUCN’s related efforts at: <https://www.iucn.org/commissions/commission-ecosystem-management/our-work/nature-based-solutions>

## Acknowledgments

*This paper has been elaborated in the context of the regular activity of the IUCN European Policy Advisory Group (EUPAG). Special thanks to Alberto Arroyo Schnell & Gertjan Storm (coordinators), Luc Bas, Barbara Battioni Romanelli, Stefan Berggren, Eline Botte, Florence Clap, Jonathan Davies, Hilde Eggermont, Catarina Ferreira, Heleen van den Hombergh, Jonathan Hughes, Carl Königel, Scott Leatham, Jabier Ruiz, Marina von Weissenberg Jan Woollhead and many others for their valuable contributions.*