



#NDCsWeWant

# ENHANCING NDCS FOR FOOD SYSTEMS RECOMMENDATIONS FOR DECISION-MAKERS

## SUMMARY

## Food systems and climate change

This paper seeks to provide guidance and recommendations for policymakers to increase ambition in Nationally Determined Contributions (NDCs) under the Paris Agreement using the climate change mitigation and adaptation potential of a transition to sustainable food systems.

The guidance and recommendations provided in this paper are meant to serve as a starting point for discussions, future development and to provide a clear way towards measurable, actionable outcomes within their NDCs.

The global food system (**Box 1**) is a major driver of biodiversity loss caused by climate change, conversion of land, depletion of freshwater resources, and pollution of aquatic and terrestrial ecosystems. The agriculture, forestry & land-use sectors account for nearly a quarter (24%) of total global emissions.<sup>1,2</sup> Other major emitting sectors are the electricity and heat production (25%), industry in general (21%), the transportation sector (14%) and buildings and other energy use (16%).<sup>3</sup> If food production and consumption continue the current business-as-usual trajectory, we will exhaust the emissions budgets compatible with the 1.5° target and cross various planetary boundaries by 2050.<sup>4</sup> Several planetary boundaries have already been crossed.<sup>5</sup>



### Box 1. Defining the food system

The food system includes all elements (environment, people, inputs, processes, infrastructures, institutions) and activities that relate to the production, processing, distribution, preparation and consumption of food and their socio-economic and environmental impacts.<sup>6</sup> For this paper, we use a food system framework to identify some of the key mitigation and adaptation measures needed to address the drivers and trends of unsustainable food production and consumption.

In most countries there is great potential to contribute to climate change mitigation and adaptation through food systems changes.<sup>7</sup> Globally, food production-level measures including addressing land-use change and agricultural emissions could reduce overall emissions by 7.2 Gt CO<sub>2</sub> eq per year while measures such as reducing food loss and waste and shifting towards sustainable and healthy diets could reduce emissions by 1.8 Gt CO<sub>2</sub> e eq per year, together contributing about 20% of the global mitigation needed in 2050 to deliver on the 1.5°C target.<sup>8</sup>

In addition, the food system offers important opportunities for climate change adaptation. Activities such as supporting nature-based solutions, agroecological approaches, including climate-smart, regenerative, conservation agriculture, organic and others, diversifying the food system and adopting healthy and sustainable diets, not only offer potential to reduce emissions but also contribute to food system resilience.<sup>9, 10, 11, 12</sup>

These mitigation and adaptation options also provide co-benefits in the context of broader sustainability objectives such as the Sustainable Development Goals (SDGs) and Convention on Biological Diversity (CBD). Beyond climate action (SDG 13), many of these opportunities contribute to the activities that are needed for the sector to continue feeding a growing global population while working to eradicate hunger (SDG 2).

## The State of the Food System in NDCs

While many countries mention the agriculture sector in their NDCs<sup>13</sup>, very few set targets in relation to other stages of the food system, such as food loss and waste reduction, sustainable diets or food consumption. Only eleven countries currently mention food loss in their NDCs, and not one country makes reference to food waste.<sup>14</sup> Opportunities to reduce global emissions of the food systems sector remain largely untapped due to a lack of comprehensive coverage of the opportunities that exist in the food system, on the one hand, and vagueness and unspecificity of NDC targets, on the other. Overall, only a handful of NDCs refer to the food system approach, but these mostly remain focused on the stage of food production and not the later stages where large emissions from food loss and waste and diets and consumption occur.

Close to 89 percent (168 out of 189 countries) that have submitted NDCs include agriculture and/or land-use change and forestry in their climate change commitments.<sup>15</sup> The sector is, however, mostly included in the overall economic or broader targets of these countries,<sup>16</sup> while most NDCs do not elaborate on specific activities for achieving their GHG targets. And only a few countries mention sectoral targets for the agriculture stage.

## Opportunities to Leverage Food Systems for NDCs

As the food system is highly complex, dynamic and concerns different policy agendas, policymakers should consider applying a “food system approach” to frame their NDCs more holistically.<sup>17</sup> This means examining food systems as a whole rather than in separate parts, valuing outcomes over processes, and embracing a variety of voices instead of individual perspectives.<sup>18</sup> This approach can help policymakers identify and assess impacts and feedback between food system activities, and maximize possible synergies between climate objectives, health co-benefits and socio-economic priorities. It entails effectively analyzing food system activities, their food security and environmental outcomes and outlining their potential positive and negative trade-offs.

### Generally, policymakers should note that

- Accelerating the success of NDCs requires adoption of an integrated approach and **coherence with existing policies** such as medium and long-term national development plans and baselines for assessing progress
- The legitimacy, quality and implementation capacity of NDCs are enhanced by collaborating with **stakeholders** from different sectors including subnational governments and local and indigenous communities in the process of adjusting NDCs
- **Smallholders** should be given special attention when considering the needs and perspectives of different stakeholders
- Effort should be made to ensure the representation of **women** in negotiation processes
- **Finance is an important enabler** for transitioning to new and efficient practices; high-income countries should support lower-income countries by engaging in international climate finance mechanisms. National budgets need to be allocated for sectoral NDC implementation, which requires the involvement of Ministries of Finance and Planning in the formulation and implementation phase of the NDCs
- **Ambitious food NDCs from sustainable production to sustainable consumption** including Food Loss and Waste and Planetary Health Diets<sup>19</sup> should become critical conditions for the countries' and global food systems recovery and resilience

### Specifically, to understand what mitigation and/or adaptation activities are appropriate for their countries, policymakers should consider:

- The position (power) and role of the country in the global food system (e.g. exporter vs. importer)
- **The types of food system activities** in their country (e.g. type of commodity, production or processing)
- **Food consumer habits** of their population (e.g. eating habits/food preference, household levels of food waste and local culture, context and values)
- The direct and indirect **emissions and mitigation potential** from those activities
- The economic and technological status of the sector
- International (e.g. SDGs, CBD) and national **policy priorities** and potential co-benefits or trade-offs of the proposed activities and institutions and food actors that influence the food systems

It is important to develop measurable indicators across input, output and outcome levels to capture intermediate and step-by-step progress in implementing NDC activities.

The strengthening of measurement, reporting and verification capacities (MRV) of countries is important as it influences the communication efficiency among decision-makers.<sup>20</sup> In addition, designing new policies and access to reliable, relevant and comprehensive data to track progress and ensure accountability also depend on functioning MRV.

## Endnotes

- 1 IPCC (2014) Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.
- 2 This will be 26% if we consider emissions from processing, packaging and transportation of food products. See Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), p. 987–992.
- 3 IPCC (2014) Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.
- 4 Springmann, M., Clark, M., Mason-D'Croz, D., Wiebe, K., Bodirsky, B. L., Lassaletta, L., et al. (2018). Options for keeping the food system within environmental limits. *Nature*, 562(7728), p. 519–525.
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- 7 Roe, S., Streck, C., Obersteiner, M., Frank, S., Griscom, B., Drouet, L., Fricko, O., Gusti, M., Harris, N., Hasegawa, T. and Hausfather, Z. (2019). Contribution of the land sector to a 1.5° C world. *Nature Climate Change*, pp.1-12. Retrieved from <https://www.nature.com/articles/s41558-019-0591-9>
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- 11 CARE. (2017). G20 and climate change. Time to lead for a safer future. Retrieved May 18, 2020 from <https://careclimatechange.org/wp-content/uploads/2017/06/G20-REPORT-.pdf>.
- 12 Springmann, M., Clark, M., Mason-D'Croz, D., Wiebe, K., Bodirsky, B. L., Lassaletta, L., et al. (2018). Options for keeping the food system within environmental limits. *Nature*, 562(7728), p. 519–525.
- 13 In 2015, with the adoption of the Paris Agreement, countries pledged to take ambitious action to address climate change and keep temperature rise below 2 degrees Celsius. Over the course of the last five years, 186 countries have submitted Nationally Determined Contributions (NDCs) that reflect their national climate targets, plans, and measures to reduce greenhouse gas (GHG) emissions across sectors.
- 14 NDCs (2016, 2017) accessed via Climate Watch (2019)
- 15 FAO (2016). The Agriculture Sectors in the Intended Nationally Determined Contributions: Analysis, by R. Strohmaier, J. Rioux, A. Seggel, A. Meybeck, M. Bernoux, M. Salvatore, J. Miranda, and A. Agostini. Environment and Natural ResourcesManagement Working Paper No. 62. Rome: FAO
- 16 FAO (2016). The Agriculture Sectors in the Intended Nationally Determined Contributions: Analysis, by R. Strohmaier, J. Rioux, A. Seggel, A. Meybeck, M. Bernoux, M. Salvatore, J. Miranda, and A. Agostini. Environment and Natural ResourcesManagement Working Paper No. 62. Rome: FAO
- 17 Ingram, J. (2011). A food systems approach to researching food security and its interactions with global environmental change. *Food Security*, 3(4), p. 417–431.
- 18 Collaborative Framework
- 19 Willett et al. Food in the Anthropocene: the EAT Lancet Commission on healthy diets from sustainable food systems. *Lancet* 2019; 393: p. 447-92. (2019)
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