



# NDCs 3.0: Critical demand-side action to reflect existing food and climate commitments

**Food systems are responsible for one-third of human-induced greenhouse gas (GHG) emissions and must be robustly addressed in forthcoming NDCs.**

The Paris Agreement and other commitments, taking into account the best available science and national circumstances, indicate requisite levels of ambition for food systems in NDCs and related policies and plans.

## 1. Aligning with the Paris Agreement Temperature Goal

The Paris Agreement provides that in NDCs “all Parties are to undertake and communicate ambitious efforts ... with the view to achieving the purpose of this Agreement.”<sup>1</sup> This includes the goal of limiting the global temperature increase.<sup>2</sup> With respect to this, each Party’s upcoming NDC must “reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.”<sup>3</sup> Accordingly, an NDC should contribute as much as possible toward the action needed to achieve the Paris Agreement temperature goals.

Food systems are one area where action is critical, with the IPCC finding that **“even if fossil fuel emissions were eliminated immediately, food system emissions alone would jeopardise the achievement of the 1.5°C target and threaten the 2°C target.”**<sup>4</sup> Furthermore, as UNEP’s Emissions Gap Report 2022 notes, to align the food system with the 2°C goal of the Paris Agreement “required transformations include shifting diets, protecting natural ecosystems, improving food production and decarbonizing the food value chain.”<sup>5</sup> In line with this, the IPCC states that, within food systems, “mitigation actions need to go beyond food producers and suppliers to incorporate dietary changes and consumers’ behavioural patterns” and notes that demand-side mitigation potential for food systems is similar to that of supply-side mitigation potential.<sup>6</sup>

With respect to diets, halting the rising global aggregate consumption of animal-source foods is critical, as these account for the majority of food systems emissions (as well as 32% of methane emissions across all sectors),<sup>7</sup> despite providing only 18% of our calories and only 37% of our protein globally.<sup>8</sup> Addressing overconsumption can achieve this; the Emissions Gap Report 2022 finds that “if everybody on the planet consumed within levels recommended for health and the environment (14 g/d or less of red meat, 29 g/d or less of poultry, and 28 g/d or less of fish), meat production would not need to increase beyond current levels.” However, in high and upper middle-income countries, overconsumption is widespread. If these countries do not address this overconsumption, this shortcoming will jeopardize the temperature target. For countries with gratuitous levels of animal-source food consumption, action to promote dietary shifts falls within reasonable expectations of ambition, as the IPCC highlights multiple “win-win” policies to achieve this.<sup>9</sup> For example, the IPCC found that “a shift to diets rich in plant-based foods, particularly pulses, nuts, fruits and vegetables ... could lead to substantial reduction of greenhouse gas emissions ... while also providing health benefits and reducing mortality from diet-related non-communicable diseases.”<sup>10</sup>

Action to address food waste, which (in combination with food loss) is estimated to amount to 8%–10% of GHG emissions—mostly attributable to the production of animal products<sup>11</sup>—can also be of significant value in achieving mitigation targets with adaptation co-benefits.<sup>12</sup> The IPCC finds that “reducing waste at all points along the entire food

chain is a significant opportunity for improving demand-side adaptation measures.”<sup>13</sup>

In addition to the overarching mitigation objective, the Paris Agreement contains an overarching adaptation objective of “increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.” As NDCs are contributions toward achieving all Paris Agreement objectives, food systems mitigation measures should be consistent with this. Dietary shifts from, for example, beef to poultry or fish, while potentially reducing emissions in some circumstances, risk jeopardizing food production because of vulnerability to zoonoses as well as (particularly for fish) affecting small-scale and subsistence fishers due to overall production limitations.<sup>14</sup>

**As a result, in countries with unnecessary levels of animal-source food consumption, we should expect to see NDCs reflect plans to shift toward healthy and sustainable diets. Additionally, because of their co-benefits to mitigation and adaptation we should see food waste reduction efforts reflected across NDCs.**

## 2. The Paris Agreement also provides that NDCs be informed by the global stocktake.<sup>15</sup>

The global stocktake, in addition to encouraging the implementation of integrated, multi-sectoral solutions<sup>16</sup> (including “resilient food systems”) and noting the importance of “transitioning to sustainable lifestyles and sustainable patterns of consumption and production in efforts to address climate change,” calls on Parties to contribute to the global effort of “accelerating and substantially reducing non-carbon-dioxide emissions globally, including in particular methane emissions by 2030.” Dietary shifts offer significant benefits for reducing non-CO<sub>2</sub> emissions, as animal agriculture is responsible for around two-thirds of nitrous oxide emissions<sup>17</sup> as well as 32% of anthropogenic methane emissions. The 2021 Global Methane Assessment found that “behavioural change measures and innovative policies are particularly important to prevent emissions from agriculture, given the limited potential to address the sector’s methane emissions through technological measures” and that “reducing food waste and loss, improving livestock management, and the adoption of healthy diets (vegetarian or with a lower meat and dairy content) could reduce methane emissions by 65–80 Mt/yr over the next few decades.”<sup>18</sup>

## 3. Commitments under the Emirates Declaration

In addition to the Paris Agreement and the global stocktake, which represent the consensus of all Parties, 159 Parties are signatories to the COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action,<sup>19</sup> agreeing to “pursue broad, transparent, and inclusive engagement, as appropriate within our national contexts, to integrate agriculture and food systems into National Adaptation Plans, Nationally Determined Contributions, Long-term Strategies, National Biodiversity Strategies and Action Plans, and other related strategies before the convening of COP30.”





This has critical implications for both the substance and the process for NDCs by these Parties.

#### A. Integrating food systems

As discussed by the IPCC, food systems include activities from production through consumption, and a food systems lens requires considering interactions between activities as well (such as addressing risks of improving production efficiencies resulting in “rebound effects” whereby overall emissions increase if lower prices increase demand).<sup>20</sup> Accordingly, the NDCs of Emirates Declaration signatories should include both supply- and demand-side measures as well as the interactions between these elements to ensure that food systems measures contribute coherently to mitigation efforts.

#### B. Pursuing “broad, transparent, and inclusive engagement”

The commitment to “broad, transparent, and inclusive engagement” entails that agriculture and food system elements of NDCs should be the result of a process that involves adequate opportunities for public input and consideration of perspectives raised.

### 4. Implications of other commitments

In addition, a number of other commitments have implications for food systems in NDCs.

Members of the Alliance of Champions for Food Systems have determined to “strengthen national visions and food systems transformation pathways, inclusive of ten priority action areas and consistent with science-based targets,” to update NDCs (and various other plans) in line with their updated National Food System Transformation Pathways and to report annually.<sup>21</sup> The outlined priority-action areas provide detail on the measures that we should see reflected in NDCs, such as reduction of GHG emissions along the full food value chain.

Signatories of the COP28 UAE Declaration on Climate and Health, signed by 149 countries, committed to “taking health into account, as appropriate, in designing the next round of nationally determined contributions” as well as other climate plans, noting the “benefits for health from deep, rapid, and sustained reductions in greenhouse gas emissions, including from ... shifts to sustainable healthy diets.”<sup>22</sup> As a result, we can hope to see measures that take advantage of the health and mitigation benefits of shifts to sustainable healthy diets.

### 5. Building NDCs reflective of these commitment

In recent years, many countries have taken important steps on climate action concerning food systems, including through National Food Systems Transformation Pathways, NBSAPs, LT-LEDs, and other national policies. It is important that these policies be reflected in their NDCs.

Additionally, many existing resources support countries in increasing policy ambition to reflect food systems in their NDCs, including the recently launched Food Forward NDCs toolkit from WWF and Climate Focus.<sup>23</sup>

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- <sup>1</sup> Paris Agreement, Article 3.
- <sup>2</sup> Paris Agreement, Article 2.1(c).
- <sup>3</sup> Paris Agreement, Article 4.3.
- <sup>4</sup> Intergovernmental Panel on Climate Change, "Cross-Sectoral Perspectives," in *Climate Change 2022: Mitigation of Climate Change* (Geneva: IPCC, 2022), 1285, [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_FullReport.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf).
- <sup>5</sup> United Nations Environment Programme, *Emissions Gap Report 2022: The Closing Window—Climate Crisis Calls for Rapid Transformation of Societies* (Nairobi: UNEP, 2022), xxv, <https://www.unep.org/emissions-gap-report-2022>.
- <sup>6</sup> Intergovernmental Panel on Climate Change, "Cross-Sectoral Perspectives," 1279–80.
- <sup>7</sup> "Methane Emissions Are Driving Climate Change. Here's How to Address Them," United Nations Environment Programme, August 20, 2021, <https://www.unep.org/news-and-stories/story/methane-emissions-are-driving-climate-change-heres-how-reduce-them>
- <sup>8</sup> J. Poore and T. Nemecek, "Reducing Food's Environmental Impacts Through Producers and Consumers," *Science* 360, no. 6392 (June 2018): 987–92.
- <sup>9</sup> Intergovernmental Panel on Climate Change, "Cross-Sectoral Perspectives," 1291, table 12.9.
- <sup>10</sup> Intergovernmental Panel on Climate Change, "Cross-Sectoral Perspectives," 1285–91.
- <sup>11</sup> Intergovernmental Panel on Climate Change, "Demand, Services and Social Aspects of Mitigation," in *Climate Change 2022: Mitigation of Climate Change* (Geneva: IPCC, 2022), 520–21.
- <sup>12</sup> Intergovernmental Panel on Climate Change, "Food Security," in *Climate Change and Land, an IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems* (Geneva: IPCC, 2019), 439–40, <https://www.ipcc.ch/srccl>.
- <sup>13</sup> Food and Agriculture Organization of the United Nations, United Nations Development Programme, and United Nations Environment Programme, *A Multi-Billion-Dollar Opportunity: Repurposing Agricultural Support to Transform Food Systems* (Rome: FAO, UNDP, UNEP, 2021), vii, <https://www.fao.org/3/cb6562en/cb6562en.pdf>.
- <sup>14</sup> Intergovernmental Panel on Climate Change, "Food, Fibre and Other Ecosystem Products," in *Climate Change 2022: Impacts, Adaptation and Vulnerability* (Geneva: IPCC, 2022), 805, [https://report.ipcc.ch/ar6/wg2/IPCC\\_AR6\\_WGII\\_FullReport.pdf](https://report.ipcc.ch/ar6/wg2/IPCC_AR6_WGII_FullReport.pdf); Changing Markets Foundation and Greenpeace Africa, *Feeding a Monster: How European Aquaculture and Animal Feed Industries Are Stealing Food from West African Communities* (n.p.: Changing Markets Foundation and Greenpeace Africa, 2021), 5–9, <https://changingmarkets.org/report/feeding-a-monster-how-european-aquaculture-and-animal-industries-are-stealing-food-from-west-african-communities/#:~:text=Each%20year%2C%20over%20half%20a,mostly%20in%20Europe%20and%20Asia>.
- <sup>15</sup> Paris Agreement, Article 4.9 and Article 12.3.
- <sup>16</sup> United Nations Framework Convention on Climate Change, First Global Stocktake, 1/CMA.5, paragraph 55 (December 13, 2023), [https://unfccc.int/sites/default/files/resource/cma2023\\_L17\\_adv.pdf](https://unfccc.int/sites/default/files/resource/cma2023_L17_adv.pdf).
- <sup>17</sup> Michael B. Eisen and Patrick O. Brown, "Rapid Global Phaseout of Animal Agriculture Has the Potential to Stabilize Greenhouse Gas Levels for 30 Years and Offset 68 Percent of CO<sub>2</sub> Emissions This Century," *PLOS Climate* 1, no. 2 (February 2022): e0000010.
- <sup>18</sup> United Nations Environment Programme and Climate and Clean Air Coalition, *Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions* (Nairobi: UNEP and Climate and Clean Air Coalition, 2021), 13, [https://www.ccacoalition.org/sites/default/files/resources//2021\\_Global-Methane\\_Assessment\\_full\\_0.pdf](https://www.ccacoalition.org/sites/default/files/resources//2021_Global-Methane_Assessment_full_0.pdf).
- <sup>19</sup> COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, And Climate Action, Dec. 1, 2023, <https://www.cop28.com/en/food-and-agriculture>.
- <sup>20</sup> Intergovernmental Panel on Climate Change, "Food Security," 442, 479.
- <sup>21</sup> Membership Terms of Reference, Alliance of Champions for Food Systems Transformation, Nov. 6, 2023, [https://allianceofchampions.org/wp-content/uploads/2023/11/TermsOfReference\\_Membership\\_ACF.pdf](https://allianceofchampions.org/wp-content/uploads/2023/11/TermsOfReference_Membership_ACF.pdf).
- <sup>22</sup> COP28 UAE Declaration on Climate and Health, Dec. 3, 2023, <https://www.cop28.com/en/cop28-uae-declaration-on-climate-and-health>.
- <sup>23</sup> WWF and Climate Focus, Food Forward NDCs, <https://foodforwardndcs.panda.org/>.