



PRIMER FOOD FORWARD NDCs

Guidance to enhance NDC ambition and implementation for agriculture and food systems transformation

Haseeb Bakhtary (Climate Focus)
Martina Fleckenstein (WWF International)



We cannot achieve the Paris Agreement targets without transforming our food systems as they account for a third of global greenhouse gas emissions. Food systems emit over 17 billion tonnes of CO₂e annually, with agricultural production and land use making up over 70 percent of food systems' emissions.¹

Parties to the Paris Agreement agreed to limit the increase in global average temperature to well below 2°C above pre-industrial levels, while pursuing efforts to limit warming below 1.5°C by the end of the century. This is an ambitious climate mitigation goal that requires urgent action across all sectors. For agriculture and food systems, these goals demand a rapid overhaul of how the world produces, distributes, and consumes food. As defined by the UN Food and Agriculture Organization, food systems encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded. For transforming our food systems to keep global climate targets within reach, a shift towards nature-positive production, reductions in food loss and waste, and healthy and sustainable diets is vital.

Fortunately, there is good news: immense opportunities to mitigate emissions by sustainably transforming food systems are available (Figure 1). Measures at the food production-level (like addressing land-use change and agricultural emissions) combined with demand-side measures (like reducing food loss and waste) could contribute to around 20 percent of the global mitigation needed in 2050 to deliver on the 1.5°C Paris Agreement target.² Of the emissions mitigation resulting from nature-based solutions, 80 percent of 2030 mitigation opportunity is closely linked to food systems.³ In addition to reducing emissions, a sustainable food system transformation – which includes shifting diets, nature-positive agriculture, and a diversified food system – improves food system resilience, which can positively impact the lives of the nearly 4 billion people who live in households that depend on food systems for their subsistence and livelihoods.⁴

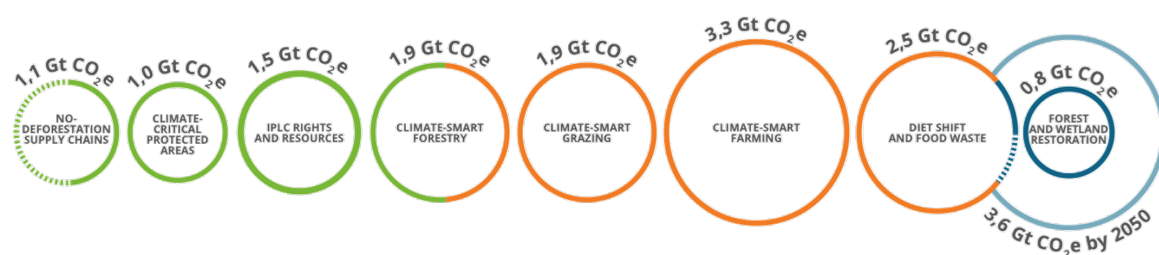


Figure 1. Mitigation potential from various food systems measures.⁵

Nationally Determined Contributions (NDCs) – the periodically updated documents that detail each Parties' efforts to reduce national emissions and adapt to climate change – are at the heart

¹ Crippa, M., et al. (2021). Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food*, 2(3), 198–209.

² W WWFa. (2022). Unlocking and Scaling Climate Solutions in Food Systems. Retrieved from

³ Conservation International. (2022). <https://www.conservation.org/roadmap>

⁴ Davis, B., et al. (2023). Estimating global and country-level employment in agrifood systems. *FAO Statistics Working Paper Series*, No. 23-34. Rome, FAO. <https://doi.org/10.4060/cc4337en>

⁵ WWF a. (2022)

of the Paris Agreement. NDCs provide a platform to bring together national policy priorities and holistically plan and implement food systems measures.

Countries are recognizing the importance of food systems in the context of climate change. A majority of updated NDCs (93%) already include at least one food related policy measure, and most countries better integrated food systems in their updated NDCs compared to their prior submissions.⁶ However, while these are steps right direction, there is still a significant need to enhance and implement food systems interventions within NDCs to limit global warming to 1.5 degree.⁷

We are in a planetary emergency. Nature loss, climate change and global food insecurity are three of our biggest challenges. [...] Solving these issues is hard but the greatest opportunity lies where they intersect – food systems. [...] Transforming food systems presents us with the biggest opportunity to restore nature, limit global warming to 1.5 degrees and nourish all people within planetary boundaries.⁸

João Campari

Global Food Practice Leader, WWF

NDC Guidance for Agriculture and Food Systems (short 'FOOD FORWARD NDCs') is born out of the need for a consolidated, user-friendly resource to help decision makers in their efforts to urgently transform food systems through national climate plans. The guidance supports policymakers and practitioners in designing and implementing policy measures that enable systemic shifts in food systems to meet NDC targets.

This primer briefly introduces '**FOOD FORWARD NDCs: Guidance to enhance NDC ambition and implementation through agriculture and food systems transformation,**' and outlines how the guidance can contribute to evidence-based policymaking as a simple, easy-to-use resource.

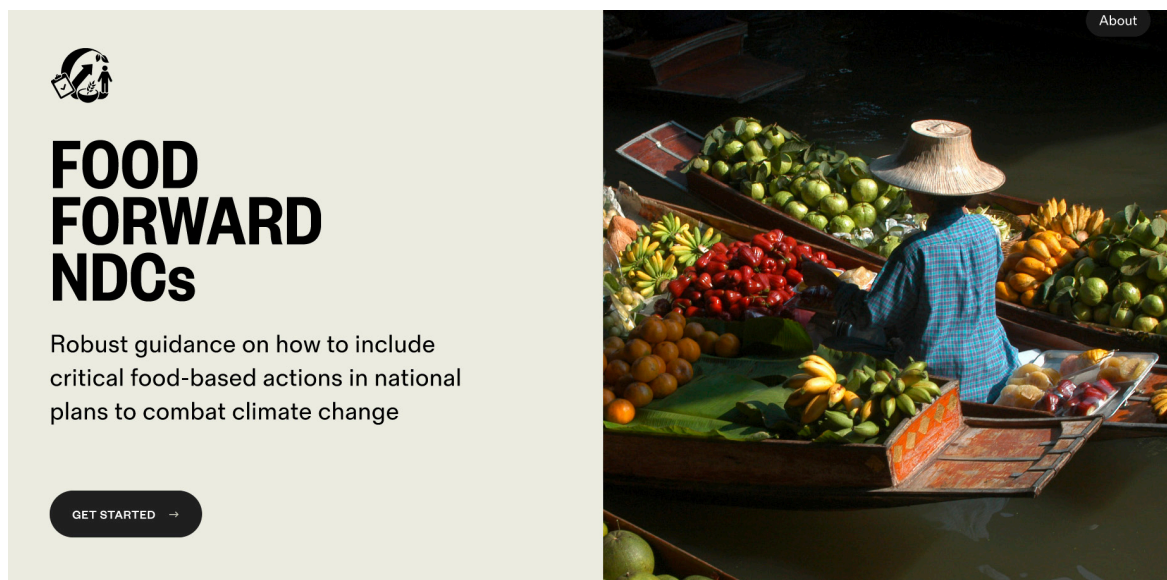


Figure 2. Food Forward NDCs website's homepage.

⁶ WWFa. (2022). Unlocking and Scaling Climate Solutions in Food Systems. Retrieved from https://wwfint.awsassets.panda.org/downloads/unlocking_and_scaling_climate_solutions_in_food_systems___wwf_analysis_of_ndcs_2022.pdf.

⁷ WWFa. (2022). Unlocking and Scaling Climate Solutions in Food Systems. Retrieved from https://wwfint.awsassets.panda.org/downloads/unlocking_and_scaling_climate_solutions_in_food_systems___wwf_analysis_of_ndcs_2022.pdf.

⁸ WWFb (2022). Solving the Great Food Puzzle: 20 levers to scale national action. Loken, B. et al. WWF, Gland, Switzerland

FOOD FORWARD NDCS

FOOD FORWARD NDCs is a simple, interactive, web-based tool that presents users with tangible, evidence-backed policy options and measures, and available literature for transitioning to nature-positive, healthy, and resilient food systems through NDCs. The available policy options can be tailored to a country’s specific food systems priorities different intervention areas of the food system, such as food environment, food governance, food production, supply chain, and consumption. The guidance does not intend to prescribe solutions, but instead present a menu of policy options as a starting point for decision makers to further develop and implement on-the-ground measures for food systems transformation based on national and local contexts.

The guidance ultimately aims to align countries’ NDCs with a food systems approach (Figure 3) by serving a dual purpose in both:

1. Supporting NDC implementation by identifying and presenting concrete practices and measures that enable systemic shifts in food systems to meet NDC targets, and
2. Supporting NDC enhancement by providing accessible guidance to help countries ramp-up their ambition on food systems in forthcoming NDC updates.

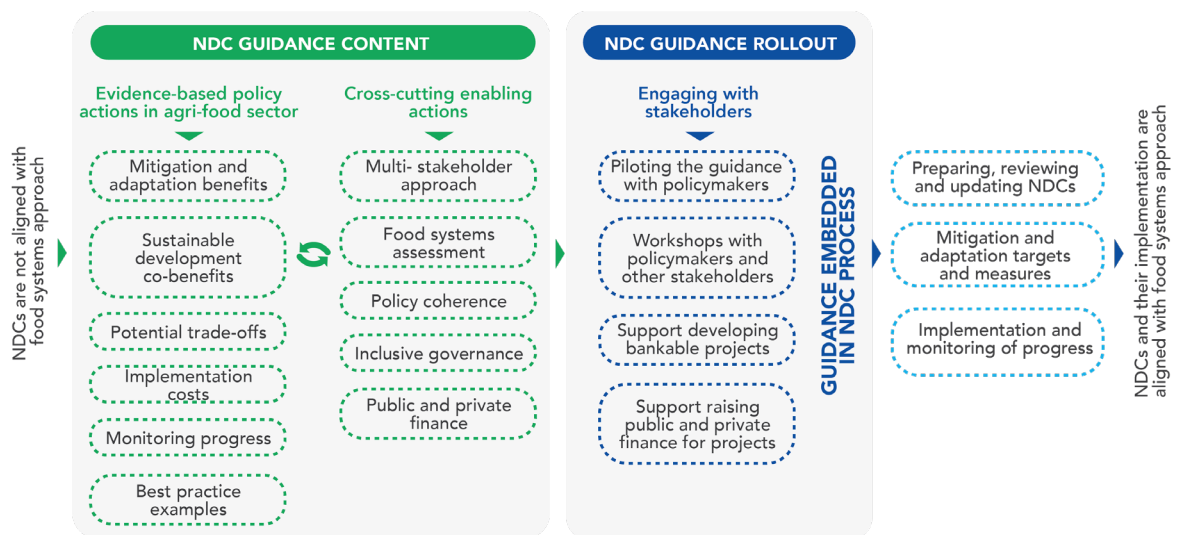


Figure 3. FOOD FORWARD NDCs’ contribution to enhancing NDC ambition and implementation.

HOW IS FOOD FORWARD NDCS USED?

The guidance offers a simple menu to navigate the available policy options and related guidance. In a few clicks, the user is provided with a comprehensive list of implementation measures and other resources tailored to their preferred policy priorities. To generate these resources, users select their desired inputs in two prompts:

1. **Intervention areas.** First, users select the economic or policy domain within the food system that they want to target for mitigation, including food production, food supply chains, food consumption, food governance, or food environments (See Figure 4).

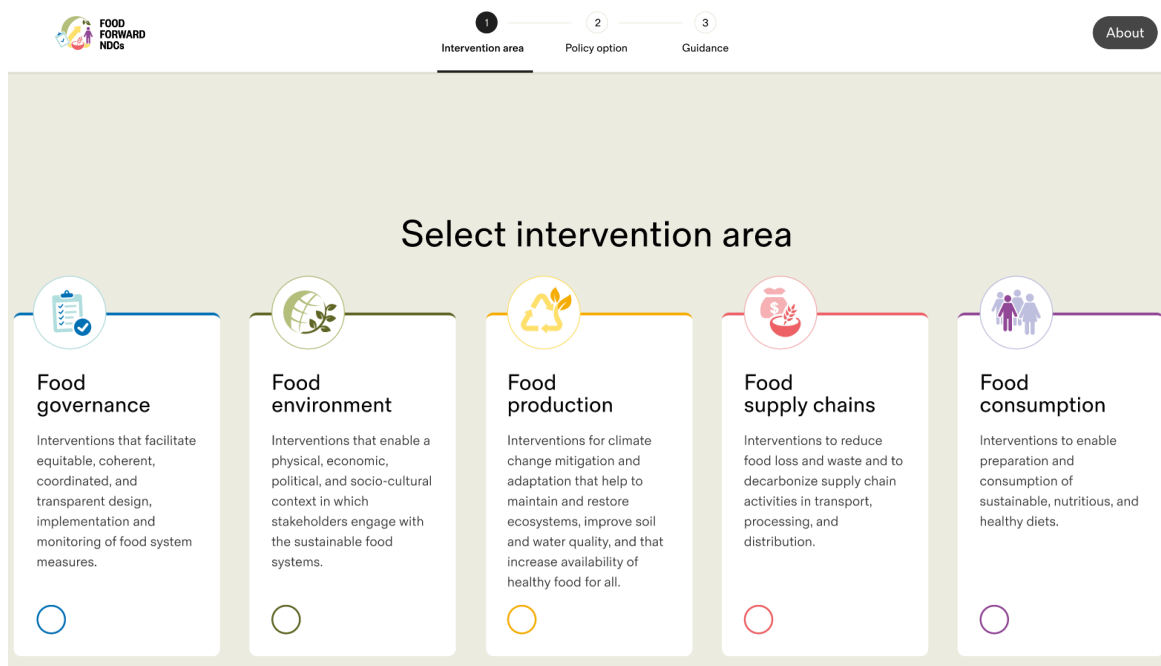


Figure 4. Policy intervention areas in food systems.

2. **Policy options.** After selecting an intervention area, users are presented with several policy options that are relevant to each intervention area. The presented policy options are non-exhaustive and will expand over time and have been selected based on their mitigation and adaptation benefits.

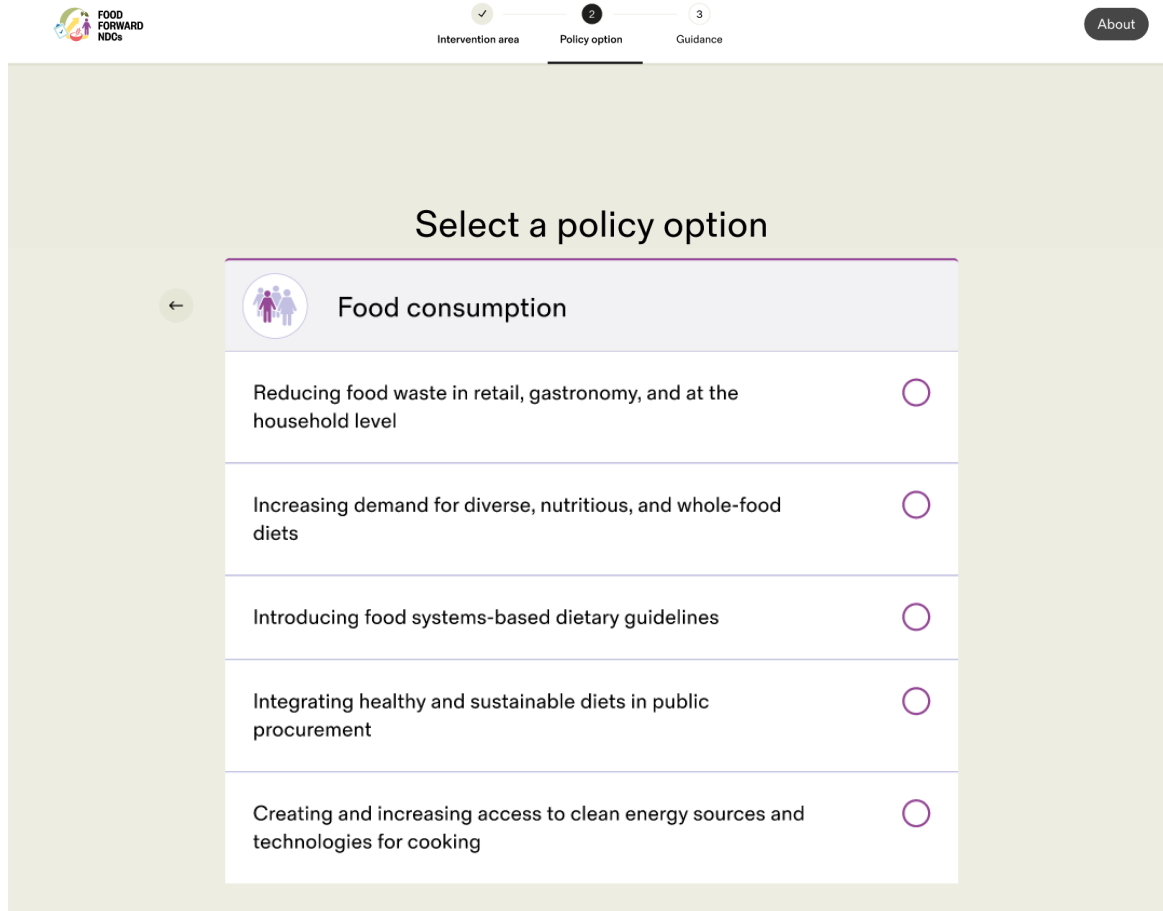


Figure 5. Example of policy options in food consumption intervention area.



WHAT INFORMATION DOES FOOD FORWARD NDCS CONTAIN?

FOOD FORWARD NDCs helps users identify relevant policy options and implementation measures, their climate and sustainable development benefits, potential trade-offs, and examples of their real-world implementation. The content of the guidance establishes a basis for holistic policy development and implementation. It takes into account the interaction between different policy objectives in the food system, as well as the associated co-benefits and trade-offs of each policy option. Beyond concrete mitigation measures, the guidance also provides users with relevant supplementary information, up-to-date literature, and links to helpful external resources and tools:

Content of guidance for each policy option

COMPONENT	EXPLANATION
List of implementation measures	The core content of the guidance consists of several implementation, policy, and governance measures that support policymakers in mitigating emissions under any given policy objective. Information will include basic definitions and explanations of the measures, mitigation potentials, and supporting evidence.
Co-benefits	The guidance will note various co-benefits related to specific implementation measures, or those that span several implementation measures. These will include adaptation, Sustainable Development Goals, and other co-benefits.
Challenges, externalities, and trade-offs	Many intervention measures will face implementation challenges and have negative externalities and trade-offs that policymakers should consider. The guidance will provide an overview of these, including common challenges, negative externalities, potential economic, social, and mitigation trade-offs, and options to minimize them.
Costs	Policymakers should also consider costs related to implementation, monitoring, and opportunity costs. The guidance will present this information, potentially providing regional cost examples where aggregate data is unavailable.
Policy monitoring tools	The guidance will refer users to any existing tools that are relevant to the proposed implementation measures, with links for users to easily access these external resources.
Case studies	The guidance will provide case studies that illustrate real-world examples of implementation measures. These might include project-level case studies, or more macro-level examples – like that of a country that has achieved proven emissions reductions by utilizing certain mitigation actions.

HOW FOOD FORWARD NDCS FILLS A GAP IN GUIDANCE

Despite a sharp improvement in considering food systems measures in NDCs, there is still significant unrealized potential for countries to ramp-up ambition within the sector. Additionally, there remain still significant gaps and challenges in the implementation of food system measures.⁹

In recent years, civil society and research organizations have developed guidance on transitioning food systems to meet NDCs and other sustainable development objectives. This suite of guidance has helped countries to increasingly consider the role of food systems in their climate change mitigation and adaptation plans. Still, there remains a lack of a consolidated resources of concrete policy options to support policymakers in identifying and implementing relevant policy measures. FOOD FORWARD NDCs helps to fill this gap.

While general guidance exists on how countries can transform their food systems and how they can enhance their NDCs, there is a current need for guidance that presents policymakers with actionable and evidence-based policy measures through a food systems lens to meet their NDC commitments. A resource like FOOD FORWARD NDCs – which gathers, analyzes, and presents available literature and guidance to consolidate concrete NDC implementation measures – can accompany and complement these overarching, higher-level guidance documents.

One strength of FOOD FORWARD NDCs also lies in its presentation of guidance based on users' preferred intervention areas, rather than presenting one-size-fits-all information. This is because – like any sector – food systems differ remarkably by country. Preferred diets, predominant crops, their production systems, and related infrastructure vary significantly depending on national contexts. For instance, the policy priorities for transforming the food system in a country with immense consumption and waste emissions will be different than for a country experiencing food insecurity. By combining concrete policy options and measures with existing WWF resources on the characteristics of different food systems such as the [Great Food Puzzle](#), the guidance aims to contextualize policy options, further helping users identify policy options most relevant to the nuances of a particular food system.

While the guidance will be accessible to the public, the target audience for this guidance is primarily policymakers and other practitioners (e.g., NGOs, civil society, project developers). The guidance will be piloted with national policymakers and other stakeholders, and feedback will be solicited through workshops and webinars.

⁹ WWF. (2022). Unlocking and Scaling Climate Solutions in Food Systems. Retrieved from https://wwfint.awsassets.panda.org/downloads/unlocking_and_scaling_climate_solutions_in_food_systems___wwf_analysis_of_ndcs_2022.pdf.

A COLLABORATIVE EFFORT

FOOD FORWARD NDCs is a collaborative effort led by WWF with advisory support from several experts across food systems intervention areas. As part of the project advisory group, these experts are continuously providing valuable inputs to build and improve the content of the guidance. While the advisory group members continue to increase, we are grateful to the contributions of following members:

Brent Loken, Shirley Matheson (WWF International), Patty Fong (Global Alliance for the Future of Food), Clementine O'Connor (UNEP), Krystal Nicole Crumpler (FAO), Chiara Villani (Alliance Bioversity-CIAT), Pete Pearson, Jamie Bindon (WWF US), Helena Wright (FAIRR Initiative), John Garcia (Biovision), Carmen Torresle Dezma (UNEP), Amanda McKee (NDC Partnership), Martina Kühner (GIZ), Oliver Oliveros (Agroecology Coalition), William Nelson (WWF Germany), Keenya Hofmaier (FAIRR Initiative), Fernanda Carvalho (WWF International), Abigail Lee (FAIRR Initiative), and Julia Wolf (FAO).

