

# UNTAPPED OPPORTUNITIES FOR CLIMATE ACTION

An assessment of food systems in  
Nationally Determined Contributions

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COUNTRY ASSESSMENT

**UNITED STATES**



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Suggestion for Referencing: Global Alliance for the Future of Food. *Untapped Opportunities for Climate Action: An Assessment of Food Systems in Nationally Determined Contributions*. n.p.: Global Alliance for the Future of Food, 2022.

Commissioned by the Global Alliance for the Future of Food.

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## PREFACE

Integrating food systems transformation into the Nationally Determined Contributions (NDCs) – the national climate actions at the heart of the Paris Agreement, is critical to delivering on interconnected ecological, biodiversity, health, economic, social, and cultural goals. Taking a food systems approach builds climate resilience and results in a diversity of context-specific solutions for food production, distribution, consumption, and waste. Yet, food systems are rarely prioritized in climate policy.

This country assessment is part of a suite of publications that are designed to centre food systems transformation in future climate policy:

1. **Untapped Opportunities for Climate Action: An Assessment of Food Systems in Nationally Determined Contributions**: A summary report providing a synthesis of the 14 country assessments with recommendations and priority actions for policymakers and climate policy advisors
2. **A Practical Guide to Assessing Food Systems in Nationally Determined Contributions (NDCs)**: A guide with a framework designed to enable users to take a food systems approach to developing future NDCs and implementing climate policies.
3. A set of **14 country assessments** examining the latest NDCs of 14 countries from around the world, outlining areas of improvement and opportunity.

Users are also encouraged to read **Confronting the Climate Crisis with Food Systems Transformation: Stories of Action from 14 Countries**, which provides a catalogue of global case studies that complement the suite of materials for policymakers, advisors, and advocates of climate action.

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## OVERVIEW OF THE U.S.'S FOOD SYSTEMS

Food is an important component of the economy of the United States (U.S.). In 2019, the country's food systems comprised 5.2% of national gross domestic product (GDP) and accounted for nearly 11% of employment.<sup>1</sup> Food service providers, restaurants, and bars contributed the most to GDP and employment, followed by food and beverage stores. In turn, while farming provided as much as 1.3% of employment in the U.S., it only contributed 0.6% to GDP. Finally, the U.S. has the largest fisheries in the world,<sup>2</sup> which play an important role in employment and economic production in coastal areas.<sup>3</sup>

The U.S. benefits from favourable biophysical conditions for food production and is considered one of the two most fertile areas in the world.<sup>4</sup> Cattle, corn, and soybeans are the most important agricultural commodities.<sup>5</sup> Domestically, as much as 36% of corn<sup>6</sup> and 70% of soybeans<sup>7</sup> are used as animal feed. The U.S. is also a major exporter of soybeans, corn, tree nuts, pork, and beef.<sup>8</sup> Notwithstanding, the country also imports some of its food needs. In 2019, the U.S. imported more than half of domestically consumed coffee, cocoa, spices, fish, shellfish, fresh fruits, and fruit juices.<sup>9</sup>

The U.S.'s food systems face several health challenges linked to food consumption. Obesity rates have more than doubled since 1970, and currently 40% of adults and 18% of teens aged 12 to 19 are obese.<sup>10</sup> In addition, cardiovascular diseases and diabetes are widespread across the U.S. population.<sup>11</sup> Many of these non-communicable diseases (NCDs) are caused by the consumption of low-cost, calorie-dense foods such as soft drinks, snacks, and fried foodstuffs.<sup>12</sup> Dietary choices are related to income; minorities and low-income households disproportionately lack access to healthy and nutritious foods. Low-income groups are also more likely to suffer from obesity and food insecurity.<sup>13</sup> In 2019, around 10% of households were food-insecure, while this number was even higher (13.6 %) for households with children.

The COVID-19 pandemic has had a significant impact on the U.S.'s food systems, as measures to control the spread of the virus resulted in large disruptions in food supply chains.<sup>14</sup> For example, sales at food and beverage stores (such as grocery stores and supercentres) increased by 12% compared to 2019, while sales at food service and drinking places (such as restaurants and cafeterias) decreased by 21%.<sup>15</sup> This created a mismatch between food supply and demand, driving localized food shortages and dramatic increases in on-farm food waste.<sup>16, 17</sup> This along with increases in unemployment have resulted in decreased food security, in particular among Black and Hispanic households for whom the rate of food insufficiency among children exceeded 30% at certain moments during the pandemic.<sup>18</sup> In response, federal expenditure on food assistance increased by 30% in 2020, reaching a record-high of 122 billion USD.<sup>19</sup> In addition to these socio-economic impacts, the NCD-associated health challenges mentioned earlier also raise particular concerns during the COVID-19 pandemic, as they increase the risk of developing severe COVID symptoms and death.<sup>20</sup>

The U.S.'s food systems are a major source of greenhouse gas (GHG) emissions. More than half of agricultural production takes place on large-scale farms,<sup>21</sup> typically monocultures that rely strongly on fertilizer and pesticide use and result in low on-farm biodiversity and soil degradation.<sup>22</sup> As a result, agriculture is the country's second-largest source of GHG emissions, responsible for 9.3% of total emissions.<sup>23</sup> Dietary choices further exacerbate the GHG impact of the country's food systems: red meat accounts for 47% of all

diet-related GHG emissions in the U.S., and all animal product consumption combined accounts for 82%.<sup>24</sup> As such, a shift to healthy, vegetarian diets could reduce food systems emissions by 32%.<sup>25</sup> Furthermore, as much as 30 to 50% of food produced in the U.S. is either lost or wasted.<sup>26</sup> Beyond climatic impacts, food production practices cause soil degradation, deplete aquifers, reduce air quality, and drive biodiversity loss.<sup>27</sup> Between 1992 and 2012, the U.S. lost 11.1 million hectares (27.5 million acres) of arable land due to unsustainable production practices and socio-economic pressures, although the share of arable land has increased slightly since.<sup>28</sup>

The U.S. — and its food systems in particular — face a number of climate vulnerabilities. Increased variability and more intense extreme weather events are already disrupting the country's food systems by increasing costs and complexities. More specifically, climate change is projected to have the following impacts on food production:

- vegetable and fruit production will become more susceptible to reduced water supplies, warmer winters, and more variable spring weather;
- grain production will become more susceptible to warmer and more variable weather, and flooding caused by more frequent heavy rains; and
- beef, pork, and poultry production will become more susceptible to more frequent and intense extreme weather events and interruptions in feed, water, and power supplies.<sup>29</sup>

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## NDC STATUS

Parallel to signing the Paris Agreement in 2015, the U.S. submitted its Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC). In 2017, former President Trump withdrew from the Paris Agreement, nullifying the INDC. Soon after the inauguration of President Biden, the U.S. committed to rejoining the Paris Agreement. President Biden issued Executive Order 14008 in January 2021, specifying that the U.S. would immediately begin the process of developing its Nationally Determined Contribution (NDC).

In its newly submitted NDC, the U.S. sets an economy-wide target to reduce its net GHG emissions by 50 to 52% below 2005 levels in 2030. President Biden developed the American Jobs Plan (AJP) in parallel to the NDC, which is expected to contribute significantly to realizing the goals and targets of the NDC.<sup>30</sup>

**The following assessment was conducted between March and November 2021, and is mainly based on the U.S.'s NDC and interviews with five key stakeholders.**

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## KEY FINDINGS

### NDC DEVELOPMENT PROCESS

TABLE 1: NDC DEVELOPMENT: KEY FINDINGS AT A GLANCE

#### Key findings

- The U.S.'s Nationally Determined Contribution (NDC) was developed through a whole-of-government process that took place via the National Climate Task Force and was led by the White House Office of Domestic Climate Policy.
- The NDC formulation process involved extensive consultations across the federal, state, and local governments as well as with the private sector, civil society, and academia.
- The NDC development process was underpinned by extensive research, modelling, and analysis.
- The assessment that underpins the NDC considered some food systems elements — like CO<sub>2</sub>, methane, and nitrous oxide from land use and hydrofluorocarbons (HFCs) used for refrigeration.

#### Areas for improvement

- Be more transparent about the NDC formulation process, in particular the consultations.
- Carry out a holistic assessment of food systems externalities and potential measures to address them.

### **The U.S.'s NDC was developed through a whole-of-government\* process that took place via a National Climate Task Force\*\* and was led by the White House Office of Domestic Climate Policy.**

The process included both a techno-economic analysis and a consultation, after which the U.S. President Biden approved the NDC. The development process was quite short; it started in January 2021 — with the issuing of Executive Order 14008 — and the NDC was published 3 months later on Earth Day in April 2021.

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\* A whole-of-government approach involves diverse ministries, administrations, and public agencies working collaboratively to provide a common solution to larger problems.

\*\* The National Climate Task Force is comprised of the National Climate Advisor (Chair), Secretary of the Treasury, Secretary of Defense, Attorney General, Secretary of the Interior, Secretary of Agriculture, Secretary of Commerce, Secretary of Education, Secretary of Labor, Secretary of Health and Human Services, Secretary of Housing and Urban Development, Secretary of Transportation, Secretary of Energy, Secretary of Homeland Security, Administrator of General Services, Chair of the Council on Environmental Quality, Administrator of the Environmental Protection Agency, Director of the Office of Management and Budget, Director of the Office of Science and Technology Policy, Assistant to the President for Domestic Policy, Assistant to the President for National Security Affairs, Assistant to the President for Homeland Security and Counterterrorism, and the Assistant to the President for Economic Policy.

**While the formulation process involved an extensive consultation process, it is not wholly clear how the consultation was conducted.** The NDC specifies that its development process included appropriate outreach to domestic stakeholders. The National Climate Advisor and the White House Office of Domestic Climate Policy consulted stakeholders across the federal government, as well as groups representing environmental justice leaders, unions, scientists, state and local governmental leaders, businesses, schools, institutions of higher education, and specialized researchers focusing on pollution reduction. While the NDC describes the types of actors involved, among this large group of stakeholders it is unclear which food systems experts and with what background were consulted. In addition, the NDC does not describe how stakeholders were recruited nor the format in which the consultations took place. Furthermore, interviews revealed that the NDC development process was not fully transparent about when, where, and by whom certain decisions were made.<sup>31</sup> Interviews do indicate, however, that food systems stakeholders were offered opportunities to contribute indirectly to the NDC development through transition memos and comments provided on the work of the U.S. Department of Agriculture, which were ultimately intended to inform the development of the NDC.<sup>32</sup>

**The NDC development process was underpinned by extensive research, modelling, and analysis.** Sectoral pathways were used to determine the mitigation potential of the energy sector (which covers electricity, transportation, buildings, and industry) as well as the land sector. Emission reduction potentials were calculated for a range of federal government interventions (such as standards, investments, taxes, incentives, and programs that support innovation) as well as for actions by states and local governments. In addition, economy-wide projections were made using a bottom-up system dynamics model, which accounts for capital stock turnover timelines. These projections were then compared against economy-wide models from external research. The analysis took account of technology availability, enabling infrastructure, current costs and benefits, and expected future cost reductions.

**While some food systems elements, such as land use and hydrofluorocarbons (HFCs) used for refrigeration, were included in the assessment that underpins the NDC, other food systems elements, such as diets and nutrition, as well as food loss and waste, do not appear to have been included explicitly.** The analysis exploring the mitigation potential of the economy of the U.S. considered, among other issues:

- CO<sub>2</sub> emissions from the land sector including forests and soil carbon;
- ocean-based opportunities for reducing CO<sub>2</sub> emissions; and
- non-CO<sub>2</sub> GHGs including HFCs, methane, N<sub>2</sub>O, and black carbon.

## AREAS FOR IMPROVEMENT

**Be more transparent about the NDC formulation process, in particular the consultations.** While the formulation process involved consultations, it is not clear how the consultations were conducted and the extent to which food systems stakeholders were consulted. It is particularly important to engage diverse food systems stakeholders in consultations such that input received reflects the full range of mitigation and adaptation potential of food systems transformation. In addition, consultations should be conducted in a democratic and participatory manner such that all inputs are actually taken into consideration — and reflected — in the development of targets and measures.

**Carry out a holistic assessment of the entire national food system.** While agriculture and HFCs appear to have been considered in the assessments that underpin the NDC, other important food systems elements such as diets, food loss and waste, and imported emissions were not. Interviews indicate that the assessments underpinning the NDC did not holistically consider most specialized sectors (such as the country's food systems or healthcare sector) likely in an effort to avoid overlap between sectors.<sup>33</sup> This means that important mitigation and adaptation opportunities are not capitalized on. Only a holistic and systematic assessment can enable a thorough exploration of the mitigation and adaptation potential of the U.S.'s food systems while taking account of feedback and externalities. Systems-based research should, therefore, be conducted, emphasizing the ecological, health, social, and economic impacts of transitioning to sustainable food systems, which include increased resilience and profitability as well as improved soil and health benefits. Such research should consider the role that land-based carbon sinks can feasibly play in mitigating climate change. Interviewees indicate that extensive reliance on carbon sinks to meet NDC goals are generally seen to “weaken” the ambition put forward in NDCs, due to significant limitations in the extent to which land can act as a carbon sink,<sup>34</sup> as further evidenced in the most recent assessment report by the Intergovernmental Panel on Climate Change.<sup>35</sup>

## CONTENT OF THE NDC

TABLE 2: NDC CONTENT: KEY FINDINGS AT A GLANCE

### Key findings

- The NDC includes some measures to enable agroecology and regenerative approaches.
- While the NDC does not detail a strong role for local institutions and marginalized people in agroecology and regenerative approaches, agricultural policy in the U.S. considers Historically Underserved Farmers and Ranchers.
- The NDC includes a measure to increase marine carbon sequestration and a measure to increase coastal resilience.
- The NDC includes a measure to phase down the use of hydrofluorocarbons.
- The NDC considers the co-benefits of its measures and targets, most notably job creation, improving public health, and environmental justice.

### Areas for improvement

- Account for emissions and associated deforestation generated in the production of imported commodities.
- Clarify how the marine measures included in the NDC will impact the U.S.'s food systems.
- Include measures to promote nutritious, sustainable, whole-food diets, following an environmental nutrition model.
- Include measures to reduce emissions from livestock.
- Include measures to address food loss and waste by promoting local food production and shortening food supply chains.
- Include measures for building resilience and adaptive capacities of local and national food systems.
- Direct public finance and policy to promote a transformation toward healthy and sustainable food systems.
- Ensure the continuity of policy, such that policies will not be overturned by future administrations.
- Include commitments made in the context of the Global Methane Pledge, the U.S.–China Joint Glasgow Declaration on Enhancing Climate Action, and the Glasgow Leaders' Declaration on Forests.

**While the NDC specifies the accounting approach taken, this does not seem to holistically consider food systems.** The U.S. applies a net-net accounting approach, whereby net emissions in the target year are compared to net emissions in the reference year. The accounting approach follows the structure of the U.S.'s Inventory of Greenhouse Gas Emissions and Sinks, which considers agriculture as a standalone category. Other food systems elements are not considered explicitly but are included under other categories such

as transportation and commercial and residential emissions.<sup>36</sup> Beyond clarifying its accounting approach, the NDC does not provide guidance on integrated assessment and accounting for governments, farmers, corporations, the finance and investment community, consumers, and other relevant stakeholders.

**The NDC includes some measures to enable agroecology and regenerative approaches.**

More specifically, the U.S. will pursue a range of actions to reduce GHG emissions and increase sinks from its land sector, including:

- supporting climate smart agricultural practices, rotational grazing, and nutrient management practices;
- investing in forest protection, reforestation, and forest management; and
- addressing wildfires and restoring fire-damaged forest lands.

**The NDC does not include any targets or measures to meaningfully engage with women, smallholder farmers, local communities, or Indigenous Peoples to promote agroecology and regenerative approaches as part of sustainable and equitable food systems.**

Similarly, the NDC does not recognize or promote the role of these marginalized groups in the targets and measures related to agroecology and regenerative approaches, nor does it provide any safeguards for the protection of their rights. However, while not reflected in the NDC, Historically Underserved Farmers and Ranchers<sup>37</sup> can benefit from a range of provisions that address their unique circumstances.<sup>38</sup> More specifically, the Food, Conservation, and Energy Act of 2014 introduced efforts to address the circumstances and concerns of historically underserved producers, who are defined as socially disadvantaged, beginning, limited resource, and veteran farmers and ranchers. Women are included under all categories, and the category of socially disadvantaged groups consists of American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, and Hispanic farmers and ranchers. Provisions benefiting historically underserved producers include, among other, higher payment rates for implementing conservation practices, priority consideration for certain loans, and loan forgiveness.<sup>39</sup>

**The NDC includes a measure to increase marine carbon sequestration and a measure to increase coastal resilience.**

The U.S. will pursue efforts to increase carbon sequestration in waterways and oceans through blue carbon. In addition, as part of its NDC, the U.S. will support coastal resilience projects through efforts such as pre-disaster planning. While fisheries are a crucial element of the food systems of the U.S., it is unclear how these measures will impact employment in fisheries, as well as the food and nutritional security that these fisheries safeguard.

**The NDC includes a measure to phase down the use of HFCs.** As part of its NDC, the U.S. will implement the American Innovation and Manufacturing (AIM) Act of 2020, which requires companies to transition to non-HFC refrigerants.

**The NDC considers the co-benefits of its measures and targets, most notably job creation, improving public health, and environmental justice.**

The U.S. intends to deliver its NDC by investing in a range of priorities, including efficiency, climate smart agriculture, and forestry. The NDC highlights that these investments will have co-benefits including the creation of decent, well-paid, low-carbon jobs; improved public health; and equity and environmental justice. Special attention is paid to investments that benefit

marginalized communities and ensuring that domestic firms are not put at an international, competitive disadvantage due to the U.S.'s decarbonization efforts. It is unclear, however, how environmental justice will be safeguarded in the country's food systems and whether the U.S. is also committed to achieving environmental justice at a global level.

**The NDC does not include any targets or measures to promote nutritious, sustainable, whole-food diets.** While the U.S. Departments of Agriculture and of Health and Human Services are required to publish dietary guidelines every 5 years — the most recent of which were published in December 2020 — these guidelines are not referenced in the NDC.<sup>40</sup> What's more, these guidelines do not make reference to the environmental impacts of dietary choices. Interviewees suggest that diets are a polarizing issue in the U.S., and that it is politically unfavourable to be seen to be intervening with people's food choices.<sup>41</sup> The omission of diets and nutrition in the U.S.'s NDC may be reflective of this political reality.

**The NDC does not include any adaptation measures.** At the time of writing, it is unclear whether the U.S. intends to submit an Adaptation Communication, which could contain adaptation targets and measures, to the UNFCCC.

## AREAS FOR IMPROVEMENT

**Account for emissions and associated deforestation generated in the production of imported commodities.** The footprint of the U.S.'s food systems extends beyond its border and includes emissions from food produced abroad and consumed in the U.S. By also accounting for imported emissions (for example, through production and consumption-based emissions accounting), the U.S. can develop more comprehensive targets and measures to reduce food systems emissions.

**Clarify how the marine measures included in the NDC will impact the U.S.'s food systems.** Efforts to mitigate and adapt to climate change that involve oceans and waterways may have both positive and negative impacts on aquatic food systems elements. It is therefore important to design these measures in a way that maximizes both climate and food systems co-benefits. For instance, efforts to improve coastal resilience can involve supporting sustainable fisheries management, thereby also safeguarding food security and employment. Similarly, mangrove conservation ensures the survival of fisheries that use the mangroves as nursery grounds, while also serving as a blue carbon solution by sequestering carbon.

**Include measures to promote nutritious, sustainable, whole-food diets.** Such measures could include addressing sustainability concerns in dietary guidelines; adding controls on marketing of ultra-processed foods; promoting healthy diets as part of public health education; as well as supporting public procurement and feeding programs. Existing federal assistance programs that cover healthy foods — such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the Supplemental Nutrition Assistance Program (SNAP), and the Children and Adult Care Food Program (CACFP) — can be extended to increase focus on plant-based foods due to their nutritional (as well as climatic) benefits. Similarly, collaborations with food service providers (such as those catering the cafeterias of hospitals and schools) can also be crucial in catalyzing a transition to sustainable and healthy diets. These measures could be based on a model of environmental nutrition. Environmental nutrition frameworks (such as the one developed by Health Care Without Harm)<sup>42</sup> posit that the health impacts of the foods we eat extend far beyond their measurable

food components (such as calories, fats, and carbohydrates). Environmental nutrition models also consider the wider impacts of food systems on public health through factors such as climate change and food insecurity.<sup>43</sup>

**Include measures to address food loss and waste.** The NDC does not include any measures to reduce food loss and waste (which reflects the lack of federal food loss and waste policies in the U.S.)<sup>44</sup> despite the large mitigation potential of such measures in the country.<sup>45</sup> In fact, ReFED estimates that investments to reduce food waste in the U.S. by 50% by 2030 are likely to have a 5-to-1 return on investment, in addition to creating 51,000 jobs, reducing GHG emissions, and saving water.<sup>46</sup> To that end, the Food Waste Action Plan has recommended that food loss and waste are embedded in the NDC.<sup>47</sup> Potential measures to reduce food loss and waste include providing tax incentives for food recovery to farmers, organizing awareness campaigns about food waste for consumers, and imposing fines for the disposal of food waste in landfills.<sup>48</sup> Furthermore, by promoting local food production and shortening supply chains, the loss of food that occurs during the transportation stage can be reduced, which can be complemented by investments in infrastructure to measure, reduce, and recycle organic waste. Finally, it is important to encourage state and local governments to address food loss and waste through regulations, guidelines, and federal incentives. Some states and municipalities, such as California, Vermont, and Connecticut, already have ambitious laws in place that seek to reduce the proportion of food waste that ends up in landfills.<sup>49</sup> In July 2021, the U.S. Congress passed two bills that address food loss and waste — the Composting Act and the Zero Waste Act<sup>50</sup> — which interviewees reveal are unlikely to be heard in the Senate and become law.<sup>51</sup>

**Include measures for building resilience and adaptive capacities of local and national food systems.** While the U.S. will support coastal resilience as part of its NDC, no other measures are included for building resilience and adaptive capacities. Considering the vulnerabilities of the country's food systems to climate change, measures for building food systems' resilience will likely be key to adapting adequately to climate change.<sup>52</sup> Importantly, such measures should encourage diversified food production suited to local ecosystems as well as to changing climatic patterns. If the U.S. decided to submit an Adaptation Communication to the UNFCCC in the near future, such adaptation measures could be included in that submission.

**Include measures to reduce emissions from livestock.** The U.S. NDC does not specify how it will reduce methane and nitrous oxide emissions, citing only programs and incentives, while avoiding reference to much-needed regulation. The latest Intergovernmental Panel on Climate Change (IPCC) report makes clear that action on the potent, but short-lived, GHG methane will be critical to mitigating climate change.<sup>53</sup> In the U.S., methane emissions are strongly associated with the rise of the factory farm system, which includes the storage of massive amounts of manure in lagoons that are then liquefied and often spread on fields. Halting and transitioning away from this factory farm system is crucial for reducing food systems emissions in the U.S.<sup>54</sup> Factory farms have also been linked to increased risks for animal welfare and human health.<sup>55</sup> In this context, it is important to replace factory farm animal production systems with well-managed, appropriately scaled grazing systems that emit less and are more climate-resilient.<sup>56</sup> However, transforming the U.S. livestock sector is challenging, as companies and lobby groups in the sector actively work to resist any climate-related policy on a federal or state level.<sup>57</sup>

**Direct public finance and policy to promote a transformation toward healthy and sustainable food systems.** The NDC does not include any targets or measures to direct finance to promote food

systems transformation. It is particularly important to break from harmful subsidies and perverse incentives that encourage the perseverance of unsustainable food systems and that would therefore weaken any new incentives to encourage food systems transformation. Between 1995 and 2020, the U.S. provided over 240 billion USD in agricultural subsidies that promoted the production of specific commodities.<sup>58</sup> This finance creates incentives for farmers to produce carbon-intensive commodities such as corn, soy, and beef, and should be re-oriented toward more diverse, regionalized, and regenerative agricultural approaches. Redirecting this finance — for example, by making public support conditional on sustainable practices — can catalyze a transition to sustainable and healthy food systems. While the U.S. is already implementing such policies to some extent, they only represent a small percentage of public expenditure on agriculture.<sup>59</sup> One example is the Pandemic Cover Crop Program, whereby farmers who plant cover crops (a regenerative approach that supports soil, water, and pest management) are offered a rebate of 5 USD per acre, if they also buy federal crop insurance. Such conditional subsidies should be further extended to support sustainable and healthy food systems transformation. In addition, finance can be extended to programs that support the transition to nutritious, sustainable whole-food diets, as discussed earlier. Finally, interviewees indicate that the 3.5 trillion USD budget reconciliation process<sup>60</sup> offers an opportunity to greatly expand funding for existing conservation programs.<sup>61</sup> These programs support farmers who want to implement more agroecological practices, such as investments in soil health building perennials, cover crops, or sustainably managed grazing, yet farmer demand to participate in these programs well exceeds available money. There are also opportunities to expand investments in local food systems infrastructure within the budget reconciliation process.<sup>62</sup> The next Farm Bill (the development for which begins in 2022) also offers valuable opportunities to leverage public policy to unlock food systems transformation, most notably by applying a climate resilience lens during policy development.<sup>63</sup>

### **Ensure the continuity of policy, such that policies will not be overturned by future administrations.**

In this context, it is key to explore avenues for rule-making for climate action that extend beyond Executive Orders (which can easily be overturned by incoming presidents) but that also do not rely excessively on legislation that may not pass through a divided Congress.<sup>64</sup> It is also important to emphasize the co-benefits of food systems transformations using language that is bipartisan. Interviewees indicate that food systems challenges have been on the political agenda of both the current and previous administrations, but that the framing of these challenges has differed strongly between administrations.<sup>65</sup> Under the Trump administration, efforts to transform U.S. food systems were focused on increasing the resilience and profitability of food production. The Biden administration has emphasized other co-benefits, most notably environmental justice. Focusing on co-benefits that have bipartisan support can ensure the continuity of policies.

**Integrate the commitments made in the context of the Global Methane Pledge, the U.S.–China Joint Glasgow Declaration on Enhancing Climate Action, and the Glasgow Leaders’ Declaration on Forests.** The U.S. led and endorsed several pledges and initiatives that were announced during COP26 in Glasgow (but outside the official UNFCCC regime). These pledges, if fully and adequately implemented, have the potential to accelerate the U.S.’s shift toward sustainable food systems, in particular through measures that promote sustainable trade and address methane emissions from livestock as well as embedded deforestation in food imports. They also suggest that the political will exists to implement some of the measures described in this section. But to ensure progress, transparency, and accountability, it is crucial that these international commitments and respective actions be fully integrated and anchored in the U.S.’s NDC.

## IMPLEMENTATION OF THE NDC

TABLE 3: NDC IMPLEMENTATION: KEY FINDINGS AT A GLANCE

### Key findings

- The U.S. has a coordination mechanism in place to support the implementation of the NDC.
- The NDC includes a commitment toward ensuring a fair distribution of impacts.

### Areas for improvement

- Apply a participatory and inclusive approach — encompassing federal, state, and local governments as well as the private sector and civil society — when implementing the NDC.
- Monitor performance through a transparent and democratic process that is informed by scientific research.
- Detail a stronger role for Historically Underserved Farmers and Ranchers in agroecology and regenerative approaches, paying particular attention to women, smallholder farmers, local communities, and Indigenous Peoples.
- Include policies and measures that can unlock private and multilateral investments and promote food systems transformation.
- Include measures that aim to ensure a fair distribution of impacts, aligned with the U.S.'s commitment toward prioritizing investments that benefit historically disadvantaged communities.

**The U.S. has a coordination mechanism in place to support the implementation of the NDC.** A whole-of-government approach will be taken to implement the NDC at the federal level, building on the climate leadership of state, local, and tribal governments. The private sector will also be engaged in the implementation of the NDC, with the aim of mobilizing investment in innovation, technology, and infrastructure.

**The NDC does not include any provisions to monitor its implementation or track progress.**

Similarly, the NDC does not include any provisions to conduct research to inform the monitoring process.

**While the NDC includes a commitment toward ensuring a fair distribution of impacts, it does not put forward concrete actions that aim to ensure this.** In its NDC, the U.S. commits to environmental justice and prioritizing investments that benefit historically disadvantaged communities. Despite this

commitment, no concrete actions are put forward in the NDC for ensuring a just distribution of costs and benefits.

**While the NDC highlights the need for private investment, it does not put forward concrete actions to this end.** The U.S. will work with the private sector to mobilize private investments to deliver on its NDC. It recognizes that the strength and predictability of its policy frameworks will be key for catalyzing private sector investments in innovation and low-carbon technologies and infrastructure. The U.S. also highlights that the economic and humanitarian costs of not implementing its NDC are far higher than the implementation costs.

## AREAS FOR IMPROVEMENT

**Apply a participatory and inclusive approach when implementing the NDC.** Collaboration and coordination between federal and state governments is an important precondition for ambitious climate action in the U.S.<sup>66</sup> Beyond collaborating with public actors, it is also important to leverage private finance and meaningfully engage with all relevant stakeholders during NDC implementation. For example, fishers and coastal communities that depend on marine resources should play a central role in implementing marine measures. In addition, by building cross-sectoral collaboration and facilitating stakeholder dialogues, best practices can be exchanged and institutional capacity can be strengthened. Most importantly, if diverse stakeholders engage with and actively participate in the implementation of the NDC, the process can function as an important step in bridging widening bipartisan divides around both climate and food systems challenges.

**Monitor performance through a transparent and democratic process that is informed by scientific research.** A robust monitoring mechanism is needed to track progress in NDC implementation and identify co-benefits, negative impacts, and trade-offs. In addition, research is needed to support an ambitious, transdisciplinary, and inclusive transformation of U.S. food systems. Such research should embrace adaptive learning by seeking input and evidence from Historically Underserved Farmers and Ranchers, paying particular attention to women, smallholder farmers, local communities, and Indigenous Peoples. In fact, improved research capacities can be an important way to safeguard progress and manage knowledge at the local level, which is particularly important when considering the deepening political fissures in the country.<sup>67</sup>

**Detail a stronger role for local institutions and vulnerable people, such as Historically Underserved Farmers and Ranchers, in agroecology and regenerative approaches.** It is important to engage meaningfully with women, smallholder farmers, local communities, and Indigenous Peoples to promote agroecology and regenerative approaches as part of sustainable and equitable food systems. This could include more direct participation in policy development and implementation, as well as a stronger role for local knowledge in researching and developing best agricultural practices. Such an approach would align well with the U.S.'s commitment to environmental justice.

**Include policies and measures that can unlock private and multilateral investments and promote food systems transformation.** These investments should strengthen rural livelihoods and support communities in producing better and healthier food under ecologically beneficial forms of farming. This can include specific vehicles for financial assistance, capacity-building for farmers, scaling support for grassroots

sustainable and healthy food service providers, and the development and transfer of technologies that are suited to local realities. Channelling investments to Historically Underserved Farmers and Ranchers would align well with the U.S.'s commitment to environmental justice.

**Include measures that aim to ensure a fair distribution of impacts, aligned with the U.S.'s commitment toward prioritizing investments that benefit historically disadvantaged communities.**

The American Jobs Plan, which was released in parallel to the NDC, can be a useful vehicle for leveraging investments while ensuring a just distribution of costs and benefits. Under the plan, 2.2 trillion USD will be invested in infrastructure, which has been defined in a broad manner to also include investments in internet, wetlands, and affordable housing, with the aim of effectuating employment and climatic benefits.<sup>68</sup> While the plan aims to increase the resilience of the country's food systems, it is not yet clear how this will be pursued. Investing in the food service sector to prioritize access to healthy and nutritious food produced in an ecologically beneficial manner and decent jobs will be key for ensuring that marginalized communities benefit from the envisaged food systems transformation.

## CASE STUDY SUMMARY

### Case Study: ReFED, United States

ReFED is a national non-profit organization dedicated to ending food loss and waste across U.S. food systems by advancing data-driven solutions. In 2019, 35% of the U.S. food supply, some 80 million tons worth U.S. 408 billion USD, was considered surplus, and most of that ends up being thrown away. ReFED takes a holistic view of food systems, aiming to achieve a 50% food waste and loss reduction target in accordance with the United Nations' 2030 Sustainable Development Goals. Their vision is for *"A sustainable, resilient, and inclusive food system that optimizes environmental resources, minimizes climate impacts, and makes the best use of the food we grow."*

ReFED believes that food waste is a systemic problem and solving it will require a systemwide response. ReFED's Roadmap to 2030 looks at the entire food value chain and identifies seven key action areas showing where food systems must focus efforts over the next 10 years and also includes a detailed financial analysis to help direct the private, public, and philanthropic capital investments needed to fund these efforts. Food waste prevention priorities include reshaping consumer environments, optimizing the harvest, enhancement of product distribution, refining product management, and maximizing product utilization. In line with their Target-Measure-Act framework for food waste reduction, their Roadmap to 2030 is a comprehensive blueprint to help food businesses, governments, funders, non-profits, and others act.

ReFED focuses on three key strategic programmatic priorities and run a wide variety of projects under each of these:

1. *Data and insight collation*: Focusing on leveraging data and insights to highlight supply chain inefficiencies and economic opportunities moving food systems from acting on instinct to insight-driven actions.
2. *Capital and innovation*: Catalyzing capital to spur innovation and scale high-impact initiatives.
3. *Stakeholder engagement*: Significant focus is placed on movement-building, stakeholder collaboration, and coordination across the value chain. According to Dana Gunders, Executive Director at ReFED, *"Food waste is an area where we can bring real value and added impact. Our role is to catalyze, convene, and explore opportunities for collaboration, creating additionality to the work of others."*

ReFED works in close cooperation and collaboration with several U.S. government departments, including the U.S. Environmental Protection Agency, the U.S. Food and Drug Administration, and the U.S. Department of Agriculture. This collaboration focuses on food waste reduction, advancing data collection and measurement on progress, and the identification of new cross-sector collaboration opportunities. For example, ReFED is advocating for two new food waste bills, which aim to reduce the amount of food wasted in the U.S.

ReFED has played a significant role in shaping the food waste narrative in the U.S. over the last 10 years, including the connection between food waste and climate change: food waste in the U.S. contributes to 4% of total U.S. GHG emissions.

Further information and access to the detailed case study can be found [here](#).

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## ACKNOWLEDGEMENTS

We are grateful to the individuals and organizations who provided their time and expertise, in many different ways, to the development and improvement of this assessment: John Stoddard, Emma Sirois, Dana Gunders, Sophia Murphy, Ben Lilliston. This country assessment was made possible with the support the David Rockefeller Fund, Crown Family Philanthropies, and Oak Foundation.

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