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Institute for the Advanced Study
of Sustainability

**International Policy Trends and Best Practices on Integrated
Solutions for Biodiversity and Climate Change: Summary
Report**

June 2023

I. Purpose of the Report

This report summarises best practices from the FY2022 Partnership Study on Integrated Solutions for Biodiversity and Climate Change. The project, supported by the Japanese Ministry of Environment, is part of a wider effort led by the IDEA Consultants Inc to provide policy recommendations for the Japanese government to develop integrated policy solutions for climate and biodiversity at regional and national levels. The United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) has summarized recent international policy developments on such solutions, and introduced best practices by compiling examples of local initiatives aimed at transforming food systems.

II. International Policy Efforts towards Integrated Solutions for Climate and Biodiversity

1) IPBES-IPCC Joint Workshop Report

In December 2020, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Intergovernmental Panel on Climate Change (IPCC) held their first co-sponsored workshop. A follow-up report assessed the interlinkages between biodiversity and climate, and emphasized the importance of implementing measures that minimize trade-offs and maximize co-benefits in order to address both challenges.

IPBES-IPCC Joint Workshop Report

<https://www.ipbes.net/events/ipbes-ipcc-co-sponsored-workshop-biodiversity-and-climate-change>

2) G7 Climate Environment and Energy Ministers Meeting (May 2022)

The G7 Climate, Energy and Environment Ministers' Meeting held in Berlin, Germany emphasized that three global crises – climate change, biodiversity loss, and pollution – are interrelated and stem from unsustainable consumption and production patterns. There is an urgent need for immediate, short, and medium-term actions that harness the synergies of climate change, biodiversity, clean energy, and environmental protection. The Communiqué addressed some key points for integrated solutions as follows:

- Promoting efforts to tackle the disproportionate impacts of climate change and biodiversity loss (gender, poverty, social inequality)
- Implementing clear policies and strategies for resource mobilization aligned with climate change and biodiversity goals

- Implementing COVID-19 recovery policies in line with the Paris Agreement and Nature Positive (greening of public procurement, etc.).
- Implementing nature-based solutions (NbS) with urgent actions to decarbonize and reduce greenhouse gas emissions
- Investing in climate-smart and nature-positive agricultural innovations to drive integrated solutions
- Delivering effective measures in promoting supply chain sustainability and resilience
- Adopting the Paris Agreement and the Post-2020 Biodiversity Framework (later the Kunming-Montreal Biodiversity Framework), and achieving the goals through the implementation of comprehensive efforts to transform the food system and strengthen the One Health approach

G7 Climate, Energy and Environment Ministers' Communiqué

https://www.bmuv.de/fileadmin/Daten_BMU/Download_PDF/Europa_International/g7_climate_energy_environment_ministers_communique_bf.pdf

3) Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development (July 2022)

The Conference, co-convened by the United Nations Department of Economic and Social Affairs (UNDESA) and the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), was held at UNU headquarters in Tokyo to discuss synergies between the Paris Agreement and the SDGs with more than 130 experts from around the world. The Conference Background Note addressed the need to strengthen scientific knowledge to fill in the gap between climate and the SDGs. The need for integrated policies among Nationally Determined Contributions (NDCs), the SDGs, and National Biodiversity Strategies and Action Plans (NBSAPs) was also highlighted in the conference summary document.

Conference Summary: Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development

https://www.un.org/sites/un2.un.org/files/conference_summary_strengthening_synergies_2022.pdf

4) The 27th Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC-COP27)

The Sharm el-Sheikh Implementation Plan underlines the following key points for an integrated approach:

- *“The urgent need to address, in a comprehensive and synergetic manner, the interlinked global crises of climate change and biodiversity loss in the broader*

context of achieving the Sustainable Development Goals, as well as the vital importance of protecting, conserving, restoring and sustainably using nature and ecosystems for effective and sustainable climate action” (Preamble)

- *“vulnerabilities of food production systems to the adverse impacts of climate change” (preamble), “the importance of protecting, conserving and restoring water and water-related ecosystems” (Para21),*
- In addition, ocean, forest, and agriculture sections have been included in the cover decisions for the first time

Sharm el-Sheikh Implementation Plan

https://unfccc.int/sites/default/files/resource/cop27_auv_2_cover%20decision.pdf

In addition to the official intergovernmental negotiations, COP27 side events addressed the challenges and opportunities in a more holistic and comprehensive way, tackling various climate and biodiversity issues including the following:

Trade-offs between renewable energy deployment and biodiversity conservation

To achieve net zero by 2050, rapid deployment of renewable energies is needed, requiring large amounts of land and raising concerns about the impact on biodiversity. According to a study presented at the COP27 side event hosted by Nature Conservancy “Where will it all go? Land use implications of the accelerated deployment of renewable energy,” it is estimated that the United States would require approximately 6% of its national land, while Germany would need around 2% of its national land solely for wind power by 2030. To minimize biodiversity conservation trade-offs, multi-benefit strategies, such as utilizing abandoned mine sites, factory sites, and/or co-location with farmlands, are needed. In addition, renewable energy production requires the mining of rare metal resources which highlights the need for policies to minimize trade-offs.

Strengthening policies to enhance synergies

The need for coherent policy and integrated data to provide incentives to attract private and public funds was underlined. In addition, the importance of participatory budgeting was highlighted for better resource allocation decisions and ensuring that synergies are maximized. Also, the issue of harmful subsidies was raised, as well as the need for a new subsidy system to enhance synergies and minimize trade-offs.

Integrated solutions through a food system reform

COP27 was the first climate COP which hosted pavilions dedicated to food systems and recognized the vital role of the food sector in climate change mitigation and adaptation, and biodiversity conservation. Unsustainable food systems not only account for more than one third of global greenhouse gas emissions, but also lead to biodiversity loss and land degradation. Discussions at

these pavilions highlighted the critical need to transform unsustainable food systems to address multiple challenges simultaneously, including climate change, biodiversity loss, food security, and social inequalities. During COP27, the Food and Agriculture Organization (FAO) launched the Food and Agriculture for Sustainable Transformation Initiative (FAST) together with Egypt's COP27 Presidency, aiming to increase climate financing allocation to agriculture and food systems.

Challenges in strengthening synergies (integration) between climate and biodiversity measures

One of the main challenges to effectively addressing the intertwined climate change and biodiversity issues is the governance structures. The decision-making processes for climate change and biodiversity conservation are often separate, with different institutions, policies, and stakeholders involved. Various side events at COP27 discussed the need to bridge the gap between climate change and biodiversity agendas and foster integrated decision-making processes. These include enhancing coordination across stakeholders, ministries, and national and regional governments. The discussions underlined the challenges of engaging different governmental organizations and addressing the need for integration between ministries and agencies.

5) The 15th Conference of the Parties to the UN Convention on Biological Diversity (CBD-COP15)

The Kunming-Montreal Global Biodiversity Framework (GBF) adopted at the CBD-COP15 also addressed the urgent need for integrated solutions. The GBF consists of a set of ambitious targets including 23 targets and 2030 Mission to achieve the 2050 Vision of living in harmony with nature. Of these, Target 8 clearly addresses both climate and biodiversity measures by utilizing nature-based solutions and/or ecosystem-based approaches to minimize the impact of climate change on biodiversity.

Target 8: Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions, including through nature-based solution and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity.

Furthermore, Target 19(e) of the Kunming-Montreal Global Biodiversity Framework highlights the importance of maximizing the co-benefits and synergies of biodiversity and climate financing in the implementation of National Biodiversity Strategies and Action Plans (NBSAPs).

The Kunming-Montreal Global Biodiversity Framework

<https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf>

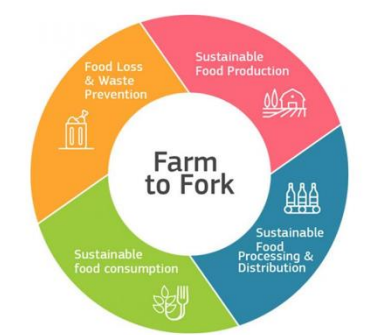
III. Best Practices for Integrated Solutions through Food System Transformation

1) EU Strategies for Sustainable Food Systems

The EU adopted “Farm to Fork Strategy” in May 2020 as part of the European Green Deal, to build food systems that are fair, healthy, and environmental-friendly, ensuring that the food system is environmentally neutral or that it even has a positive impact, making EU competitive in the global food market.

The specific numerical targets in the strategy include:

- (1) Halving the amount of chemical pesticides usage and its potential health risks by 2030
- (2) Halving the sale of antibiotics for livestock and aquaculture by 2030
- (3) Converting at least 25% of EU farmland into organic farmland by 2030



Source: European Commission (2020)¹

At the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26) held in Glasgow in November 2021, local governments agreed on the Glasgow Food and Climate Declaration (hereinafter referred to as "Glasgow Declaration"), which commits to implementing integrated food policies to respond to climate change emergencies, and calls on all governments around the world to do the same. Today's food systems, a complex web of activities involving the production, processing, transport, and consumption of food, are globalized. Food-related greenhouse gas emissions account for one-third of global greenhouse gas emissions.

In particular, a fundamental reform of food systems is needed in urban areas, where approximately 80% of the world's population resides. This section introduces ambitious local actions and approaches to simultaneously addressing climate and biodiversity, using examples from the City of Paris and Glasgow.

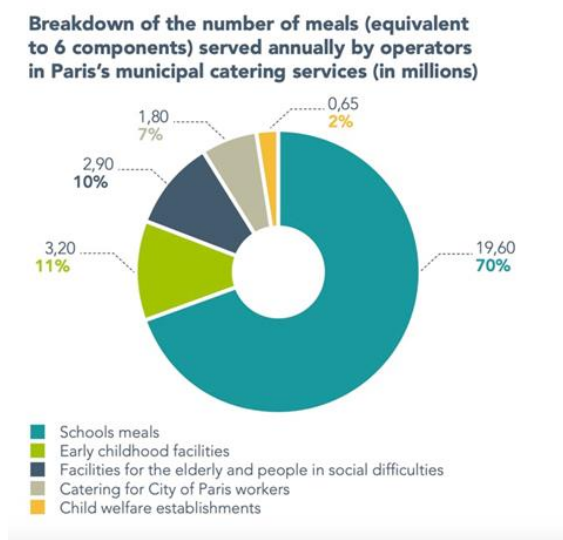
¹ Farm to fork strategy (European Commission): https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en#Strategy

2) The Case of Paris: Paris Strategy for Sustainable Food (from the Paris Climate Action Plan²)

The City of Paris feeds 2.2 million citizens, one million workers from outside the city, and 280,000 tourists every day. The food is sourced from inside and outside of Paris, and according to 2014 calculation, the food consumed by the residents and tourists emits approximately 4.8 million tons of CO₂ per year, which includes production, transportation, and processing. This is the second largest source after air transportation, accounting for approximately 18% of the total emissions. Based on this analysis, the city implemented fundamental system change to reduce food-related greenhouse gas emissions by 40% by 2030.

Sustainable food approach through municipal catering services (the Paris Sustainable Food plan 2015-2020³)

One of the approaches taken by the city to reform the food system is to make municipal catering services more sustainable. The service provides 30 million meals per year to 1,200 public facilities (schools, daycare centers, institutions for the elderly and socially vulnerable, child welfare facilities, shelters, etc.), and had set a goal of 50% sustainable food served in all school lunches by 2020.



Source: Paris Sustainable Food plan 2015-2020

School lunches (kindergartens, elementary and secondary schools) account for the largest share (2.2 million meals or 69%) of the food services provided in Paris. Public school management organizations called *Caisses des écoles* are primarily in charge of school lunches and offer at least one organic or certified food or vegetarian meal each week. In most cases, foods are often procured under contracts

² Paris Climate Action Plan: Towards a carbon neutral city and 100% renewable energy (City of Paris, 2020), <https://cdn.paris.fr/paris/2020/11/23/257b26474ba3ba08ee02baa096f9c5dd.pdf>.

³ Sustainable Food Plan 2015-2020 (Mairie de Paris), accessed March 13, 2023, <https://cdn.paris.fr/paris/2019/07/24/725249f7bb31e255a00a85dfa98037e6.pdf,3>.

with multiple suppliers, and are cooked either in a central kitchen or on site at the school. More than half of the *Caisses des écoles* have adopted the "Mon Restau Responsable⁴" approach, and various on-site efforts, such as weekly ingredient adjustments and reductions in food waste, have helped to lessen the environmental impact of the production process, and the additional costs associated with the introduction of organic food.

As a result of the 2018-2020 efforts, the carbon footprint of the school lunch menu was reduced by 30%. In addition, the percentage of organic food served in the Paris school lunch program increased from 7.4% in 2008 to 21.5% in 2013 (24.3% for sustainable food overall), well above the 2.4% average for France as a whole, making the Paris municipality one of the leading public purchasers of organic food in France. Subsequently, as of 2019, the initial goal of 50% was achieved.

Challenges

The production of organic agricultural products is often handled by small family-run businesses, and there were challenges in both production and logistical capacity to supply high quality and adequate organic food to all public-school lunches in Paris. As mentioned earlier, this led to additional costs (estimated at an average of 19% in France), making it a challenge to develop an effective supply chain and optimize procurement strategies for organic food products. At the same time, in the Ile-de-France region near Paris, known as the "Food Warehouse" of Paris, while the number of farmers decreased by one-third from 1970 to 2010 and dairy and field crops declined, the average area of farms tended to expand, leading to soil degradation. Recognizing these issues, a movement has emerged to conserve and restore farmland in the Ile-de-France region while restoring and rebuilding relationships between producers and consumers, and between urban and peri-urban farming communities, with the aim of improving self-sufficiency in sustainable food and expanding production of organic agricultural products at the state level.

In 2014, through a consultation process with agricultural producers and all stakeholders and agencies involved in the food services in and around Paris, the Paris Sustainable Food Plan 2015-2020 ("2015 version") was developed.

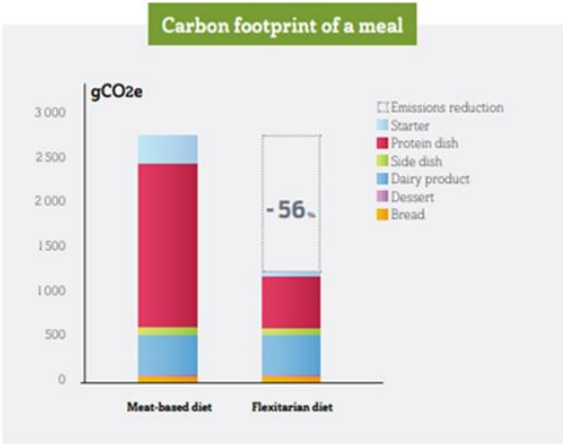
Achievements and subsequent initiatives (from the Paris Sustainable Food plan 2022-2027⁵)

Through the initiative, Paris achieved a 50% sustainable food rate for public school meals in Paris by 2020, which is ahead of schedule set by the 2015 Sustainable Food Plan. In terms of environmental effects, it was reported that a 7% reduction in greenhouse gas emissions per meal was achieved. The

⁴ Mon Restau Responsable." Mon Restau Responsable. Accessed June 6, 2023. <https://www.monrestauresponsable.org/>.

⁵ Plan Alimentation Durable 2022-2027 (Mairie de Paris), accessed March 13, 2023, <https://cdn.paris.fr/paris/2022/12/26/plan-alimentation-durable-2022-2027-version-finale-19-decembre-2022-light-plus3-QgJx.pdf>,16.

reduction of meat consumption, which is a major source of CO₂ emissions, and the active introduction of vegetarian menus are thought to have contributed significantly to this result.



Source: Paris Climate Action Plan⁶

In June 2022, a new plan, the Paris Sustainable Food Plan 2022-2027 ("2022 version"), was adopted. The new plan sets a new major goal: "By 2027, 100% sustainable public-school lunches will be achieved through a new procurement standard that prioritizes the use of organic and certified foodstuffs and that 50% of foodstuffs will come from the Paris metropolitan area (within 250 km)."

Key initiatives from the 2022-2027 version are as follows:

1. Cafeterias to protect climate and biodiversity:

The initiative aims to address both climate and biodiversity through promoting organic farming permaculture and agroforestry, and establishing procurement networks within geographical proximity. Additionally, increasing vegetarian and flexitarian menus and the active use of certified foods are being promoted to prevent overfishing and ensure animal welfare. The city has also decided to aim for waste-free public school lunches and is working to achieve 100% local collection of food waste in cooperation with local farmers, and to switch to reusable containers.

2. Teams and supporters who promote the Sustainable Food Plan:

The initiative aims to enhance collaboration across the stakeholders, experts, and citizens as beneficiaries, and to develop partnerships to share challenges, examples, tools, data, and education. The city has established a council of scientists and citizens to expand social solidarity so that all people, including those who are struggling to make a living, can enjoy sustainable food.

3. Measures to reduce food loss:

⁶ Sustainable Food Plan 2015-2020 (Mairie de Paris),52

Adopted in 2015, the "Plan de lutte contre le gaspillage alimentaire" (Plan to combat food waste) aims to reduce food waste by 50% by 2025. The initiative sets concrete actions such as devising menus to avoid leftovers and donating food to places where it is needed. The passing of the national regulation against food waste has helped to spread the initiative at the individual level. As a part of this initiative, a mobile app which can search for short-dated food products was developed among supermarkets. Restaurants, stores, and households can bring in surplus food to store in "solidarity refrigerators", making it available to those in need. As a result of these measures, the final food waste is collected and composted. In 2018, the French Environment and Energy Management Agency (ADEME) initiated a pilot project on a biogas plant using food waste with the goal of establishing a medium-scale biogas production system by 2030. The ADEME aims to recycle 1,000 tons of waste and create 3.5 times more jobs than at incineration facilities.

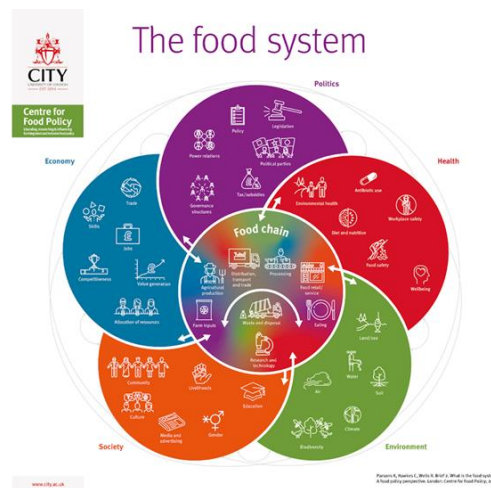
3) Sustainable Food System in Glasgow City, the United Kingdom (from Glasgow City Food Plan 2021-2031⁷)

In June 2022, the City of Glasgow introduced the Glasgow City Food Plan 2021-2031 ("City Food Plan"), a comprehensive strategy aimed at transforming the local food system sustainably. Operating under the slogan "Good Food for All," the plan's primary objective is to ensure that all residents of Glasgow have equitable access to nutritious, culturally appropriate, and affordable food, regardless of their social or economic circumstances. Simultaneously, it seeks to establish a sustainable food system that minimizes the environmental footprint associated with food production while promoting economic growth. By pursuing these goals, the City of Glasgow envisions fostering a sense of civic pride among its inhabitants.

The Glasgow Food Policy Partnership (GFPP), a collaboration of key stakeholders representing public agencies, private businesses, and the third sector, has taken the lead in developing the City Food Plan. This inclusive partnership brought together over 600 individuals and organizations from various sectors across Glasgow. Through the formation of working groups and extensive public consultation, the GFPP ensured that a wide range of perspectives and opinions were considered. Drawing from this diverse input, an action plan was formulated to reflect the collective vision and goals of the city's food system transformation.

The following diagram explains an overview of the plan, illustrating the interconnectedness of the food system with various aspects of people's lives. Rather than existing in isolation, the plan was developed based on the perception that the food system is intricately entwined with social, economic, health, environmental, and political factors.

⁷ Glasgow City Food Plan 2021-2031 (Glasgow Centre for Population Health), accessed March 13, 2023, <http://goodfoodforall.co.uk/wp-content/uploads/2021/05/FINAL-GLASGOW-CITY-FOOD-PLAN-May-2021-1.pdf>.



Source: The Centre for Food Policy, City University of London⁸

The following two cases show integrated approach used by the city.

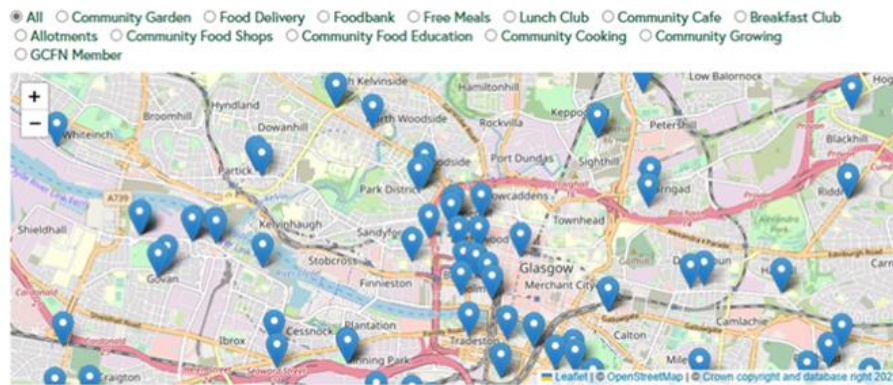
Case 1: Food for Life approach in the public sector

Building upon the previous successful initiative led by Food for Life Scotland (FFLS), which focused on implementing sustainable food practices in schools, nurseries, and hospitals in Glasgow City, this initiative aims to extend these practices to a wider range of public facilities operated by local authorities. This expansion includes health and care facilities, higher education institutions, prisons, and leisure and cultural facilities. The pilot school lunch program has already demonstrated success by serving over 34,000 meals daily to more than 130 elementary schools and other institutions. The achievement of this program can be attributed to the collaborative efforts of various stakeholders across sectors, including government and business.

Case Study 2: Glasgow Community Food Network

The Glasgow Community Food Network (GCFN) emerged as a collaborative effort between public agencies, private businesses, the third sector, and engaged citizens. The network encompasses a diverse range of stakeholders, including chefs, restaurants, farmers, gardeners, volunteers from food banks and soup kitchens, and individuals passionate about sustainable food practices. The GCFN developed a search tool (<https://glasgowfood.net/>) which enables users to explore various community food initiatives, including citizen farms, kitchens, grocery deliveries, food banks, and free meal sites. It serves as a comprehensive guide to the diverse array of resources available within the network, empowering individuals to access sustainable and nourishing food options.

⁸ Glasgow City Food Plan 2021-2031,4.



Source: GCFN⁹

A similar search tool is the Glasgow Sustainable Food Directory — Slow Food Glasgow¹⁰, developed jointly by Slow Food Glasgow and GFPP, which allows users to search for grocery stores, restaurants, and cafes that offer sustainable food.

Achievements and Challenges

According to the analysis conducted by the City of Glasgow, the initiative has encountered significant challenges due to external factors such as the war in Ukraine, which has disrupted international food supply chains and escalated energy costs. Additionally, the impact of Brexit and the ongoing COVID-19 pandemic has led to labor shortages and a continuous rise in food and energy prices. Despite these challenges, the city remains committed to the implementation of the Food Plan and has made notable progress. The collaborative approach adopted to develop and execute the Food Plan was well received, as it contributed to a better understanding of the necessity for transforming the food system. The coordination and management of the plan's implementation were reported to be effective.

IV. Summary

The following provides key highlights of integrated solutions for climate and biodiversity.

1) The Challenges and Opportunities of Nature-based Solutions (NbS)

In the context of addressing climate and biodiversity comprehensively, nature-based solutions (NbS) have gained significant attention in international discussions including IPBES-IPCC Joint Workshop, COP27, and COP15, as a promising approach with multiple co-benefits. However, discussions at the COP27 side event also highlighted concerns regarding the potential misinterpretation of NbS and the presence of trade-offs. It was emphasized that while NbS can provide adaptations to various issues, it does not address the root causes of biodiversity loss and climate change, nor does it serve as a

⁹ "Find Local Food Services." Glasgow Community Food Network, June 5, 2023. <https://glasgowfood.net/find-local-food-services>.

¹⁰ Glasgow Sustainable Food Directory (Slow Food Glasgow), accessed March 13, 2023, <https://slowfoodglasgow.co.uk/Glasgow-Sustainable-Food-Directory>

standalone solution for greenhouse gas emissions reduction. Ensuring a human rights-based approach and promoting local participation in decision-making processes were emphasized as crucial considerations. Moreover, the labor-intensive nature of NbS poses a challenge for countries experiencing declining populations, necessitating the exploration of solutions that combine digital technology and employment policies. Given the long-term perspective required for evaluating NbS, the alignment with relevant policies and businesses must also be taken into account to ensure consistency and effectiveness.

2) The Food System Transformation as an Integrated Solution

During COP27, the establishment of various pavilions focused on food systems highlighted the critical importance of transforming food systems within the context of both biodiversity and climate. At the same time, it is crucial to ensure equitable transitions to minimize any adverse impacts on affected individuals. The cases of Paris and Glasgow demonstrate how these approaches can comprehensively provide solutions to food, social, and economic issues, contributing to the achievement of the Sustainable Development Goals (SDGs). While these initiatives present significant challenges, they are feasible at the municipal level in the short term and have the potential to generate substantial impact.

3) Citizen Engagement and Partnerships

In the cases of Paris and Glasgow, inclusive discussions involving all stakeholders in the food system led to the development of comprehensive action plans that reflect diverse citizen voices. Engaging all stakeholders in a consultation process not only generates synergies across sectors but also facilitates the creation and implementation of plans that minimize or mitigate trade-offs. Interestingly, both cities established partnerships among government, the private sector, and citizens, forming cooperatives or social enterprises that played vital roles in implementing sustainable food plans. This exemplifies the potential strength of partnerships in creating more sustainable communities through integrated solutions.