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Options for multilateral initiatives to close the global 2030 climate ambition and action gap - Policy field Sustainable Food Systems

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Options for multilateral initiatives to close the global 2030 climate ambition and action gap - Policy field Sustainable Food Systems

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This policy paper is part of the research project “Accelerating global climate action before 2030” (FKZ 3719 41 109 0) that investigates intergovernmental cooperation initiatives by G20 countries and their possible contribution to accelerate climate action before 2030. The project focuses on four policy areas: energy transition, synthetic e-fuels, sustainable food systems and forest protection; this paper looks at sustainable food systems. The project is financed by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, supervised by the German Environment Agency and carried out by the Ecologic Institute, Oeko-Institut and Climate Analytics. The policy papers are scientific in nature, and all reflections and suggestions are derived by the authors’ experiences and from careful analysis. They aim to identify options to accelerate climate action in order to meet the globally agreed goal of staying within a temperature increase of well below 2°C above preindustrial levels and pursuing efforts to limit it to 1.5°C, without intending to prescribe specific policies.

Abstract: Options for international cooperation to close the 2030 climate ambition gap – Sustainable Food Systems

To increase climate policy ambitions and achieve carbon neutrality, countries need to take much more ambitious action already in the coming decade. One of the key areas of action is the transformation of our food systems towards sustainability. In this regard, two aspects stand out as having a large climate mitigation potential: (1) Reducing food losses and food waste and (2) diet shifts towards diets that are rich in plant proteins and low in animal products. Both areas also offer the potential to unfold many other positive sustainability impacts, including health and resource efficiency. This paper discusses options for how a shift towards sustainable food systems, including food waste reduction and a dietary shift, can be enhanced through multilateral cooperation in different political processes (UN Food System Summit, G20/G7, UNFCCC COP26 and others). An overview of existing partnerships, alliances and networks at the international level illustrates existing international activities on which such efforts can build. The challenge is that food policy is a relatively young policy area which so far lacks an integrated and cross-sectoral approach while at the same time, actions to reduce food waste and accelerate diet change depend on a transformative change towards sustainable food systems more broadly. Therefore, the identified four options for increased multilateral cooperation take a broad ‘food systems approach’ including further activities which go beyond food waste and loss and diet shift. The four options are 1) the setup of an international institution that assists in building appropriate national frameworks with a food system approach (here called “Biting back better”), 2) an initiative to strengthen a food system approach in international climate policy (called “ClimEat-Change”), 3) a multilateral collaboration and exchange mechanism on how to implement and locally adapt the Planetary Health Diet requirements into National Dietary Guidelines (called “Nutrition Guidelines for Future”) as well as 4) an initiative to set up an international food loss and waste accreditation scheme that helps to measure and manage food loss and waste all along the value chain (called “Ensure 12.3”).

Kurzbeschreibung: Optionen für internationale Kooperation um die Ambitionsücke 2030 zu schließen – Nachhaltige Ernährungssysteme

Um die Wende zu einer klimaneutralen Wirtschaftsweise einzuleiten, bedarf es in der Klimapolitik einer deutlichen Ambitionssteigerung in den 2020er Jahren. Einer der wichtigsten Aktionsbereiche ist die Umgestaltung der Ernährungssysteme in Richtung Nachhaltigkeit. In dieser Hinsicht zeichnen sich zwei Handlungsfelder durch ein besonders großes Klimaschutzpotenzial aus: (1) die Verringerung von Nahrungsmittelverlusten und Nahrungsmittelabfällen und (2) die Umstellung der Ernährung auf eine Ernährung, die reich an pflanzlichen Proteinen und arm an tierischen Produkten ist. Beide Bereiche bieten auch das Potenzial für viele andere positive Nachhaltigkeitsauswirkungen, einschließlich Gesundheit und Ressourceneffizienz. In diesem Politikpapier werden Optionen erörtert, wie eine Entwicklung hin zu nachhaltigen Ernährungssystemen, die auch die Reduzierung von Lebensmittelabfällen und einer stärker pflanzenbasierten Ernährung in den Blick nimmt, durch multilaterale Zusammenarbeit gefördert werden kann. Es werden mögliche konkrete Interventionen und Aktivitäten sowie politische Prozesse aufgezeigt, die zur Entwicklung und Umsetzung von Aktivitäten genutzt werden können (UN Food System Summit, G20/G7, UNFCCC COP26 und andere). Ein Überblick über bestehende Partnerschaften, Allianzen und Netzwerke auf internationaler Ebene zeigt, auf welchen bestehenden internationalen Aktivitäten, Allianzen und Prozesse dabei bereits aufgebaut werden kann. Die Ernährungspolitik ist noch ein relativ junger Politikbereich, der bisher noch nicht integriert und sektorübergreifend entwickelt wurde, und erfolgreiche Maßnahmen zur Verringerung von Lebensmittelabfällen und zur Beschleunigung der Ernährungsumstellung hängen von einem transformativen Wandel hin zu insgesamt

nachhaltigen Ernährungssystemen ab. Aus diesem Grund, umfassen die identifizierten vier Optionen für verstärkte multilaterale Kooperation daher auch Ansätze zur Transformation des Ernährungssystems. Die vier Optionen sind 1) die Einrichtung einer internationalen Institution, die beim Aufbau geeigneter nationaler politischer Strategien mit einem Ernährungssystemansatz hilft (hier "Biting back better" genannt), 2) eine Initiative zur Stärkung eines Ernährungssystemansatzes in der internationalen Klimapolitik (genannt "ClimEat-Change"), 3) ein multilateraler Kooperations- und Austauschmechanismus zur Umsetzung und lokalen Anpassung der Anforderungen der Planetary Health Diet in Nationale Ernährungsrichtlinien (genannt "Nutrition Guidelines for Future") sowie 4) eine Initiative zur Einrichtung eines internationalen Akkreditierungssystems für Lebensmittelverluste und -verschwendung, das hilft, Lebensmittelabfälle entlang der gesamten Wertschöpfungskette zu messen und zu managen (genannt "Ensure 12. 3").

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List of abbreviations

AGRA	Alliance for a Green Revolution in Africa
BMU	Federal German Ministry for the Environment, Nature Conservation and Nuclear Safety
BMZ	German Federal Ministry for Economic Cooperation and Development
CBD	Convention on Biological Diversity
CFS	Committee on World Food Security
COP	Conference of the Parties (to the UNFCCC)
CSM	Civil Society and Indigenous Peoples` Mechanism (CSM) for relations with the CFS
EU	European Union
FABLE	The Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium
FAO	Food and Agriculture Organization of the United Nations
FBDG	Food-based Dietary Guidelines
FLW	Food Loss and Waste
10YFP	10-Year Framework for Programmes on Sustainable Consumption
FOLU	Food and Land Use Coalition
GAIN	Global Alliance for Improved Nutrition
G20	Group of Twenty, International Forum for the governments from 19 countries and the EU
G7 / G8	Group of Seven, International Forum comprising Canada, France, Germany, Italy, Japan, the United Kingdom and the United States,
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICLEI	Local Governments for Sustainability
IFAD	International Fund for Agricultural Development
IIASA	Institute for Applied Systems Analysis
IKI	International Climate Initiative
IPCC	Intergovernmental Panel on Climate Change
IPES Food	The International Panel of Experts on Sustainable Food Systems
KJWA	Koronivia Joint Work on agriculture
MACS	Meeting of Agricultural Chief Scientists of G20
MUFFP	Milan Urban Food Policy Pact
NDG	National Dietary Guidelines
OECD	Organisation for Economic Cooperation and Development
PA	Paris Agreement
PHD	Planetary Health Diet
PIK	Potsdam Institute for Climate Impact Research
SDSN	Sustainable Development Solutions Network
SDG	Sustainable Development Goal
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

UNFCCC	United Nations Framework Convention on Climate Change
UNSCN	UN System Standing Committee on Nutrition
VGFSyN	Voluntary Guidelines on Food Systems and Nutrition
VGGT	Voluntary Guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum
WRI	World Resource Institute

Summary

To achieve the shift towards carbon neutrality, countries need to take much more ambitious climate action already in this coming decade. One of the key areas of action is the transformation of our food systems towards sustainability. Within the transformation towards sustainable food systems two aspects stand out as having a **large climate mitigation** potential: (1) **Reducing food losses and food waste** and (2) a **dietary shift** towards diets that are rich in plant proteins and low in animal products.

Both areas also offer the potential to unfold many other positive sustainability impacts, including health and resource efficiency. This paper discusses **options for how a transformation towards sustainable food systems**, including food waste reduction and a dietary shift **can be enhanced through multilateral cooperation**, e.g. with regard to the UN Food System Summit in 2021, G7/G20, the UN Climate Change Conference/COP26, etc.

To do so, this paper provides an **overview of the most relevant international initiatives** (partnerships, platforms, alliances and networks including public institutions) working on food loss and waste (FLW) reduction as well as dietary shift. This also covers initiatives, which are working on food system transformation in an integrating manner, thereby going beyond a narrow focus on FLW and diet change.

The review of existing initiatives shows that there are **still relatively few initiatives** that deal with diet change and food waste reduction. Compared with other policy fields (such as energy), these initiatives are also still **rather young**. While policies that aim to reduce **food loss and waste have a higher political acceptance** and have led to a number of policy interventions since 2011, the need to reduce protein overconsumption by **reducing consumption of animal-based foods is not yet on the policy agenda** of most countries and remains a more or less neglected policy area.

While **attention** for the opportunities for food system change has grown in recent years, **food system thinking is not yet mainstreamed in sectoral policies**. Also, climate policies and initiatives are not (yet) a driver of food system transformation.

A prominent example that shows that food system thinking starts to climb up the multilateral policy agenda is the **EU Farm to Fork Strategy**, launched in May 2020 by the European Commission. It is the first time that an EU strategy attempts to define long-term objectives for a healthy, just and sustainable EU food system that also addresses food waste reduction and the need to change towards sustainable diets.

Overall though, there are **still few national governments involved** in pushing for stronger multilateral collaboration to transform food systems, reduce food loss and waste and a dietary shift. **Integrated policies** at both national as well as international level for sustainable food systems **are scarce**.

The analysis of the status quo and its gaps shows that both **FLW reduction as well as a dietary shift depend on an overall change in food policies** which provide incentives for sustainable food production and consumption and phases out environmental harmful subsidies. Such a food system approach needs to be **mainstreamed in all sectoral policy areas**, most importantly within **climate, agriculture and health policies**.

In parallel, **it takes pioneers** in national and subnational governments that set up strategies or political frameworks for food system change, including FLW reduction and dietary shift.

Furthermore, **multilateral collaboration/international support mechanisms are needed** to facilitate exchange, set standards and provide advice for the complex tasks of food system

transformation. In response to the gaps and needs for action identified, this policy paper **suggests four options for increased multilateral collaboration** - some of them building on existing processes and institutions, while other proposals suggest to set up new structures. Each proposal comes with a suggestion for a name that intends to catch a key aspect of the activities proposed. The four options, addressing food waste reduction, dietary shift and food system thinking within multilateral collaboration are:

1. **“Biting back better”**: The setting up of a new international institution including a secretariat that assists in building appropriate national frameworks/ national strategies with a food system approach. It would organize exchange among countries and is assisted by a scientific advisory body akin to the Intergovernmental Panel on Climate Change (IPCC).
2. **“ClimEat-Change”**: An initiative to strengthen a food system approach in international climate policy and to make international climate policy a driver for food system transformation. To do this it works through existing processes of the UNFCCC, such as the nationally determined contributions (NDC) of countries, the NDC Partnership, the Koronivia Joint Work on agriculture (KJWA) and could use the COP26 in Glasgow and the “Glasgow Food and Climate Declaration” that was launched in 2020.
3. **“Nutrition Guidelines for Future”**: A multilateral collaboration and exchange mechanism on how to implement and locally adapt the Planetary Health Diet requirements into National Dietary Guidelines (NDG).
4. **“Ensure 12.3”**: An initiative to set up an international food loss and waste accreditation scheme that helps to measure and manage FLW all along the value chain and allows policy makers to make better-informed decisions.

The table on the following page provides a preliminary evaluation of the four options.

While the proposed options provide ideas for enhanced **multilateral collaboration** for food system transformation, with a particular focus on FLW reduction and dietary shift, it is very important that **ambitious policy changes towards sustainable food systems also take place at the national level**, with locally adapted solutions for FLW reduction and dietary shift. This policy paper, therefore, provides an overview of the **range of different interventions** policy makers can choose from to further accelerate action. For example, possible instruments to support the dietary shift can range from public procurement rules to support of legumes in crop diversification, from regulation of stocking rates to behaviour change interventions for consumers. Examples to reduce FLW range from better food waste monitoring to public-private partnerships and from action against unfair trading practices to date labelling requirements.

Summary evaluation of potential initiatives in the field of sustainable food systems

Criteria/ initiatives	1 Biting back better National strategies with a food system approach & International support mechanism	2 ClimEat-Change A food system approach in international climate policy	3 Nutrition Guidelines for Future Reducing overconsumption of animal products, & increasing plant-rich diets through locally adapted dietary guidelines	4 Ensure 12.3 International food loss and waste accreditation scheme
Chances for success	Medium to high	Medium to high	Medium to low	High
Efficiency and Costs	High	High	Medium	High
Transparency, international structures	Medium to high	High	Medium	High
Sustainability, environmental integrity	High	High	Medium	Medium
Priority	High	High	Medium	Medium to high

Source: own compilation.

While the specific selection of instruments and tools will in most cases depend on the regional context and political opportunities, the integration of FLW reduction and dietary shift can and should also be advanced at the **international level** and needs to be mainstreamed and integrated in all relevant policies and processes. With the **multitude of relevant opportunities ahead in 2021** (UN Food System summit, UN summits/COPs on climate and biodiversity etc.), this year will play a crucial role to move the work on sustainable food systems up on the political agenda. Also, EU internal multilateral collaboration for a coherent implementation of the EU Farm to Fork Strategy, including a regulatory framework to be set by 2023 can play a big role in further improving climate-friendly food system policies on a global level.

1 Introduction

1.1 Relevance of the policy field

Climate discussions and actions often center on reducing energy use in general and fossil fuels in particular as well as the need to transform the transport and industry sectors. However, according to the IPCC special report on land (IPCC 2019b), almost a quarter of global greenhouse gas (GHG) emissions are related to food production and consumption (14.7 +/- 4 Gt CO₂eq).

A recent article in Science (Clark et al. 2020) showed that even if fossil fuel emissions were immediately halted, current trends in global food systems would prevent the achievement of the 1.5°C target and, by the end of the century, threaten the 2°C target. Solutions in this sector can be achieved through better agricultural production practices, ecosystem protection, boosting crop yields, reducing food loss & waste and shifting towards plant-rich diets on the consumption side (Fuentes Hutfilter et al. 2020). Clark et al. 2020 have calculated GHG emission changes for different food system interventions as illustrated below (Figure 1). They show that diet change and food waste reduction are two particularly strong interventions, particularly if combined. It also shows that increasing yields and efficiency in food production are also areas with large potential impact. These are however not in the direct focus of this paper.

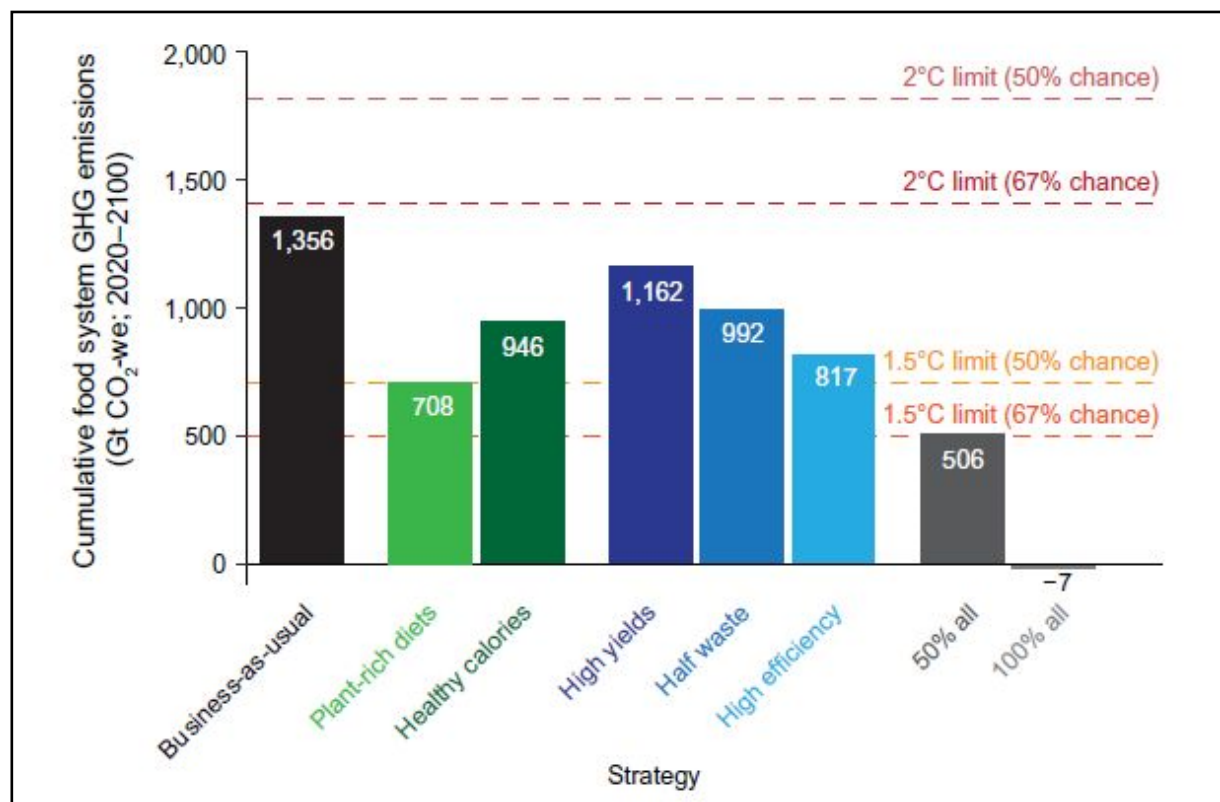


Figure 1: Projected cumulative 2020 to 2100 GHG emissions in CO₂ warming-equivalents solely from the global food system for business-as-usual emissions and for various food system changes that lead to emission reductions (Source: Clark et al. 2020)

This paper will particularly focus on the two areas “reducing food loss & waste” and “shifting diets”, although with a perspective of broader food system change (see boxes below for a brief explanation of what is covered by these terms).

Box 1: Definition of key terms:

Food Loss and Food Waste (FLW)

Food loss is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retail, food service providers and consumers. Food waste is the decrease in the quantity or quality of food resulting from decisions and actions by retailers, food services and consumers (FAO 2019).

Dietary shift

In the context of this paper “dietary shift” relates to the (approx. 100%) global increase in the consumption of healthy foods, such as nuts, fruits, vegetables, and legumes as described in the “Planetary Health Diet” (Willett et al. 2019) and to reducing protein overconsumption by reducing consumption of animal-based foods (WRI 2016), which translates globally to an (approx. 50%) reduction of red meat consumption (Willett et al. 2019). A “dietary shift” in this context is different to “diet change” – as the latter is used in a broader way of changing diets (most often towards healthier diets including less fat, less sugar, less processed food, partly also fewer animal products), though both concepts have much in common.

Food System

A food system refers to all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food along with the outputs of these activities, including socio-economic and environmental outcomes (HLPE 2014).

Both food waste reduction as well as shifting diets have a large **GHG emission mitigation potential: dietary changes** can reduce emissions from agriculture and land use change by about 47% compared to a business as usual scenario (Clark et al. 2020). This is because animal products generally generate substantially higher emissions per unit¹ of nutrition produced than plant-based foods (Springmann et al. 2016). Also, a recent study published by the FAO confirms the high mitigation potential of changing animal protein-rich diets to plant-rich diets, estimating mitigation potentials between 41-74% (FAO et al. 2020).

Figure 2 illustrates the mitigation potentials until 2050 related to different diets based on studies assessing different scenarios. Ranges of the mitigation potential vary considerably between the studies due to different assumptions.

¹ Ruminant livestock such as cattle, sheep, goats generates a particularly big proportion of GHG Emissions through enteric fermentation – a digestive process that produces methane which is emitted via belching. Methane, also produced by manure storage affects global warming 28 times higher than carbon dioxide.

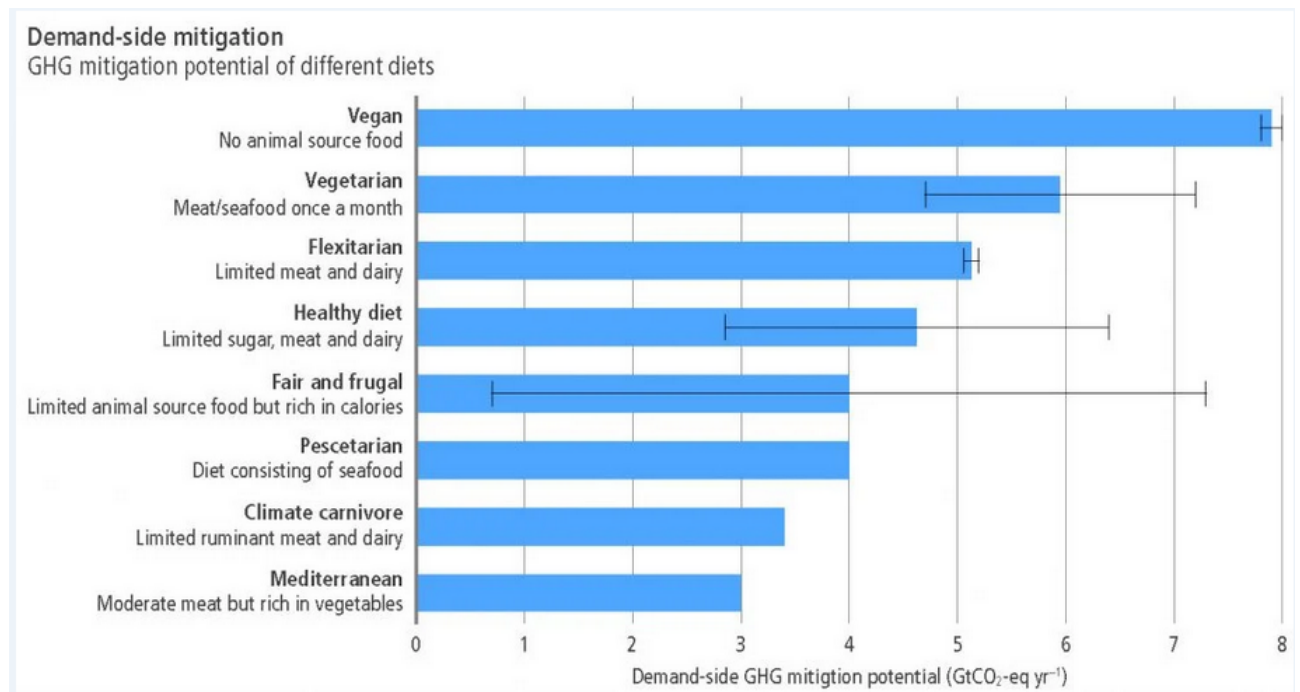


Figure 2: GHG mitigation potential of different diets

Note: Error bars present the ranges between the different studies. No error bar indicates information refers to one study.

Source: (IPCC 2019a, chapter 5.5.2.1)

Similarly, reduction of food loss and waste also offers a large GHG mitigation potential, as a quarter of the total food related emissions come from food that is lost in supply chains or wasted by consumers (24% according to Poore and Nemecek 2018, 27% according to Clark et al. 2020).

Reducing waste also **avoids the deforestation for additional farmland**, preventing 74.9-76.3 gigatons of additional emissions (Project Drawdown 2020). Similarly, reducing the global consumption of animal products would release land to support natural climate solutions, such as restoration of forests, peatland and semi-natural permanent grassland (Ripple et al. 2020).

But there are even **more reasons for both reducing food waste as well as changing diets**:

Food systems need to change as **unhealthy diets** have become a leading cause of mortality, leading to more deaths globally than drugs, alcohol and tobacco use combined (GLOPAN 2016), with nearly 700 million people that are undernourished (FAO et al. 2020) and more than 2 billion people that are overweight (GBD 2015 Obesity Collaborators et al. 2017).

According to FAO, IFAD, UNICEF WFP and WHO **diet-related health costs** linked to mortality and diet-related non-communicable diseases are projected to exceed USD 1.3 trillion per year by 2030, if current food consumption patterns continue². The four alternative healthy diets referred to by FAO et al. 2020, which include less meat and dairy, would reduce diet-related health costs by up to 95% by 2030 (FAO et al. 2020).

In terms of **food security**, it is important to note that due to the inefficiency of converting plant calories into animal products, livestock feed consumes a large fraction of the total harvest (46%) but it adds less than 7% to food calories available worldwide. This in turn implies that 44% of today's global agricultural production would be enough to feed most humans (ATKearney 2019). Shifting diets is therefore a strong tool to ensure food security for a growing global population.

² This is considered a conservative estimate (i.e. 'underestimation') since, due to data limitations, not all negative environmental and health impacts were taken into account.

In sum, the adoption of healthy diets that include sustainability considerations can therefore generate important synergies with a variety of SDGs.

1.2 Background and development regarding multilateral cooperation

Since the end of World War II, agriculture and food production systems have seen a rapid change worldwide. Food productivity has increased due to new technologies, increased chemical use/synthetic inputs, specialization, and public policies that favored maximizing production and reducing food prices. While this has led to large yield increases, these developments come with severe negative effects, such as significant environmental degradation (greenhouse gas emissions, biodiversity loss, topsoil depletion, groundwater contamination, air pollution), a decline of family farms, the disintegration of rural communities, new threats to human health and safety due to the spread of new pathogens, and economic concentration in food and agricultural industries (UNEP/IRP 2016; GLOPAN 2016; Willett et al. 2019). Also, although global food production of calories has kept pace with population growth, nearly 700 million people are undernourished (FAO et al. 2020) and many more people consume low-quality diets that cause micronutrient deficiencies and contribute to diet-related obesity and diet-related non-communicable diseases (Willett et al. 2019).

This shows that food policies with a food system approach are needed, integrating perspectives from all relevant policy fields (increasing synergies and reducing trade-offs), considering linkages between production and consumption as well as interconnections along the value chain (production, processing, transport/logistic, retail/marketing, consumption, including reuse of resources).

However, at present food policies dominate which follow a sectoral and siloed approach between health, agriculture, environment and climate protection, trade, development, education and rural development – to mention a few of the policy areas concerned. In the past five to ten years though, this has started to change.

Building on growing scientific evidence, more actors globally have become involved in ‘food system thinking’ in their activities, ranging from international organisations to civil society and from private sector actors to cities and municipalities.

Some of the milestones in this development – which also show how young this policy area still is – include:

- ▶ **FAO publication in 2006: “Livestock’s Long Shadow”** highlighted that the livestock sector is one of the most significant contributors to serious environmental problems (FAO 2006).
- ▶ In **2011**, FAO presented the **first estimate on food loss and waste**, stating that around 1/3 of the world’s food was lost or wasted every year – kickstarting a public and policy debate about how this can be reduced (FAO 2011).
- ▶ In **2014**, the “International Panel of Experts on Sustainable Food Systems (**IPES-Food**)” was founded in order to fill a gap in global debates on food and farming systems.
- ▶ Also in **2014**, with the inaugural “EAT Stockholm Food Forum”, the “**EAT Initiative**” was founded by the Stordalen Foundation together with Professor Johan Rockström and the Stockholm Resilience Center (SRC).
- ▶ In **2015**, within the UN Agenda 2030, a goal for reducing food loss and waste was set (**SDG Target 12.3** calls for halving per capita global food waste at the retail and consumer levels and reducing food loss along production and supply chains (including post-harvest losses)

by 2030. In SDG 2, the international community committed itself to the goal of taking effective action against hunger and any form of malnutrition).

- ▶ In **2015**, the **G20 Ministers** of Agriculture (in Izmir/Turkey) declared their willingness to take action against food waste.
- ▶ In **2016**, the “**Champions 12.3 initiative**” was founded. It is a coalition of executives from governments, businesses, international organizations, research institutions, farmer groups, and civil society that strive to accelerate progress toward achieving SDG Target 12.3 by 2030.
- ▶ In **2016**, the **EU Platform on Food Losses and Food Waste** was established, bringing together EU institutions, experts from the EU countries and relevant stakeholders from the private sector, research and civil society.
- ▶ In **2019**, the “**EAT Lancet Commission**” issued its recommendations on healthy diets from sustainable food systems. The “**Planetary Health Diet**” showed for the first time what a diet could look like that is able to feed a future population of 10 billion within planetary boundaries (Willett et al. 2019).
- ▶ In May **2020** the European Commission published the Communication 'A **Farm to Fork Strategy** – For a fair, healthy and environmentally-friendly food system' (European Commission (EC) 2020). It is the first time that an EU strategy attempts to define long-term objectives for a healthy, just and sustainable EU food system that also addresses food waste reduction and the need to change towards sustainable diets. However, it is only a strategy document and it remains to be seen if the objectives are implemented in a coherent way into sectoral policies (like the Common Agricultural Policy) and a regulatory framework, which will be developed until 2023.

Moreover, a number of multilateral initiatives have been established in parallel that support different aspects of food system change towards sustainability. These are presented in chapter 2.

1.3 Methodology and structure of this paper

This paper presents and discusses specific options for how a shift towards sustainable food systems, including food waste reduction and a dietary shift, can be enhanced through multilateral cooperation.

To do so, this paper provides an overview of the most relevant international initiatives (partnerships, platforms, alliances and networks) working on food loss and waste reduction as well as diet change together with public authorities. This also covers initiatives that are working on the shift to sustainable food policies in an integrated manner, thereby going beyond a narrow focus on food loss and waste and diet change (chapter 2.1). Based on the analysis of the existing landscape, gaps and potential areas for improvement are identified (chapter 2.2).

Chapter 3 presents four options for increased multilateral cooperation based on the analysis of the status quo and remaining gaps. The selection includes a diversity of potential activities - some of them building on existing processes and institutions, while other proposals suggest to set up new structures. Chapter 4 of this policy paper draws conclusions and provides an evaluation of the four options according to the following criteria: 1) chances of success, 2) efficiency, 3) costs, 4) transparency and compatibility with institutional structures, 5) sustainability and environmental integrity.

The work was informed and influenced by an extensive literature review and 15 interviews that have been conducted with German and international experts in this field (see Annex 1).

This analysis is one of four policy papers that deal with distinct policy areas and their possible contribution to accelerating climate action before 2030: energy transition, synthetic e-fuels, sustainable food systems and forest protection. The common methodology applied for the selection and review of initiatives and analysis of options is described by (Böttcher and Cames 2021).

2 Overview of existing multilateral initiatives for sustainable food systems, food waste reduction and dietary shift

As mentioned in chapter 1.2, food policy with an integrated approach towards sustainability is still a comparatively young policy area. However, there are many partnerships, platforms, alliances and networks, which have been established in the past five to ten years to promote sustainable food systems, food waste reduction and/or diet change.

This chapter gives an overview of these initiatives, as a basis for identifying improvements and additional options. Some of the existing initiatives are collaborations between governments, others are public-private partnerships. They all have in common that they collaborate at international level and already (partly) involve public authorities. There are also other relevant networks that do not include government executives but still play a crucial role. These are listed as part of chapter 2.2.

The overview is based on a screening of internet sources and expert interviews. While this list is not exhaustive, it still provides a sufficiently comprehensive overview of progressive partnerships, platforms, alliances and networks that have moved the public discussion of food systems, food waste reduction and diet change in the past years.

Each partnership is described with its core activities (including priority work area: food waste reduction, diet change and/or sustainable food systems), a list of main members and target groups (i.e. whether the initiative is primarily government driven or includes a broader range of stakeholders) and information on since when the initiative has been active.

A summary is presented in the table below.

Table 1: Overview of initiatives for sustainable food systems, food waste reduction and dietary shift

Name of the initiative	Active since	Main focus	Partners/Membership
Global Initiative on Food Loss and Waste Reduction – SAVE FOOD	2011	Aims to drive innovations, promote interdisciplinary dialogue to generate solutions to reduce food loss and waste. Focus on awareness raising, technical support to develop national post-harvest policies and subsector strategies, Collaboration and coordination of world-wide initiatives on food loss and waste reduction, policy, strategy and programme development for food loss and waste reduction. Developed a “Technical Platform on the Measurement and Reduction of Food Loss and Waste”. Co-developed education package “Do good – Save Food”. And Think.Eat.Save campaign focusing on food waste from consumers, retailers and the hospitality industry.	Lead partners FAO and Messe Düsseldorf, 700 partners from farmers, industry, policy makers, civil society, bi- and multilateral agencies, financial institutions and the private sector
Sustainable Food Systems (SFS) Programme	2015	Global multi-stakeholder initiative to accelerate the shift towards more sustainable food systems. Among its focus themes are the promotion of sustainable diets; the reduction of food losses and waste; and strengthening resilient and diverse food production systems, promotes activities in the areas of awareness raising, capacity development as well as facilitating access to knowledge, information and tools	Lead organizations are Switzerland, South Africa, WWF and Hivos. It has a 23-member international multi-stakeholder steering committee and more than 80 implementing partners
CFS and the “Voluntary Guidelines on Food Systems and Nutrition” (VGFSyN)	Feb 2021	Aims to counter the existing policy fragmentation between the food, agriculture and health sectors while also addressing livelihood and sustainability challenges and to contribute to making food systems nutrition-sensitive and promoting secure access to safe, diverse and high-quality diets for everyone	intergovernmental committee, hosted by FAO
MACS-G20 Collaboration Initiative on Food Losses and Waste	2015	Core activities to reduce food loss and waste within G20 countries are: (i) sharing information and experience, (ii) awareness raising and capacity building, (iii) stimulating research cooperation, (iv) matching ideas and funding and (v) cooperation at implementation. Implementation e.g. through annual workshops and Global Research Network on Reduction of Food Losses & Food Waste” web portal.	Collaboration started at the Meeting of Agricultural Chief Scientists of G20 in 2015. Germany coordinates efforts among G20 countries and beyond since then
Champions 12.3	2015	Champions 12.3 aims to reduce food waste/achieve SDG 12.3. Actions include publications (e.g. Target 12.3 progress reports), organization of events for shared learning, sharing of success stories of effective food loss and waste reduction through media, webinars etc., identification of political barriers and ways to overcome them	Coalition of executives from governments, businesses/CEOs, international organizations, research institutions, farmer groups and civil society

Name of the initiative	Active since	Main focus	Partners/Membership
EAT	2014	EAT aims to catalyze food system transformation, shift to healthy, tasty and sustainable diets in the five core priority areas as well as food waste reduction, different activities/initiative involvement; EAT Lancet Commission, Planetary Health Diet, Food System Dialogues etc.	Broad engagement with partners across business, policy, civil society and science
Food and Land-Use Coalition (FOLU)	2017	FOLU is committed to transforming the way food is produced and consumed and land is used for people, nature and climate, activities e.g. through Food System Dialogues, FABLE is part of FOLU	Community of 30 organisations (e.g. Alliance for a Green Revolution in Africa (AGRA), EAT, GAIN, SDSN)
Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium	2018	The FABLE Consortium develops national pathways and policies to achieve mid-century climate, biodiversity and sustainability objectives at the national level	Teams in 20 countries, Secretariat led by IIASA and SDSN, supported by EAT, PIK and financial support among others by BMZ and GIZ
Milan Urban Food Policy Pact (MUFPP)	2015	Cities commit themselves to contribute to a better functioning food system and integrated food policies	Signature and local implementation by more than 200 city governments worldwide, representing over 450 million inhabitants, Secretariat: City of Milan

Source: own compilation.

2.1 Overview of key initiatives for sustainable food systems, food waste reduction and dietary shift

Global Initiative on Food Loss and Waste Reduction – SAVE FOOD

Founded in 2011 by the lead partners FAO and Messe Düsseldorf, the “Global Initiative on Food Loss and Waste Reduction – SAVE FOOD”³ has gathered more than 700 partners, including farmers, industry, policy makers, civil society, bi- and multilateral agencies, financial institutions and the private sector. It aims to drive innovations, promote interdisciplinary dialogue and spark debates to generate solutions across the entire value chain, “from field to fork” to reduce food loss and waste.

The initiative has four pillars for its objectives and activities:

- ▶ Awareness raising concerning the impact of, and solutions for food loss and waste.
- ▶ Providing technical support to develop national post-harvest policies and subsector strategies.
- ▶ Collaboration and coordination of world-wide initiatives on food loss and waste reduction.
- ▶ Policy, strategy and programme development for food loss and waste reduction. This includes a series of field studies on a national-regional basis.⁴
- ▶ Support of investment programmes and projects, implemented by private and public sectors.

The initiative developed a “**Technical Platform on the Measurement and Reduction of Food Loss and Waste**”⁵ and a large online collection of data on both food loss and food waste and their causes reported throughout the literature in the “Food Loss and Waste database”.

It also includes an education package “**Do Good – Save Food**” co-developed with the International Food Waste Coalition, that consists of different modules that can be used by teachers in class and to plan lessons and activities on the issue⁶.

Think.Eat.Save of the Save Food Initiative is a campaign focusing on food waste from consumers, retailers and the hospitality industry, and creating collaboration between organizations with experience in changing wasteful practices. It is a partnership between UNEP and FAO also contributing to the **Sustainable Food Systems Programme** of the 10 Year Framework of Programmes on Sustainable Consumption and Production (10YFP).

Sustainable Food Systems (SFS) Programme

The Sustainable Food Systems (SFS) programme of the *UN 10-Year Framework for Programmes on Sustainable Consumption and Production Patterns* (10YFP) was launched during the Milan Expo **2015**. It is a global multi-stakeholder initiative to accelerate the shift towards more

³ See the overview of the initiative according to FAO at <http://www.fao.org/save-food/en/> (last accessed 18/12/2020) and at UNEPs “Climate Initiative Platform”:

http://climateinitiativesplatform.org/index.php/Save_Food_initiative (last accessed 18/12/2020)

⁴ So far undertaken for the small-scale agriculture and fisheries subsectors and for causes and solutions for banana, maize, milk and fish in Kenya, see <http://www.fao.org/save-food/resources/publications/casestudies/en>

⁵ <http://www.fao.org/platform-food-loss-waste/en> (last accessed 18/12/2020)

⁶ see <http://www.fao.org/save-food/projects/educationalmaterial-fwr/en/> (last accessed 18/12/2020)

sustainable food systems. Among its focus themes are the promotion of sustainable diets, the reduction of food losses and waste and the strengthening of resilient and diverse food production systems. In this context, the SFS programme⁷ promotes activities in the areas of awareness raising, capacity development as well as facilitating access to knowledge, information and tools.

The work areas of the SFS Programme are:

- ▶ **Raising awareness** about the need to adopt sustainable consumption and production (SCP) patterns in food systems;
- ▶ Building **enabling environments** for sustainable food systems;
- ▶ Increasing the access to and fostering the application of **actionable knowledge, information and tools** to mainstream SCP in food systems;
- ▶ **Strengthening collaboration** among food system stakeholders.

Lead countries/organizations are Switzerland, South Africa, WWF and Hivos. It has a 23-members, an international multi-stakeholder steering committee and more than 80 implementing partners. The Programme members develop and implement projects and joint initiatives within the above work areas and focus themes at global, regional, national and local level.

CFS and the “Voluntary Guidelines on Food Systems and Nutrition”

The Committee on World Food Security (CFS)⁸ was established in 1974 as an intergovernmental committee, hosted by FAO, to monitor the commitments made during the first World Food Conference in 1974, and later the World Food Summit in 1996. The Committee reports to the UN General Assembly through the Economic and Social Council (ECOSOC) and to the FAO Conference.

Using a multi-stakeholder, inclusive approach, CFS develops and endorses policy recommendations and guidance on a wide range of food security and nutrition topics.

In **2017** at CFS 44, the Committee decided to embark on a multi-stakeholder policy convergence process that should develop **Voluntary Guidelines on Food Systems and Nutrition (VGFSyN)**. **The guidelines were endorsed in February 2021** during the CFS 47th Session (CFS 2021).

The VGFSyN are voluntary and non-binding. They are primarily **targeted at governmental actors** to help them develop holistic and inclusive public policies. They are also to be used in policy discussions and implementation processes by all relevant stakeholders in the food system at all levels (local to international). The VGFSyN build upon existing instruments adopted in the context of the UN system and complement related guidance contained in other CFS products⁹. They are **non-binding**. The VGFSyN are also a **contribution to the UN Food Systems Summit**.

⁷ See SFS Programme website <https://sustainabledevelopment.un.org/partnership/?p=12411> (last accessed 18/12/2020)

⁸ See <http://www.fao.org/cfs>, <http://www.csm4cfs.org/the-cfs/>, <http://www.fao.org/cfs/home/products/en> (last accessed 18/12/2020)

⁹ The CFS has already set up a range of principles and guidelines that are relevant for sustainable food systems, most notably the “CFS Voluntary Guidelines on the responsible governance of tenure of land,

The recommendations contained in the Voluntary Guidelines focus on promoting transparent and accountable governance, sustainable supply chains, equal and equitable access to healthy diets through sustainable food systems, food safety across the sustainable food systems, nutrition knowledge, education and information, gender equality and women's empowerment, and building resilience of food systems in humanitarian context.

The Voluntary Guidelines call for measures to **reduce food waste**, including awareness campaigns at national, regional and global levels, food date labelling, and monitoring of food loss and waste. Post-harvest food losses are to be addressed by training for improved management practices and the adoption of appropriate technologies. Yet, there is **no reference to the role of animal products** in diets and it does not address overconsumption of animal products in order to be in line with climate and biodiversity targets.

The guidelines are the only policy instrument negotiated at multilateral level on the issue of food systems and nutrition. **Sustainability was a key issue of the negotiations.** While many – including the EU – have pushed for the wording “and healthy and sustainable diets” as a key concept of the Voluntary Guidelines, there was opposition from USA, Canada, Argentina, Brasil, China, Indonesia and others. The agreed wording in the final version is now “healthy diets through sustainable food systems”.

MACS-G20 Collaboration Initiative on Food Losses and Waste

Since 2015, Food Loss and Waste reduction has been elevated through the G20 under all presidencies¹⁰, starting with the Meeting of Agricultural Chief Scientists (MACS) of G20¹¹ **2015** in Izmir (Turkey), where food loss and waste reduction was identified as a relevant topic for collaboration. This was the starting point of the “**MACS-G20 Collaboration Initiative on Food Losses and Waste**” (MACS-G20 FLW Initiative). Germany took leadership of the Initiative since 2015, with the Thünen Institute as the responsible coordinator.

The initiative established the “**Global Research Network on Reduction of Food Losses & Food Waste**” **web portal**¹² with information about current research activities, latest innovations and available scientific expertise. It also actively disseminates new insights and information about successful innovations.

Core activities are:

- ▶ **sharing information** and experience
- ▶ **sharing information** and experience,
- ▶ **awareness raising** and capacity building,

fisheries and forests in the context of national food security” (VGGT (2012)), the “CFS Principles for responsible investment in agriculture and food systems” (RAI (2014)), and the “CFS Policy Recommendations on Food losses and waste in the context of sustainable food systems” (2014).

¹⁰ The G20 presidencies of Turkey, China, Germany, Argentina and Saudi-Arabia have been advocates of FLW reduction.

¹¹ Formal MACS members are the ministries or governmental bodies responsible for agricultural research in the respective G20 states as well as leading research institutions which strategically advise these decision makers. Other interested countries and multi-national organizations (e.g. FAO and OECD) attend as MACS guests. MACS members are in the position to make decisions and to adopt MACS communiqués, MACS guests participate in advisory capacity. The work of MACS-G20 is based on annual meetings hosted by the G20 state which holds G20 presidency (see <https://www.macs-g20.org/about-macs/>; last accessed 18/12/2020).

¹² See <https://www.global-flw-research.org/> (last accessed 18/12/2020)

- ▶ **stimulating research cooperation,**
- ▶ **matching ideas and funding and cooperation at implementation level** (Thünen Institute 2020).

As part of the MACS-G20 annual meetings, the initiative organizes regular events discussing different approaches towards food waste reduction. Annual progress reports¹³ summarize its activities and achievements.

Champions 12.3

Champions 12.3¹⁴ is a coalition of executives from governments, businesses, international organizations, research institutions, farmer groups, and civil society dedicated to inspiring ambition, mobilizing action, and accelerating progress toward **achieving SDG Target 12.3 on food loss and waste reduction** by 2030.

Actions include publications (e.g. assessing world progress toward achieving Target 12.3 progress reports), calls (e.g. 'call to Global Action on Food Loss and Waste'), organization of events for shared learning, sharing of success stories of effective food loss and waste reduction through media, webinars, identification of political barriers and ways to overcome them.

Since **2015**, the Government of the Netherlands and the World Resources Institute (WRI) jointly provide secretariat support to Champions 12.3, organize the convenings, and coordinate preparation of background analyses and media outreach materials.

Champions include international organizations (FAO, UNEP, World Bank, IFAD, European Commission, African Union Commission), executives from governments (The Netherlands, Denmark, Vietnam, UK/London), business CEOs (e.g. Sodexo, IKEA, Nestlé, Kellogg, Rabobank, Unilever, Tesco, DSM) and business networks (e.g. Consumer Goods Forum, World Business Council for Sustainable Development, World Farmers Association, Global Alliance for Climate Smart Agriculture), research Institutions (WRI, Wageningen University, WRAP, IFPRI, China Agricultural University) and NGOs/foundations (WWF, Feedback, Rockefeller Foundation).

EAT

EAT is a global, non-profit start-up founded by the Stordalen Foundation, Stockholm Resilience Centre and the Wellcome Trust. It **aims at catalyzing food system transformation**. The framework of EAT's activities centers around **three ways of interaction: knowledge, engagement and action** (EAT 2019). Engagement takes place with partners across business, policy, civil society and science. Official partners at national government level are the governments of Finland, Norway, Sweden and Indonesia. EAT aims to generate independent, trusted knowledge to inform change-makers' decisions.

Key themes "for urgent and radical transformations until 2050" are:

- ▶ Shift the world to **healthy, tasty and sustainable diets**;
- ▶ Realign food system priorities for **people and planet**;
- ▶ Produce **more of the right food from less**;

¹³ See <https://www.macs-g20.org/about-macs/macs-activities/collaboration-initiative-on-food-losses-food-waste-launched-at-macs-g20/> (last accessed 18/12/2020)

¹⁴ See <https://champions123.org/> (last accessed 18/12/2020)

- ▶ Radically **reduce food losses and waste**;
- ▶ Safeguard our **land and oceans**.

In the past years, EAT has contributed to multilateral exchange through a number of initiatives, most importantly:

- ▶ Together with four partner organizations, EAT supported the launch of the so-called “**Food Systems Dialogues**”¹⁵ in 2018. Since then, over 40 dialogues¹⁶ have been convened in 23 countries, across 6 continents, engaging over 2500 food systems practitioners (EAT 2019). The focus of the FSDs is to connect actors and share experiences so that food system transformations and policy change occurs within defined locations (for example nations and cities). Partner organizations are the Food and Land Use Coalition (FOLU), the Global Alliance for Improved Nutrition (GAIN), the World Business Council for Sustainable Development (WBCSD), and the World Economic Forum (WEF).
- ▶ In the “**EAT Lancet Commission on Healthy Diets**”, 37 leading scientists from 16 countries asked: “What changes would be necessary to feed the projected global population of 10 billion people in 2050 healthy diets from a food system within planetary boundaries?” The result was the landmark **EAT Lancet report** which outlines what a “**Planetary Health Diet**” looks like (EAT 2019).
- ▶ In 2020, the report “**Diets for a Better Future**” was published. It investigates current food consumption patterns and the efficacy of **national dietary guidelines (NDG) in G20 countries** in comparison to the Planetary Health Diet (Loken and DeClerck 2020).

Moreover, it is involved and has co-developed a number of other initiatives:¹⁷

- ▶ “CHEW” (Children Eating Well) is an emerging collaboration between EAT and UNICEF, focusing on the linkages between food systems and **child health** and nutrition;
- ▶ “CO-CREATE” addresses **obesity among adolescents**,
- ▶ It works with **cities** across the globe to collaborate on food system transformation.

EAT puts a strong emphasis on the collaboration with policy makers. Beyond their events and publications, this is also reflected in their success indicators. For example, it is a “sign of progress”, when “(...) governments implement holistic ‘food policies’ (...) including the redirection of subsidies and incentives towards healthy and sustainable food; the introduction of True Cost Accounting and (...) a widespread introduction of national dietary guidelines that integrated health and environmental sustainability considerations” (EAT 2019).

Food and Land-Use Coalition (FOLU)

Established in **2017**, the Food and Land Use Coalition (FOLU) is a **community of 30 organizations** and individuals committed to the urgent need to transform the way food is produced and consumed and land is used for people, nature and climate.

¹⁵ See <https://foodsystmsdialogues.org/> (last accessed 18/12/2020)

¹⁶ The (<https://foodsystmsdialogues.org/>; last accessed 18/12/2020)

¹⁷ See update of initiatives on EATs website, www.eatforum.org/initiatives (last accessed 18/12/2020)

Core partners of FOLU include the Alliance for a Green Revolution in Africa (AGRA), EAT, the Global Alliance for Improved Nutrition (GAIN), the International Institute for Applied Systems Analysis (IIASA), the Sustainable Development Solutions Network (SDSN), SYSTEMIQ, the World Business Council for Sustainable Development (WBCSD), the World Farmers' Organisation (WFO) and the World Resources Institute (WRI). Funding is provided by the Gordon and Betty Moore Foundation, the MAVA Foundation, Norway's International Climate and Forest Initiative (NICFI) and the UK Department for International Development (DFID).

FOLU supports **science-based solutions** and has (co-)developed a number of initiatives. For example, **Nature4Climate** brought partners (such as international NGOs, business organizations, and international organizations like UNDP, UN-REDD, CBD) to work together to **catalyze partnerships between governments, civil society, business and investors** that use nature-based solutions to climate change. FOLU is a partner of the **Food System Dialogues**.

FABLE consortium - Food, Agriculture, Biodiversity, Land-Use, and Energy Consortium

An important part of the FOLU is the **Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium**. FABLE aims to understand how countries can transition towards sustainable land-use and food systems, while also meeting the SDGs and the objectives of the Paris Agreement. In order to do this, FABLE comprises 20 country teams, which **started in 2018** to **develop national pathways** to achieve mid-century climate, biodiversity and sustainability objectives at the national level. The Consortium provides access to **training on modeling tools**, **supports the development of decision-support tools** and provides analysis of **policy options**. The developed pathways aim to directly support efforts to **revise NDCs** and prepare long-term low greenhouse gas emissions strategies (FOLU 2020). In its Global Consultation Report "Growing Better: Ten Critical Transitions to Transform Food and Land Use" three of the 10 key critical transitions mention diets and food waste and loss: (i) healthy diets, (ii) diversifying protein supply and (iii) reducing food loss and waste as (FOLU 2019).

Countries participating in the FABLE Consortium are: Argentina, Australia, Brazil, Canada, China, Colombia, Ethiopia, Germany, Finland, India, Indonesia, Malaysia, Mexico, Norway, Russian Federation, Rwanda, South Africa, Sweden, United Kingdom and United States¹⁸. Efforts first started with Colombia, Indonesia and Ethiopia (EAT 2019).

The FABLE Secretariat, led by the International Institute for Applied Systems Analysis (IIASA) and the UN Sustainable Development Solutions Network (SDSN), with support from EAT and the Potsdam Institute for Climate Impact Research (PIK), coordinates the FABLE Consortium. It receives financial support from GIZ and BMZ¹⁹.

Milan Urban Food Policy Pact

Increased recognition of food system challenges resulted in the creation of the Milan Urban Food Policy Pact (MUFPP) in 2015. By signing MUFPP, signatory **cities commit themselves to contribute to a more sustainable food system** by adopting integrated approaches. So far, it has been signed by 210 cities from all over the world representing more than 450 million inhabitants²⁰. Actions adopted by cities are very diverse, but include to a large extent the promotion of healthy food environments and food waste reduction (Candel 2019). The MUFPP Secretariat was established within the Mayor's office of the City of Milan to serve as a permanent

¹⁸ See the Consortium's first report on Pathways to Sustainable Land-Use and Food Systems. It was published in July 2019 and presents initial pathways from 18 countries (IIASA and SDSN 2019).

¹⁹ For the full list of supporters see www.unsdsn.org/fable (last accessed 18/12/2020)

²⁰ See <https://www.milanurbanfoodpolicypact.org/> (last accessed 18/12/2020)

contact point and to facilitate communication with signatory cities, networks, urban areas interested in joining the pact and other partners interested in collaboration.

2.2 Other activities and initiatives excluding public authorities

Beyond the initiatives summarized in chapter 2.1, there are also initiatives that do not include public authorities. To effectively understand and facilitate a transition towards a more sustainable food system, it is crucial not to limit the analysis to collaborations which include public authorities. The following section, therefore, summarizes other activities and initiatives that do not include public authorities but still have or had an impact on policy debates around food system transformation.

An important role in this regard is played by an ever-increasing amount of **research studies and institutions** (see chapter 1.1) that show the need and instruments to reduce FLW and the importance of plant-rich diets not only for health, but also for food security and keeping the food system within planetary boundaries. These studies are increasingly entering the public debate but their uptake by policy makers remains mixed – and is particularly low with regard to the need to **reduce protein overconsumption by reducing consumption of animal-based foods** (Rust et al. 2020).

Activities related to dietary shift

However, despite the “political void” to implement instruments for a **dietary shift**, there are some associations, foundations, expert groups, alliances of NGOs and others that are advocating for a dietary shift. Two prominent examples are IPES-Food and 50by40:

- ▶ The **International Panel of Experts on Sustainable Food Systems (IPES-Food)**. IPES Food is an independent panel of experts with a mission to promote the transition to sustainable food systems around the world. The panel is co-chaired by Olivier De Schutter, former UN Special Rapporteur on the Right to Food, and Olivia Yambi, nutritionist and former UNICEF representative to Kenya and brings together experts on global food systems from 18 countries across 5 continents. Since 2015, IPES-Food has shaped the debate on global food system reform through scientific reports and detailed policy recommendations²¹ – e.g. a proposal for an “EU Common Food Policy”, EU Trade Policy for Sustainable Food Systems, COVID-19 and the Crisis in Food Systems, concentration in the agri-food sector, the Food–Health Nexus and others. In 2021 IPES-Food will publish a report on meat and protein transition.
- ▶ **50by40** is a coalition of organisations dedicated to cutting the global production and consumption of industrial animal products around the world by 50% by 2040. The network consists of 49 organisations – many of them alliances and umbrella organisations themselves (ICLEI, Food and Climate Alliance, True Animal Protein Price Coalition etc.). They act as an international network of organisations for a fair, healthy, and compassionate food system. Activities of 50by40 are: (i) knowledge exchange through working groups (e.g. around climate change, corporate engagement, health) and other networking activities; (ii) support for movements and enabling discourse between diverse social justice

²¹ See <http://www.ipes-food.org/reports/> (last accessed 30/11/2020)

movements and (iii) improving access to sector-specific grants, bringing together movement leaders and donors from different sectors in order to coordinate strategies.

In parallel development that is likely to influence policy agendas (further) is the **growing market share of novel vegan and vegetarian meat and dairy alternatives**, before and even more during the Corona pandemic, aided by shortages of beef and pork (Bloomberg 2020). This is likely to have a significant effect on meat markets in the future. While scenarios for market developments for meat and meat alternatives differ significantly, the upper range estimations such as by the Global Managing Consulting Firm ATKearney, predict large market growth for meat alternatives, assuming that by 2040 60% of the meat market will be either cultured meat (35%) or novel vegan meat replacement (25%) (ATKearney 2019). Given the preferential ecological footprint of plant-based meat alternatives, diets that substitute (part of their) consumption of animal products with plant-based alternatives can (depending on the actual product)²² help to keep food systems within planetary boundaries (Jetzke et al. 2020).

Activities related to FLW reduction

In comparison to dietary shift, **more and longer established activities exist on FLW reduction**. The fact that there is an internationally negotiated objective (SDG 12.3) has facilitated this development.

Moreover, there is **growing momentum in the private sector**, e.g. through:

- ▶ the International Food Waste Coalition (IFWC)²³ founded in 2015,
- ▶ the “**10x20x30 Food Loss and Waste Initiative**” started in 2019 in which large international retailers engage with their supply chains in order to reduce food waste²⁴ and
- ▶ the “**Coalition of Action on Food Waste**” launched by the Consumer Goods Forum in 2020, bringing together 14 of the world’s largest retailers and manufacturers with the goal of halving food waste (The Consumer Goods Forum 2020).

Moreover, the **World Bank** launched the first **Sustainable Development Bond** in 2019 to raise awareness of food loss and waste²⁵.

²² Benefits differ depending on the products compared: While beef has a larger ecological footprint than poultry, meat alternatives based on other animal products (e.g. egg white or dairy) have a larger footprint than those based on e.g. plants (wheat). Also, higher levels of processing lead to higher amounts of energy used so that the level of processing does not only have a less beneficial impact on health, but also on the products ecological footprint (Jetzke et al. 2020).

²³ Founded in 2015, the International Food Waste Coalition (IFWC) is a not-for-profit association to reduce food waste throughout the food services value chain in the world, starting with Europe. It is self-funded by members’ subscriptions and grants. Members are: Sodexo, ardo, essity, General Mills and WWF, backed by pre-eminent advisory bodies. See Coalitions Website <http://internationalfoodwastecoalition.org/> (last accessed 30/11/2020)

²⁴ The initiative brings together 10 of the world’s biggest food retailers and providers to each engage with 20 of their priority suppliers to aim to halve rates of food loss and waste by 2030 (Champions 12.3 2020)

²⁵ Together with the Folksam Group, the World Bank has issued US\$2 billion equivalent through 25 Sustainable Development Bonds in ten currencies, while engaging with investors to raise awareness for the importance of combatting food loss and waste (World Bank 2019).

Large international **research projects**, such as the EU-funded REFRESH²⁶ have also actively supported governments in defining food waste reduction strategies. **WRAP** – a British charity with global reach has facilitated global exchange between countries in many ways, e.g. with regard to public **campaigns** (“**Love Food. Hate Waste**”²⁷) or provision of the “Food Waste Reduction Roadmap Toolkit” that provides the guidance and resources necessary to implement a strategy of ‘Target, Measure and Act’, report on progress and take action all along the supply chain to reduce food waste.

²⁶ Countries that received support and have developed so-called “voluntary agreements” were China, Germany, Hungary, The Netherlands and Spain. See project website www.eu-refresh.org (18/12/2020) and global knowledge hub “Community of Experts” <http://www.refreshcoe.eu/> (last accessed 30/11/2020)

²⁷ Created by WRAP in 2007 for the UK market, the campaign has been adapted and introduced in other countries, including Australia, Canada, New Zealand, and Saudi Arabia (see WRAPs homepage, <https://wrap.org.uk/about-us/what-we-do>, last accessed 30/11/2020).

2.3 Gap analysis

The overview in chapter 2.1 and 2.2 shows that there are **still relatively few initiatives** that deal with diet change, food waste reduction and approaches that support an overall food system change and integrated food policies.

Compared to other policy areas the initiatives are also still **rather young**: While policies that aim to reduce food loss and waste have a higher political acceptance and numerous initiatives have started since 2011, the need to reduce protein overconsumption by **reducing consumption of animal-based foods is not yet on the policy agenda** of most countries (and remains a more or less **neglected policy area**). Even in the ambitious EU Farm to Fork Strategy, a clear reference to dietary change was removed in the last stages of negotiation²⁸.

The lack of policy proposals that address protein overconsumption by reducing consumption of animal-based foods is not surprising given that setting up policies that directly impact food choices often has low public acceptance. Moreover, there are strong economic interests and actors in the livestock sector, particularly in countries like Brazil, the US and Argentina that belong to the biggest global players in the livestock sector. At the same time, studies show the huge economic benefits that can be tapped into through food waste reduction and dietary shifts (FOLU 2019).

While **attention** on opportunities for food system change has been growing, **food system thinking is not yet mainstreamed in sectoral policies**, leading to incoherent policies.

Integrated policies at both national as well as international level for sustainable food systems **are still scarce**. Also, the mitigation potential of food system transformation is not yet well established on the climate policy agenda, keeping climate policies and initiatives from becoming a driver of food system transformation.

Overall, there are **still few national governments involved** in pushing for stronger multilateral collaboration to transform food systems, reduce food loss and waste and a dietary shift.

It is noteworthy that except for the EAT forum, no initiative involving public authorities (of those listed above) explicitly mentions the need to reduce protein overconsumption by reducing consumption of animal-based foods and/or makes explicit what the role of meat and other animal products is within “sustainable diets”.

Also, most initiatives (both with regard to food waste reduction and dietary shift) focus on **soft measures**, such as “awareness raising”, “stakeholder exchange”, “research collaboration” and “sharing of best practices”. The focus on soft measures is not per se problematic, as they also can be highly effective. They can also open up space for regulation to come after. At the same time, many challenges that can only be overcome by regulatory changes have already been identified and it is important that they will be addressed in the future. Probably with the exception of EAT, work on the **improvement of regulatory and financial frameworks seems to be a lower priority**.

The analysis of the status quo and gaps shows that both **FLW reduction, as well as diet shift, depend on an overall change in food policies** which provide incentives for sustainable food

²⁸ Specifically, the sentence “the Commission will propose to stop stimulating production or consumption of meat” was replaced by “[f]urthermore, the Commission is undertaking a review of the EU promotion programme for agricultural products (...). In relation to meat, that review should focus on how the EU can use its promotion programme to support the most sustainable, carbon-efficient methods of livestock production.” (Wunder, Frelih-Larsen, and Herb 2020)

production and consumption. Such a food system approach needs to be **mainstreamed in all sectoral policy areas**, most importantly within **climate, agriculture and health policies**.

In parallel, it **takes pioneers** in national and subnational governments that set up strategies/political frameworks for food system change, including FLW reduction and dietary shift.

Furthermore, **multilateral collaboration/international support mechanisms are needed** to facilitate exchange, set standards and provide advice for the complex tasks of food system transformation.

With regard to the UN, it can be stated that although there are many activities within the UN agencies (e.g. FAO, WHO, UNEP, UNSCN²⁹, World Food Programme, UNICEF, UN-Habitat, UNDP, UNCTAD etc.) or that include UN agencies, there is still relatively **little collaboration between different UN agencies** (although many UN agencies do have a stake in these issues) and **too few activities that strive for a coherent policy framework** for sustainable healthy and fair global food systems.

To conclude, table 2 provides a summary of the identified gaps and draws conclusions for needed action relevant for both dietary shift and food waste reduction.

Table 2: Overview of identified gaps and needed action/initiatives

Identified gaps	Needed action
<p>Still rather few initiatives, compared to other policy fields, initiatives are very young: food waste related activities started first, dietary shift a neglected policy area/still in the stage of policy agenda setting</p> <p>Dietary shift/reducing protein overconsumption by reducing consumption of animal-based foods is a difficult political issue/ not yet on global policy agenda</p> <p>Growing attention to the opportunities for food system change, though food system thinking is not yet mainstreamed in sectoral policies and not yet aligned between different policy levels (local to international)</p>	<p>From silos to systems: Integrated and coherent policies for food system change needed, Food system approach including FLW reduction and dietary shift need to be mainstreamed in sectoral policies and needs to be aligned vertically between different governance levels (regional, subnational, national, international).</p>
<p>Only few national governments involved in pushing for stronger multilateral collaboration to transform food systems</p>	<p>Need for national pioneers/groups of frontrunners that set up strategies/political frameworks for food system change, including food waste reduction and dietary shift</p>
<p>Soft measures/collaboration and awareness raising are dominant approaches</p>	<p>Improvement of regulatory and financial frameworks is precondition for sustainable food systems</p>

²⁹ By the beginning of 2021, efforts of the UNSCN (United Nations System Standing Committee for Nutrition) and UN Network for SUN (Scaling Up Nutrition) will be merged into a single entity, entitled UN Nutrition (UNSCN 2020). UN Nutrition will be an inter-agency coordination mechanism for nutrition at global level, and a collaboration platform at country level, bringing together UN agencies to accelerate progress for nutrition objectives and targets. UN Nutrition is universal in its coverage, and thus relevant to all countries. Among its other functions, UN Nutrition will also serve as one of the networks of the Scaling Up Nutrition (SUN) Movement.

3 Options for increased multilateral cooperation

Chapter 2 has illustrated that food waste reduction and (to an even greater extent) efforts to shift dietary patterns are relatively young policy areas for multilateral collaboration.

The analysis leads to the conclusion that without a shift towards regulatory frameworks which build on an integrated cross-sector perspective on food production, processing and consumption, it is hardly possible to establish effective measures to tackle food waste and to shift diets. It is therefore needed to make a food system thinking approach an integral part of all policies and processes which touch on food systems. Looking for options to increase multilateral cooperation for FLW reduction and dietary shift therefore also means that proposals need to be in line with a food system thinking approach.

The following section presents four options for increased multilateral cooperation that have been identified by the project team. Each proposal comes with a suggestion for a name that intends to catch some of the key aspects of the activities proposed. These are:

1. **“Biting back better”**: The setting up of an international institution including a secretariat that assists in building appropriate national frameworks/ national strategies with a food system approach. It organizes exchange among countries and is assisted by a scientific advisory body akin to the IPCC.
2. **“ClimEat-Change”**: Initiative to strengthen a food system approach in international climate policy and existing processes of the UNFCCC: e.g. through the NDC Partnership, the Koronivia Joint Work on agriculture (KJWA) or through the follow-up process of the “Glasgow Food and Climate Declaration”.
3. **“Nutrition Guidelines for Future”**: A multilateral collaboration and exchange mechanism on how to implement and locally adapt the Planetary Health Diet requirements into National Dietary Guidelines (NDG).
4. **“Ensure 12.3”**: Initiative to set up an international food loss and waste accreditation scheme that helps to measure and manage FLW all along the value chain and allows policy makers to make better-informed decisions.

3.1 Option “Biting back better” – national strategies with a food system approach and international support mechanism

“Biting back better” deals with the **development of national strategies with a food system approach** and involves the setting up of an **international institution and support mechanism**. This institution will include a secretariat that assists in building appropriate national frameworks and good governance approaches, highlights good practice, supports exchange among countries, evaluates different policy approaches and tracks results. It is assisted by a scientific advisory body similar to the IPCC. “Biting back better” responds to the need for better and more integrated policies and governance at national and subnational level and seeks to activate potential pioneer countries to champion the approach.

The name of the initiative refers to the well-established approach of “Building back better” (as a reaction to an event that caused destruction) first described in 2015 at the UN World Conference on Disaster Risk Reduction. “Building back better” is aiming to reduce the risk to communities in the wake of future disasters and shocks. It is a phrase and approach that meanwhile has also often been used in discussions on the recovery from the COVID-19 crisis, describing that a return to ‘business as usual’ and environmentally destructive investment patterns and activities must be avoided and that economic recovery packages should be designed to “build back better”.

The COVID-19 pandemic has also exposed globally how fragile food systems are, highlighting the need for food system resilience and food system approaches in policy.

The need for national strategies with a food system approach

The initiative reacts to the gap that so far only **very few countries**³⁰ (e.g. the Nordic countries in Europe, the UK and France) **have started to design national policies with a food system approach**. This national (and subnational) level is however very important since food systems in countries differ widely and activities need to be **tailored to regional needs**. For example, national characteristics need to be taken into account, when it comes to cultural consumption patterns and acknowledging regional opportunities and threats with regard to climate conditions, food security, public health etc.

Also, with regard to food waste reduction and diet change, regional food system characteristics need to be taken into account: For example, while in the Global North food waste occurs to a large extent at consumer level, it is the lack of storage and appropriate (cooling) infrastructure in production and processing that leads to losses in the Global South. Similarly, interventions that support a diet shift, such as adapting national dietary guidelines, should not only take into account health, environmental and global food security requirements, but also need to consider what food can be grown in which countries.

It is therefore the national level and subnational level that plays a crucial role when sustainable food policies are designed.

To achieve sustainable food systems transformation at national level, actions must be **aligned horizontally** across policy areas. In **most countries, responsibility for food systems is split across several ministries**, with agriculture, health, trade, economic and environment departments typically setting agendas based on different priorities, **conflicting objectives and incoherent support systems**. This **incoherence** can be seen in many ways, examples include:

- ▶ Farm subsidies are spent on food production models that harm the environment, while environmental policies aim to counteract this trend with more public money.
- ▶ Efforts to prevent food waste at source are counteracted by bioenergy policies that support that food fit for human consumption is used to produce bioenergy.
- ▶ Health policies and agricultural policies are not coherent, e.g. leading to unhealthy diets, shortage of last-resort antibiotics for human medication due to an overuse of antibiotics in the livestock sector etc.
- ▶ Many industrialized countries spend development aid to create jobs in the global South. At the same time, export of subsidized agricultural products or the sale of leftovers (such as offal, wings and necks) at dumping prices is damaging the farming sector and its employment in these countries.

There are also important inconsistencies between governance levels that require **alignment vertically between different governance levels** (regional, subnational, national, international). Interestingly, there is much more activity on regional and city level to develop integrated food policies (e.g. through the Milan Urban Food Policy Pact) than on national level and many food system innovations are taking place on this level, too: e.g. community-supported

³⁰ See for example Sweden (Swedish Government 2017), Norway (Norwegian Ministries 2019) or the first part of the UK Food Strategy, published in July 2020 (defra 2020)

agriculture, creation of urban gardens, building regional value chains and brands, food waste reduction activities, behaviour change campaigns etc.

The different perspectives need to be included through **multi-actor, cross-sectoral** and **multi-level governance mechanisms** that should result in the development of national strategies/policies that create a coherent policy framework. A major part will be to **phase out harmful subsidies** and o **(re) direct subsidies and incentives towards healthy and sustainable food**, to make trade regulation coherent with the overarching food system objectives and to create a level playing field for agro-ecological solutions in the food system.

Possible instruments to support the dietary shift and reduce food loss and waste

Depending on the national and regional circumstances and focus areas of the strategy, a wide variety of instruments and approaches is available to policy makers. With regard to the two focus areas of this paper, the following two tables give a short overview of the diversity of potential approaches and instruments.

Table 3: Entry points for policy makers to accelerate the dietary shift

Measures that can be taken by policy makers	Potential impact on diets/dietary shift
Including external costs of the livestock sector, e.g. internalizing external costs on water quality, soil etc. and phase out environmental harmful subsidies	True cost accounting (through fiscal measures such as taxes) increases prices of animal products and disincentives (over-)consumption
Improving animal health and welfare , e.g. regulation of stocking rates , reducing the use of antibiotics	Less dense stocking rates and use of alternatives to lower use of antibiotics → higher production prices → decreased (over)consumption
Off-setting the economic and structural costs associated with food system transformation, particularly in the livestock sector (e.g. compensation mechanisms, advice, access to loans)	Increases acceptance by those effected and provides alternatives and planning security
Diversified crop systems , particularly increasing legumes	Diversification of food and nutrients, providing protein-rich food from plants
Stop stimulating production or consumption of meat (banning particular advertisement, e.g. promotion of discount prices on meat)	Will reduce stimulation of additional demand
Include sustainability requirements in dietary guidelines (e.g. according to Planetary Health Diet) and ensure that they are taken up in practice (staff training, education, public procurements tec.)	National dietary guidelines set an important baseline for public procurement and health professionals, should be in line with PHD and culturally adapted
Education and awareness programs about health and sustainability benefits of plant-rich diets	Improves take-up of plant-based diets, change social norms about the desirability of animal vs plant products
Guidance for public procurement/ requirements for a certain share of plant-based dishes/vegetarian dishes as the default option in public procurement	Higher shares of plant-based menus → creates demand in the supply chain → enables farmers to change production
Mandating food labels and sustainable labelling frameworks	Enables easier choices, increases awareness and transparency
Research: Piloting and evaluating behavioural changes interventions	Design of more effective interventions
Research on alternative proteins and meat substitutes	Can improve development and market uptake, should include research on sustainability impacts
Mobilizing change agents (youth, social entrepreneurs, farmers, health and culinary communities, food policy councils etc.)	Dietary shift needs change agents, influencers, multipliers, ambassadors to reach large parts of the society and change behaviour

Source: own compilation.

Table 4: Entry points for policy makers to accelerate reduction of food loss and waste

Measures than can be taken by policy makers	Potential impact on food loss and waste reduction
Target – measure – act: improve or set up food waste measurement , identifying national hotspots and barriers for food waste reduction. Make measurement and reporting of food loss and waste by large companies mandatory , tailor interventions for sectors, monitoring of impacts and adapting the strategy if needed	Essential to develop a national strategy to reduce food waste, identify effective interventions according to national and sector specific needs, mandatory measuring increases market uptake of monitoring solutions
Set up Public-Private Partnerships and (voluntary or binding) Agreements for Action	Increases reduction potential all along the supply chain
Support use options to valorise food before it becomes waste along the food use hierarchy : 1. Redistribution and processing of surplus food for human consumption (e.g. through food banks) 2. Animal feed, 3. Recycling and recovery (compost, pet food, industrial uses, energy production)	Using surplus food before it gets waste decreases waste amounts. Synergies with other sustainability goals (e.g. Social), if set up within coherent policy frameworks that prefer most resource-efficient solutions (e.g. surplus food for biogas production) for other purposes (donation, feed etc.).
Implement policies to prevent unfair trading practices (e.g. in the retail sector last-minute cancellations, marketing standards, power imbalances etc. also lead to food waste)	Addressing structural issues in the food chains, such as power imbalances as one of the root causes of food waste
Scale up financing for solutions that tackle food loss and waste (grants, venture capital, commercial investments etc.)	Promising solutions to reduce food loss and waste exist. Financial resources would facilitate their uptake and scaling up.
Include food waste reduction requirements (customer awareness, prevention in kitchen, portion size, staff training etc.) in procurement criteria	Public procurement requirements are particularly powerful due to the large buying power of public institutions and that the procedures established are then also often used in other business settings
Training of relevant staff in public institutions (education, health and hygiene inspectors, agricultural advice, etc.)	Food waste reduction efforts need to be mainstreamed and applied by those who make relevant decisions with food waste implications
Implementing consumer education programs improving skills and information	Better competencies and knowledge on how to store, prepare, (re-)use food
Policies to clarify food date labelling , reduce confusion about product safety and quality, and improve consumer understanding	Misunderstanding of date labelling as one of the (consumer related) causes for food waste
Research on causes and amount of food losses (including pre harvest/plough in) in agriculture	Improves database for food losses that are much less studied, large potential for interventions
Research on the effectiveness of interventions targeted at consumer behaviour , particularly related to social norms	Food waste on household level major source in developed countries, interventions though are rarely tested for their impact, information and awareness raising likely to be least effective
Research to reduce food losses and waste due to unsuitable storing, transport, cooling, packaging	In developing countries food waste largely happens due to unsuitable infrastructure, particularly with regard to storage and cooling

Source: own compilation.

International support mechanism “Biting back better”

Since so far very few countries already work on integrated policy frameworks and strategies which support the transformation towards sustainable food systems (see chapter above) it is

important that a critical mass of **countries take a pioneering role** and showcase the benefits of a food system approach.

Europe could play a leading role here, considering the EU “Farm to Fork Strategy” adopted in 2020, which provides an ambitious strategic framework that will also shape food policies of EU Member States. Also, with a number of countries in Europe that already work on integrated strategies for sustainable food systems (Nordic countries, UK, France etc.) there are already some frontrunners.

Germany could join this group of countries, building on the resolution by Germanys State Secretary Committee for Sustainable Development, published in summer 2020. Within the document, the group of state secretaries from all federal ministries describe the need to develop a common concept for sustainable food systems in Germany – together with all relevant stakeholders. They also point out their support for the ongoing international processes in this regard and back the recommendations resulting from the EAT Lancets Commission with regard to the Planetary Health Diet (Bundesregierung 2020).

In parallel to national pioneers, **a support mechanism is needed** that facilitates the exchange of approaches e.g. with regard to success factors, barriers and efficiency of instruments³¹, assists in building appropriate national frameworks and good governance, highlights good practice, supports exchange among countries, evaluates different policy approaches and tracks results.

This initiative – here called “Biting back better” – **could be a result of the UN Food System Summit** and/or become a **part of the Glasgow Food and Climate Declaration** that is still under development (see chapter 3.2 below). The institution would include a secretariat and would benefit from an IPCC like body that continuously reviews the scientific basis of food system change and issues regular updates³². The International Climate Initiative (IKI) as one of the most important instruments of the Federal German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) for the international financing of climate protection could play a role in setting up this institution.

With regard to a needed governance structure the mechanism could build on the experiences of the Secretariat of the Milan Urban Food Policy Pact, the EU Platform for Food Loss and Waste and the Nordic Food Policy Lab³³.

³¹ So far, relatively little is known about the efficiency of specific instruments, and even more the combination within policy mixes. Fanzo et al. 2020 is one of the few studies that tried to systematically evaluate the combination of food policy interventions. They show that policy packaging—the systematic bundling of different policy measures—can help to mitigate the potential trade-off between political feasibility and problem-solving effectiveness.

³² This can build on e.g. the Food System Dashboard. The Food Systems Dashboard combines data from multiple sources to give users a complete view of food systems. Users can compare components of food systems across countries and regions. They can also identify and prioritize ways to sustainably improve diets and nutrition in their food systems. The Dashboard contains over 150 indicators that measure components, drivers, and outcomes of food systems at the country level (see Global Alliance for Improved Nutrition (GAIN) and Johns Hopkins University 2020).

³³ Nordic Food Policy Lab is one of six flagship projects under the “Nordic Solutions to Global Challenges” initiative. The overall aim of the Nordic Food Policy Lab project is to encourage the use of Nordic policy solutions to help address the food issues identified as challenges in the UN Agenda 2030 Sustainable Development Goals. See <https://www.norden.org/en/nordic-food-policy-lab> (last accessed 18/12/2020) and the 2020 “Cookbook for Systems Change – Nordic Innovation Strategies for Sustainable Food Systems” <https://pub.norden.org/nord2020-048/> (last accessed 22/02/2021).

3.2 Option “ClimEat-Change” - a food system approach in international climate policy

“ClimEat-Change” – an intended wordplay between Climate & Eating and the need for change - could be an initiative to strengthen a food system approach in international climate policy. To do this it works through existing processes of the UNFCCC.

The proposal builds on the need identified in chapter 2, to increase the synergies between climate policies and sustainable food policies and to make climate policies a driver of food system transformation. So far - as several studies showed - the **processes within climate policy to achieve the goals of the Paris agreement are not well equipped** to exploit the GHG mitigation potential within the food system (WRI and Oxfam 2019; WWF et al. 2020; Fransen et al. 2019).

“ClimEat-Change” therefore identifies approaches how international climate policy, particularly within the UNFCCC process can be used to improve the transformation towards sustainable food systems. This relates e.g. to the **nationally determined contributions (NDC)**³⁴, the **NDC Partnership**, as well as the **Koronivia Joint Work on agriculture (KJWA) and COP26** as described below. To summarise, **as part of “ClimEAT Change”**

- ▶ Countries should be encouraged to include specific targets for GHG reductions through food system interventions, such as food loss and waste reduction, sustainable diets or food consumption in their NDCs and/or consider them in the process of setting up their NDCs
- ▶ In order to do this the NDC Partnership could be used better to provide knowledge and tools so that countries improve their NDCs by including food system related commitments (starting with nutrition recommendations/dietary guidelines).
- ▶ A process (within or outside KJWA) should be opened that helps countries to set up instruments for food system transformation, particularly dietary shift and food waste reduction, in order to reduce emissions.
- ▶ A dedicated session that focuses on food systems should be included at COP 26.
- ▶ National and subnational governments should commit to the “Glasgow Food and Climate Declaration” presented at the COP26.

Nationally Determined Contributions (NDCs)

While many countries mention the agricultural sector in their **NDC**, so far very few countries set targets for other areas of the food system, such as food loss and waste reduction, sustainable diets or food consumption: Only eleven countries currently mention food loss in their NDCs, not one country makes reference to food waste reduction or sets goals for a dietary shift. A handful of NDCs refer to the food system approach, but these mostly remain focused on the stage of food production and not the later stages where large emissions from food loss and waste and diets and consumption occur (WWF et al. 2020).

This means that opportunities to reduce global emissions of the food systems sector remain largely untapped by now. A first but essential step would therefore be to put the issue on the

³⁴ To meet the Paris Agreement goals, every party to the treaty is expected to prepare a nationally determined contribution (NDC) every five years. NDCs include targets, measures and policies and are the basis for national climate action plans.

political agenda in order to raise awareness and bring approaches and options for action into the political discussion. Including the topic of food system transformation towards sustainability is an important step to enhance the ambition of the NDCs. The NDCs should be used to set targets and come up with measures and policies in the area of food waste and diet shifts on national level. The extent to which the topic is considered in the updated NDCs to be submitted by the end of 2020 remains to be evaluated.

NDC Partnership

In 2016, the global **NDC Partnership**³⁵ (NDCP) was launched at the COP 22 in Morocco. The Partnership seeks to help countries to accelerate climate action by providing quick and easy access to data, tools, guidance, good practice, and funding opportunities. It was initiated by the Federal Ministry for Economic Cooperation and Development (BMZ), together with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the Moroccan government and the World Resources Institute (WRI).

Countries can become a member of the NDC Partnership to gain support for an ambitious implementation of their NDCs. Support is provided in three fields a) targeted technical assistance and capacity building, b) knowledge products to fill information gaps and c) enhanced financial support. So far, about 110 countries, both industrial and developing countries, and a wide range of institutions, including the FAO and the World Farmers Organization, are members of the NDCP. In addition, other organizations like CAN (Climate action network) or Climate Analytics contribute as associate members to the NDC partnership.

While many countries are Members of the NDC Partnership, generally, only developing countries³⁶ are actively engaged and receive support. Other member countries provide support and financing. In practice the NDC Partnership works with a small secretariat to channel expertise and finance from donor countries and international organizations with expertise in certain fields to developing countries that need support with the development of their NDC. However, in principle it is possible that partners with food system expertise support NDC development with their knowledge (e.g. with regard to networks, financing and country analysis). This could be done either through the NDC Partnership or their direct relationship to countries. The inclusion of the EAT Commission as an associate member could be a way of anchoring the topic in the NDC Partnerships as well.

Similarly, to make NDCs of developed/industrialized countries more ambitious and increase exchange among these countries has so far also been out of scope for the way the NDC Partnership has been operating. However, as industrialized countries have a large mitigation potential (see box below), setting good practice examples for the transformation of food systems through commitments in their NDCs and exchange about promising strategies and success factors is needed.

³⁵ See <https://ndcpartnership.org/> (last accessed 18/12/2020).

³⁶ See <https://ndcpartnership.org/countries-map> (last accessed 18/12/2020)

Box 2: Top 10 countries with highest mitigation potential in the land sector and top 10 countries with highest potential in shifting diets

Mitigation potential of countries

According to an analysis of WWF, WRI, EAT and Climate Focus, the 10 countries and regions with the highest mitigation potential in the land sector are currently Brazil, China, Indonesia, the European Union, India, Russia, Mexico, the United States of America, Australia and Colombia. On the demand side, the United States, the European Union, China, Brazil, Argentina, and Russia have the highest potential for shifting diets to stay within planetary boundaries while significant opportunities to reduce food waste by consumers exist in North America, China, the European Union and most emerging economies. Southeast Asia and Sub-Saharan Africa have the greatest potential for preventing food loss from production (WWF et al. 2020)

Koronivia Joint work on agriculture (KJWA)

The Koronivia Joint work on agriculture is the result of an agreement on the next steps for agriculture within the UNFCCC framework (decision 4/CP.23) that was reached at the UN climate conference COP23 in November 2017. Under this decision, countries agreed to work together to make sure that agricultural development leads to both increased food security in the face of climate change and a reduction in emissions. It is therefore in principle the process through which action around climate policies and sustainable food systems is discussed.

So far though, a clear link to sustainable food systems, dietary change and/or reduction of food loss and waste is missing in the process, though it addresses a wide range of topics including food security, climate adaptation, livestock, nutrient use, financing and mitigation of GHGs in agricultural production.

In 2018, a detailed timetable for a total of 6 workshops was agreed upon. The workshops dealt with adaptation, soil and water management, and nutrient use and manure management. The last two of these workshops took place during the (virtual) Climate dialogues in November 2020 dealing with livestock management systems and socio-economic and food security. In the workshop on socioeconomic and food security dimensions of climate change in the agricultural sector the issues of sustainable food systems, dietary change and/or reduction of food loss and waste though came up quite prominently³⁷.

Results of the work of the Koronivia process will be reported back at COP 26 in 2021. However, the future of the Koronivia process is pending and there are several options for how to proceed with the topic of agriculture within the UNFCCC process (UNFCCC 2020). Parties and observers are invited to submit their views on future issues and on the progress of work on the Koronivia joint work on agriculture – this process is delayed due to cancelled COP in Glasgow in 2020 and its postponement to 2021.

The call for submission on future topics could be used to propose the **discussion of agri-food system transformation as a future topic within the Koronivia** process. For example, a further **workshop** under the Koronivia could deal with the findings of the Eat Lancet Commission and its repercussions on the agricultural and food system. The Action Agenda and side events program can also be used to raise awareness and engage stakeholders on the issue.

³⁷ Presentations are available online: <https://unfccc.int/event/koronivia-workshop-on-socioeconomic-and-food-security-dimensions-of-climate-change-in-the> (last accessed 18/12/2020)

COP 26 and “Glasgow Declaration”

Two further options to strengthen a food system approach in international climate policy are connected to the COP26 in Glasgow:

First, a **dedicated session** that focuses on food systems should be included at COP 26 (a request also made by 26 NGOs in the open letter “Food and farming must play their part in meeting the Paris Climate targets” in November 2020 (Compassion in World Farming 2020)).

Second, the “**Glasgow Food and Climate Declaration**” which is currently under development³⁸ is expected to include a call to action for all levels of government (particularly subnational) to tackle climate change through integrated sustainable food policies. Therefore, it will be a very important opportunity at the COP26 to commit governments to working towards a food system change. The Declaration is drafted in partnership between international networks of subnational governments, UN agencies and non-governmental organizations working on food systems and climate change as well as in consultation with subnational, city and regional governments (e.g. including IPES Food, EAT, MUFPP, ICLEI, FAO Urban Food Agenda and others).

The Declaration will be presented and adopted as part of a **Food Systems Day at COP26**. It is also planned to present it as part of the Food System Summit, **CBD COP15** and **Nutrition for Growth Summit** (IPES Food 2020).

A way forward

To take the ClimEat-Change initiative forward a workshop or workshop series should be set up to identify supporting countries and institutions, to discuss options for implementation and to explore funding opportunities (e.g. to expand the NDC Partnership). Funding of the International Climate Initiative (IKI) could help to kick-start progress for a workshop series as well as for the implementation of the different ClimEat-Change building blocks.

3.3 Option “Nutrition Guidelines for Future”: Reducing overconsumption of animal products and increasing plant-rich diets through national dietary guidelines

The idea behind “Nutrition Guidelines for Future” is to set up a multilateral collaboration and exchange mechanism to reduce overconsumption of animal products and to increase plant-rich diets through National Dietary Guidelines (NDG).

So far, NDGs are still mainly drawn up with an individual’s **human health** in mind. Building on scientific evidence (see chapter 1 and 2) it is necessary to **complement them** with a perspective on planetary health, taking into account climate change, other planetary boundaries and justice in light of a rising global population and follows a “One Health” approach³⁹.

Improving National Dietary Guidelines can also profit from multilateral collaboration with regard to exchange of best practice, raising the importance of NDG on political agendas etc. To do so a **multilateral collaboration** to support these efforts and facilitate shared learning should be set up. It should **build on FAO’s engagement around “Food based dietary guidelines” (FBDG)**. FBDG are a set of guidance given by the governments on how its citizens can eat well. To assist countries in meeting their commitments on healthy diets, FAO is supporting countries

³⁸ For updates see the website of the Glasgow Declaration <https://www.glasgowdeclaration.org/> (last accessed 3/12/2020)

³⁹ One Health is an approach that recognizes that the health of people is closely connected to the health of animals and environmental health.

to develop FBDG (see FAO and FCRN 2016). Meanwhile this process also aims to the inclusion of sustainability criteria (see FAO and FCRN 2016).

A call for the implementation of locally adapted national dietary guidelines, along with the PHD recommendations and the setup of a support mechanism could be part of a resolution of G20 and/or an outcome of the UN Food System Summit.

The debate around improving National Dietary Guidelines to better include sustainability criteria profits from the publication of the **Planetary Health Diet (PHD)** (see also chapter 2.1.6) by the EAT Lancet Commission in 2019 (Willett et al. 2019). The findings of the Commission provide the first ever scientific targets for a healthy diet and sustainable food production within planetary boundaries that will feed up to 10 billion people by 2050. Reducing the consumption of meat and other animal products in Western Diets is one of the key conclusions of the report: For example, a comparison between the average German Diet (with 60kg meat per person per year) and the Planetary Health Diet (PHD) shows that the PHD prescribes 75% less meat (adding up to a maximum of 15kg per person per year) and about 25% less milk consumption (across all dairy related products).

However, the **recommendations are not yet adapted to local food cultures** but rather provide a rough framework on the composition of a Planetary Health Diet. Necessary changes therefore need to take into account **local contexts**.

A 2020 publication of EAT compares current food consumption patterns and the efficacy of national dietary guidelines in G20 countries with the Planetary Health Diet. It shows that

- a) NDGs in G20 are not in line with the recommendations of the PHD⁴⁰ and are not compatible with climate targets and
- b) that G20 countries have “a variety of rich and vibrant diets and culinary traditions that require different approaches and scales of intervention to achieve healthy diets within planetary boundaries.”

These differences will need to be reflected when implementing the PHD. Some countries would require more ambitious reductions in per-capita related GHG emissions (i.e. fewer animal products) while others may even require a slight increase (Loken and DeClerck 2020).

While the revision of National Health Guidances and their adaptation to national contexts is an important step (and already started in e.g. Nordic countries and Canada⁴¹) and can benefit from multilateral exchange and cooperation, it needs further implementation efforts to change diets on the ground.

It is therefore important that recommendations about the Planetary Health Diet are taken up in **public procurement requirements**, to make the PHD **available, desirable and affordable** through national food policies, to include it in **consumer education and school curricula**, to **set up trainings for gastronomy experts and general practitioners/medical professions** and to use them as a reference in food related **standards and labelling**.

⁴⁰ According to Loken and DeClerck 2020 “G20 countries are inconsistent in their dietary recommendations and few integrate both health and environmental sustainability.”

⁴¹ Health Canada 2019

3.4 Option “Ensure 12.3”: A Food Loss and Waste Accreditation Scheme

The fourth option presented here for enhanced multilateral collaboration is to **establish and oversee an International Food Loss and Waste Accreditation Scheme**. It refers to a similar proposal that was published in 2019 by WRAP and the International Food Waste Coalition (IFWC) (WRAP and IFWC 2019). It is presented here with the suggested name “Ensure 12.3” with a reference to SDG 12.3 on food loss and waste reduction.

Unlike carbon emissions and water conservation, there is no formal accreditation process for organizations, related to food loss and waste yet, although measuring and reporting of FLW all along the value chain is a fundamental building block to being able to take concrete prevention action. An international FLW Accreditation Scheme could therefore have multiple benefits to reduce food loss and waste:

- ▶ It enables businesses, organizations, cities and countries to **measure and manage** their waste and waste impacts;
- ▶ **Actors are rated** for their respective performance and benchmarked under a formalized and structured process;
- ▶ Rating could also consider an organization’s employee engagement, sustainable food commitments, public reporting and communication/transparency on the topic as additional modules. The **rating outcome should increase transparency at the level of commitment** of the organization;

The “**Food Loss and Waste Protocol**”⁴² created by WRI and partners would form the **basis of the rules** against which organizations would be assessed and certified. The ambition is to create a scheme that is third party verified in order to build credibility in the certification. It would be aligned to the **Food Waste Index** under development (see IAEG-SDGs 2020) to measure and report progress against the SDG target 12.3.

To create the accreditation scheme a dedicated **institution could be established** (e.g. together with WRAP, IFWC and partners of the Food Loss and Waste Protocol). This institution would be responsible to support data collection and assessment, issues the certificate, provides ratings and supports the exchange of experiences with regard to the implementation of policies and interventions. To set up such an institution could be a decision resulting from the UN Food System Summit, could be included in a G20 declaration or could be funded through a multilateral collaboration of interested states.

⁴² <https://www.flwprotocol.org/> (last accessed 18/12/2020)

4 Conclusions and recommendations

By shifting diets and reducing food loss and waste, the global demand for food and the related GHG emissions can drop significantly. To address these issues, a coherent policy framework for sustainable food systems is needed at all levels (local, national, international). It is only with a food system approach that addresses market failures, internalizes the negative external health and environmental costs and that creates a level playing field for agro-ecological solutions that a large number of benefits related to climate, health, biodiversity, economic development and just livelihoods can be achieved.

However, integrated policies at both national as well as international level for sustainable food systems are still scarce, although with rising momentum. While policies that aim to reduce food loss and waste (FLW) have a higher political acceptance and numerous initiatives have already started since 2011, shifting diets remains a more or less neglected area.

This policy paper presented an overview of different existing international initiatives that support food system transformation and already work on specific activities to reduce FLW and accelerate the dietary shift towards sustainable and healthy diets that are plant-rich and low in animal products. These initiatives will also play an important role for the future development of this policy area and can be used to build on further cooperation.

The analysis also argues that to develop sustainable food systems further, the food system approach needs to be mainstreamed in all sectoral policy areas, most importantly within climate, agriculture and health policies. In parallel, it needs pioneers in national and subnational governments that set up strategies/political frameworks for food system change, including FLW reduction and dietary shift. Bilateral partnerships and twinning programmes between countries who are already frontrunners and those who aim to develop further can help to support food system transformation. It also needs multilateral collaboration/international support mechanisms to facilitate exchange, set standards and provide advice for the complex tasks of food system transformation.

The following table provides a brief evaluation of the four potential initiatives presented in chapter 3 and identifies priorities based on the following criteria:

- ▶ **Chances of success:** How high are the chances of success/ what is its political feasibility?
- ▶ **Efficiency:** How cost-effective is the abatement potential that the initiative expects to mobilise, and how cost-effective is the initiative's approach for doing so?
- ▶ **Costs:** What are the (transaction) costs of the initiative in question? Are there any other costs / benefits to be considered?
- ▶ **Transparency and compatibility with institutional structures:** Can the initiative be implemented within the existing international structures? Can transparency and coherence between the instruments be increased?

Table 5: Summary evaluation of potential initiatives in the field of sustainable food systems

Criteria/ initiatives	1 Biting back better National strategies with a food system approach & International support mechanism	2 ClimEat-Change A food system approach in international climate policy	3 Nutrition Guidelines for Future Reducing overconsumption of animal products, & increasing plant-rich diets through locally adapted dietary guidelines	4 Ensure 12.3 International food loss and waste accreditation scheme
Chances for success	Medium to high (can build on existing structures and processes)	Medium to high (can directly start within ongoing processes (COP, NDCs, though slow process))	Medium to low (only addresses a part of the food system change needed)	High (politically feasible, easy to implement)
Efficiency and Costs	High (paid back by huge amounts of avoided costs, though most efforts need to be regionally tailored/take place on national level)	High (untapped large potential of GHG mitigation in the food sector, no additional structures needed)	Medium (cost efficiency of the exchange structure increases, if it becomes an action track within the “Biting Back Better” Initiative)	High (little extra effort as measuring and monitoring tools are in place)
Transparency, international structures	Medium to high (can be implemented within the existing international structures)	High (can be implemented within the existing international structures)	Medium (limited room for multilateral collaboration)	High (ratings and benchmarks help the sector to develop, allows better comparison)
Sustainability, environmental integrity	High (increases coherence between SDGs)	High (increases coherence between SDGs)	Medium (risk of becoming too health centered)	Medium (relatively low food system change potential)
Priority	High	High	Medium	Medium to high

Source: own compilation.

In terms of prioritizing the different potential initiatives, “ClimEat-Change” and “Biting back better” in particular appear worth pursuing in the short term:

5. **“ClimEat-Change”** presents a number of options how a food system approach can be strengthened in international climate policy. As it builds on existing processes of the UNFCCC, such as the nationally determined contributions (NDC) of countries, the NDC Partnership, the Koronivia Joint Work on agriculture (KJWA) and COP26 in Glasgow it can be implemented rather easily. Aligning food policies with climate policies also has a huge potential in increasing the coherence between SDGs.
6. **“Biting back better”** is also identified as an initiative with high priority. It cannot build on existing processes and institutions. However, through the setup of an international institution that assists in building appropriate national food strategies and facilitate international exchange of best practice it has a large potential to move integrated food policies up on policy agendas and to support evidence-based decision making. While setting up a process and structures (secretariat, IPCC like body) involves additional costs, there is a big potential of payback through large amounts of avoided costs.
7. **Ensure 12.3** can be set up relatively easily and is likely to cost-effectively realize a significant reduction potential for FLW and GHG. The relevant tools and databases needed

for the international food loss and waste accreditation scheme are already available. The approach is clearly targeted to FLW reduction, though rather a first step than key tool for food system change.

8. **“Nutrition Guidelines for Future”** would be an important initiative to improve the coherence between health and climate aspects of food policies. It can build on existing structures and institutions in order to implement and locally adapt the Planetary Health Diet requirements into National Dietary Guidelines. This effort however only addresses a part of the food system change needed and has limited room for multilateral collaboration. It is therefore seen as having a lower priority. “Nutrition Guidelines for Future” could also become an action track of “biting back better”.

All initiatives can be set up in combination and in parts. The exact scope of each initiative would also depend on funding and if there is a critical mass of countries that take a pioneering role and showcase the benefits of a food system approach. Europe could play a leading role here, considering the EU “Farm to Fork Strategy” adopted in 2020, which provides an ambitious strategic framework. Also, there are already some frontrunners in Europe that work on integrated strategies for sustainable food systems.

The implementation of initiatives also depends on the process in which they will be brought forward and the mechanisms that are available within these political processes. In this regard, **2021 provides multiple windows of opportunity** for international action and multilateral collaboration, such as:

- ▶ The United Nations Environment Assembly (UNEA 5), that will take place on 22-26 February 2021, including an action area on **“Nature for Sustainable Food Systems”**;
- ▶ The **UN Food System Summit** in autumn 2021, that is likely to spur further action by countries. Expected outcomes include: Commitments for action by different actors, including countries, cities, companies, civil society, citizens, and food producers; a high-level set of principles (...) that will guide Member States and other stakeholders to leverage their food systems capacity to support the SDGs and a “system of follow-up and review that will drive new actions and results; allow for the sharing of experiences, lessons and knowledge; and incorporate new metrics for impact analysis” (UN Food System Summit 2020). The summit has five action tracks. With regard to the issues tackled in this paper, action track number 2 (“shifting to sustainable consumption patterns”) is most relevant.
- ▶ The **UN Climate Change Conference (COP 26)** that will take place in Glasgow in November 2021 COP26, which will be held in Glasgow on 1-12 November 2021 in partnership between the UK and Italy;
- ▶ The **UN Convention on Biological Diversity (CBD COP 15) in 2021**;
- ▶ **UK G7 presidency** and **Italian G20 presidency** in 2021 (while both countries are also hosts to the Climate COP). In 2022 (or more specifically, December 2021), Germany will take over the G7 presidency and may be able to build on the processes/results;
- ▶ **Nutrition for Growth (N4G) Summit** in Tokyo in December 2021 aiming to transform the way the world tackles the global challenge of malnutrition and to transform the food

system towards promoting safe, sustainable, and healthy foods to support people and planet.

- ▶ Development of a proposal for a **legislative framework for sustainable food systems to implement the EU Farm to Fork Strategy**, to be finalized until 2023.

To accelerate action, the suggested options for multilateral cooperation can all play a meaningful role in these processes and help to mainstream food system thinking in different international policies.

5 Annex – Overview of interviews conducted

Between October and November 2020 interviews were conducted with German and international experts to discuss interventions for diet change and/or food waste reduction through multilateral collaboration. The project team would like to thank all experts for their valuable inputs!

Name	First Name	Institution and role
Algodmani	Lujain	EAT, Chief Implementation Officer, Advisor to the Executive Chair
Ajena	Francesco	International Panel of Experts on Sustainable Food Systems (IPES-Food), Food Policy Advisor,
Springmann	Marco	Oxford Martin Programme on the Future of Food, University of Oxford; Senior Researcher on Environmental Sustainability and Public Health
Oenema	Stineke	Coordinator United Nations System Standing Committee on Nutrition (UNSCN), c/o Food and Agriculture Organization of the United Nations (FAO)
Goodwin	Liz	World Research Institute (WRI), Senior Fellow and Director, Food Loss and Waste
Podselver	Raphael	ProVeg International, Political Outreach
Candeal	Thomas	International Food Waste Coalition (IFWC)
Fleckenstein	Martina	WWF International, Global Policy Manager Food
Berthold	Ronja	European Vegetarian Union (EVU), Head of Public Affairs
Mues	Moritz	German Federal Chancellery, G7/G20 Sherpa Office
Wortmann	Kerstin	German Federal Ministry of the Environment, Nature Conservation and Nuclear Safety, Head of Division G III 4 (Food and Environment)
Schlaack	Susanne	German Federal Ministry of Food and Agriculture, Head of Division 622, World Food Affairs, Int. Food and Agricultural Organizations, Causes of forced migration
von Meyer	Heino	Ecologic Institute, Senior Policy Advisor. Former Head of the OECD Berlin Centre

Name	First Name	Institution and role
Niederhaus	Anke	Federal Ministry of Food and Agriculture, Head of Unit 216
Näumann	Susanne	Federal Ministry of Food and Agriculture, Unit 211
Schneider	Felicitas	Thünen Institut, contact person for the MACS-G20 Collaboration Initiative on Food Losses and Waste
Lange	Stefan	Thünen Institut

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