HAUT CONSEIL
pour le CLIMAT

ACCELERATING THE CLIMATE TRANSITION
WITH A LOW-CARBON, RESILIENT AND FAIR FOOD SYSTEM

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

Climate change is affecting agriculture through losses in productivity that propagate to the entire food system. Conversely, greenhouse gas emissions from the food system account for a significant proportion (22%) of France's carbon footprint. With a view to achieving net zero greenhouse gas emissions in France by 2050, the food system must meet a triple climate challenge: reduce the greenhouse gas emissions it generates as much as possible, increase carbon storage in agricultural soils, while preparing for a warmer climate of +2°C in the short term and possibly +4°C in the longer term, thereby protecting stakeholders, particularly the most vulnerable.

The adoption of low-carbon and resilient practices in agriculture and food systems is hampered by a number of barriers and obstacles. For example, changes in practices or models can generate costs for farmers, require investments in logistics or in the food processing industries, and can impact the incomes of those involved in the value chains if these costs are not offset by an increase in the valorisation of their products or by subsidies. The organisation of agricultural and agro-industrial systems, structured around a limited number of crops or animal breeds and a food supply that gives precedence to processed and animal products, creates 'lock-in' mechanisms, both on the agricultural side and on the food demand side.

Provided that the existing barriers are removed, numerous levers can be used in all components of the food system, i.e. land and water resource management, crop and livestock production, farming practices, processing and distribution chains, diets and food consumption habits, and waste at every stage. The greatest potential for mitigating greenhouse gas emissions in agriculture lies in increasing carbon storage in agricultural soils, reducing and optimising the use of mineral nitrogen fertilisers, managing livestock manure and reducing emissions linked to ruminant enteric fermentation. These changes require a high level of skills and involve taking risks. Other levers also need to be used downstream of agricultural production, such as reducing the consumption of emission-intensive food products so as to avoid imports of these products and the effects of carbon leakage at borders, and reducing the carbon footprint of food.

The relevance of the various levers must be assessed according to the co-benefits and conflicts with other dimensions: social (income and working conditions of farmers, especially livestock farmers, cost of food), economic (competitiveness, trade), environmental (biodiversity, water, soil) and consumer health-related (nutrition, pollution). Taking an overall approach, a 50% reduction in greenhouse gas emissions by the agricultural sector by 2050 is achievable, provided it is accompanied by a reduction of at least 30% in the consumption of animal products and a shift towards other sources of protein, support and guidance for stakeholders, and actions to strengthen the resilience of the food system, which is a prerequisite for achieving France’s climate goals. With more ambitious scenarios for all levers, including for food consumption and carbon storage in agricultural soils, it would be possible to get closer to net zero greenhouse gas emissions in the agricultural sector by 2050.

Current agricultural and food policies are not sufficiently used in support of climate policies in France. Only by coordinating policies on agriculture, food, public health, climate, and the environment will it be possible to maximise synergies, protect French farmers from a sharp rise in damages caused by climate change, minimise the costs of the transition and reduce the economic risks for food system stakeholders, while ensuring access to sustainable and healthy food for all.

AGRICULTURE AND FOOD PLAY A KEY ROLE IN ACHIEVING FRANCE'S CLIMATE GOALS. FOOD ACCOUNTS FOR 22% OF FRANCE'S CARBON FOOTPRINT. WITHIN THE FOOD SYSTEM, GREENHOUSE GAS EMISSIONS FROM AGRICULTURE HAVE FALLEN LESS THAN EMISSIONS IN OTHER SECTORS IN FRANCE AND LESS THAN ITS EUROPEAN NEIGHBOURS. ACCELERATING THE REDUCTION OF EMISSIONS FROM FOOD AND THE AGRICULTURAL SECTOR, WHILE SUPPORTING PRODUCERS AND THE FOOD INDUSTRY, AND PROTECTING AND IMPROVING THE DIETS AND HEALTH OF CONSUMERS, MEANS DEVELOPING A CLEAR OVERALL VISION OF A DECARBONISED FOOD SYSTEM.

Agriculture and food play a key role in achieving France's climate goals, particularly net zero greenhouse gas emissions by 2050. By 2050, most of France's residual greenhouse gas emissions are expected to be concentrated in the agricultural sector. These residual emissions will have to be offset by an increase in carbon storage in forests and agricultural soils. The sudden and unexpected decline in forest carbon sinks, as well as that of grassland areas, reduces the capacity to offset these residual emissions with carbon sinks, requiring greater efforts to reduce the sector's greenhouse gas emissions. Mitigation efforts in the agricultural sector must be part of a wider framework to reduce the carbon footprint of food in order to avoid carbon leakages at borders. A good understanding of the sources of emissions from the food system is necessary to steer actions.

The agricultural sector emits 77 $MtCO_2e$ per year, or 18% of France's greenhouse gas emissions in 2021. 85% of these emissions are from methane and nitrous oxide, which have a higher global warming potential than carbon dioxide (CO_2). A reduction in methane emissions could have a faster impact on global warming than a reduction in CO_2 emissions. The sector's greenhouse gas emissions fell by 13% between 1990 and 2021 in France.

- Direct emissions from livestock farming accounted for 46 $MtCO_2e$ in 2021, or 59% of emissions from agriculture. They were mainly due to enteric fermentation and manure management. Cattle accounted for 83%, followed by pigs and poultry. Livestock farming is also responsible for indirect emissions, resulting from the production of feed for livestock (crops, grassland). The decrease in emissions from livestock farming (-15%) between 1990 and 2021 was mainly due to a reduction in the size of the cattle herd linked to the sector's economic difficulties.

- Emissions from crops accounted for 21 $MtCO_2e$ in 2021, or 27% of emissions from the agricultural sector. They are mainly due to the use of mineral nitrogen fertilisers, organic fertilisers and manure inputs on pasture. The use of mineral nitrogen fertilisers is also responsible for indirect emissions during their synthesis. The decrease in crop emissions (-15%) between 1990 and 2021 is mainly due to a reduction in nitrogen fertilisation.

- Emissions associated with the use of machinery, engines and boilers account for 10 $MtCO_2e$, or 13% of agricultural emissions. The decrease in emissions linked to energy consumption by agricultural tractors, machinery and boilers was small (-4%).

- France has the highest agricultural emissions of all European Union (EU) Member States due to the size of its agricultural sector, and accounts for 17% of EU emissions from agriculture. The intensity per unit area of emissions from France’s agricultural sector is close to the EU average. Since 1990, EU emissions have fallen by 21%, although this is not necessarily due to directly targeted policies.

Since its introduction in 2015, France's National Low-Carbon Strategy (*Stratégie nationale bas carbone* SNBC) defines carbon budgets and indicative trajectories for all greenhouse gas emitting sectors, including agriculture. The agricultural sector met its first indicative carbon budget (2015-2018) and remains below the indicative level for its second carbon budget (2019-2023). These trends need to be qualified, however, as agriculture is the sector with the lowest emissions reduction target, and its decrease in emissions is mainly the result of socio-economic factors outside the scope of public action.

Agricultural land use (grassland and cropland), accounted for in the land use, land-use change and forestry sector of the national greenhouse gas inventory, adds 6 $MtCO_2e$ to agricultural emissions. Agricultural soils emit more than they store, although these emissions fell sharply between 1990 and 2021 (-66%).

- Cropland caused an estimated net annual loss of carbon of 8 $MtCO_2e$ (in 2021), resulting from the conversion of other land (particularly grassland and forests) into cropland. These emissions have fallen over the last thirty years.

- Grasslands accounted for an estimated net annual carbon storage of 1.3 $MtCO_2e$ (in 2021). Grassland, the area of which fell by 19% between 1990 and 2021, contributes increasingly less to carbon storage (81% fall in storage over the same period).

In total, agricultural activities (agriculture and agricultural land use) therefore emit 83 $MtCO_2e$ at national level. There is a high level of uncertainty at national level surrounding emissions from the 'agriculture' and 'land use' sectors of around 15% and 40% respectively.

France's food carbon footprint is estimated at 140 $MtCO_2e$, or 2.1 tCO2e per person, and accounts for 22% of France's overall carbon footprint. This footprint includes emissions from agricultural production and other components of the food system, as well as those generated outside France by production, processing and transport. France's food carbon footprint has fallen at roughly the same rate as emissions from agricultural production in France, i.e. 4% and 3% respectively, between 2010 and 2018.

- Imported emissions account for 46% of the food carbon footprint, with 52% from imports of food and drink destined directly for the consumer, and 48% from imports of raw materials and other intermediate products. The proportion of imported emissions increased between 2010 and 2018.

- Agricultural production (in France and in export countries) accounts for 60% of the food carbon footprint.

- Processing emissions account for between 6% and 18% of the footprint, depending on the methods used.

- Emissions from retail and out-of-home catering represent 12% of the footprint.

- Emissions from the transport of food products account for between 6% and 14% of the footprint, depending on the methods used. Road transport is responsible for 83% of food transport emissions.

- Animal products are responsible for the majority of the food carbon footprint (61%), followed by drinks (15%).

Losses and waste generate 15 $MtCO_2e$ of greenhouse gas emissions, are spread across all components of the food system and depend on the type of food. Every year in France, almost 20% of food is thrown away, or 150 kg per person per year.

THE IMPACTS OF CLIMATE CHANGE ON AGRICULTURAL PRODUCTION HAVE BEEN SIGNIFICANT FOR SEVERAL DECADES AND ARE INTENSIFYING. ADAPTATION IS NECESSARY TO PROTECT FARMERS AND LIVESTOCK FARMERS, LIMIT DAMAGES AND MAINTAIN A STABLE FOOD SUPPLY. ON A GLOBAL SCALE, CLIMATE CHANGE IS A RISK FACTOR FOR FOOD SECURITY THAT INCREASES WITH THE LEVEL OF WARMING.

The climatic factors that impact agriculture, resulting from acute and chronic phenomena, increase with the level of warming. Climate change is affecting agricultural production with major crop losses and reduced feed resources for livestock. In France, every fraction of a degree of global warming means more intense extreme heat waves and greater variability in the water cycle through more extreme rainfall and an increase in the recurrence, duration and extent of soil drought. Climate change has reduced the growth of total worldwide agriculture productivity by around 21% since 1961.

Changes in rainfall and its variability are affecting the availability of water resources and, for land surfaces, are leading to a deterioration in the quality of freshwater resources and an increase in the risk of flooding in certain areas. The increase in the seasonal imbalance between water supply and demand can be seen in the water stress of rain-fed crops, in the irrigation needs of irrigated crops and in the shifts in the grazing season.

In France, the consequences of climate change on crop and livestock yields are already visible and will continue to grow. Heat stress leads to difficulties for feeding the herds, and heat has a negative impact on animal health, nutrition, behaviour, animal welfare, productivity and product quality. Droughts, such as those in 2003 and 2022, have an impact on many types of crops in the form of reduced yields. Floods, such as those in 2010, 2016 and 2023, cause severe damages to agriculture and livestock farming in France with impacts on crops, loss of equipment, death of animals, degradation of soil properties and economic losses.

With global warming of around +2°C by 2050, without further adaptation, crops in France would be exposed to additional yield losses, particularly summer crops such as maize. Fodder production for grass-fed herds is likely to increase in the coldest areas, while it is likely to fall in some lowland regions and in the Southern Alps because of the heat and scarcity of water.

Agricultural activities currently adapt to climate change adverse effects reactively, but not in a transformative way to ensure their resilience in the face of the multiple impacts that will continue to intensify.

- Adapting to global warming means earlier harvesting of grapes and crops, and earlier sowing dates, changes in crop varieties grown to avoid summer drought and enable earlier harvesting, increased use of varietal mixes in crops for better yield expectancy in a more variable climate, changes in vine and fruit tree pruning and wine-making practices, and an increase in winter grazing and fodder storage to offset the increased risks of summer drought.

- Production losses during spring droughts and wet autumns have highlighted the undue level of preparation required to manage this type of event, which is more frequent in a warming climate, and have revealed vulnerabilities in the French agricultural model. The threshold of €2.6bn in drought-related damage would be exceeded on average every 10 years if all farms in mainland France were insured. The gradual reduction in soil moisture in a warmer climate, longer dry periods and high levels of uncertainty over winter rainfall prompt more far-reaching changes to strengthen the resilience of farming activities.

Climate change can also create opportunities for agriculture. Rising temperatures partly reduce certain risks to crops (e.g. frost, cold temperatures in winter, fungal diseases, etc.), improve production conditions for certain crops (e.g. duration of sunlight, atmospheric concentration of CO_2, possibility of earlier sowing, increase in the number of days available for certain actions, etc.), increase the farming area for certain crops, enable the development of crops that have a greater capacity to cope with water shortages and heat waves with new varieties or new species (sorghum).

- Increasingly complex and difficult to manage risks are threatening the resilience of the food system and food security.

- Extreme events lead to rapid and sharp falls in production worldwide. The losses in agricultural production caused by climatic disasters cannot always be offset by production from regions not affected by these events, storage and trade. This possibility increases with the level of global warming and could compromise the stability of regional or global food supplies.

- The acute and chronic negative effects of climate change on food production can occur in conjunction with other impacts, such as zoonoses, pandemics and armed conflicts, and lead to food security risks. The food system's dependence on fossil fuels is a factor of instability and vulnerability, as shown by the impact of rising fertiliser prices on agricultural prices.

- The recurrence of droughts and floods accentuates the need to strengthen concerted governance over the use of water resources by involving all stakeholders in order to avoid conflicts of use and limit the risks of maladaptation.

The need to adapt agricultural systems in mainland and overseas France will be all the more limited if the level of global warming is rapidly stabilised. Strengthening the resilience of agricultural production in the face of climate change is essential if it is to contribute to achieving net zero greenhouse gas emissions in France.

THERE ARE MANY OPTIONS FOR MITIGATING AND ADAPTING TO CLIMATE CHANGE IN THE FOOD SYSTEM, BUT ITS STRUCTURE AND OPERATION ARE RIGID, HINDER THE ADOPTION OF NEW PRACTICES AND BLOCK THE POSSIBILITY OF TRANSFORMATIONAL CHANGE. AMBITIOUS REDUCTIONS IN GREENHOUSE GAS EMISSIONS AND PROTECTIVE ADAPTATION REQUIRE CONCERTED PLANNING AND INVESTMENT, WHICH CAN ONLY BE ACHIEVED THROUGH FAR-REACHING CHANGES TO AGRI-FOOD SYSTEMS.

The food system, whose structure has been in place since the middle of the 20th century, faces numerous barriers that slow down or hinder the adoption of low-carbon and sustainable agricultural practices and models. These include, for example, the structure of agricultural and agro-industrial models around a restricted number of crops and animal breeds and the specialisation of production areas, or costs and risks associated with changing practices and transformative systems, which can have an impact on farmers' incomes. These obstacles and barriers can be overcome by far-reaching changes to the food system:

- Improving the incomes of farmers and livestock farmers who transform their
- Redirecting support schemes towards low-carbon farming practices that are adapted to climate change.
- Training the stakeholders of the food system to acquire the skills and knowledge needed
- Strengthening farm advisers’ training on

- Increasing the involvement of players all along the value chains and local and regional authorities in the governance of the agri-food system, in order to provide greater support for changes in practices and create opportunities for new agricultural productions, involving processing, storage, transport, distribution and catering stakeholders.

- Increasing research and innovation in support of the climate transition.

AGRICULTURE

Several opportunities are helping to transform agriculture: generational change, the growing interest of young farmers in sustainable production methods, the growing awareness of environmental and climate issues among farmers, and the development of new skills.

Provided that the associated obstacles and barriers are removed, there are many agronomic practices that can be used to reduce greenhouse gas emissions and adapt agriculture.

- The main options for adaptation fall within climate-smart agriculture and agroecology. They involve selecting and using plant varieties or species that are more tolerant of drought and high temperatures, selecting heat-tolerant animal breeds, diversifying crops and varietal choices to reduce risks at farm level, storing fodder and using pasture to ensure food resources for grazing herds, managing water at catchment level in a sparing and inclusive way, increasing the organic matter content of soils to improve infiltration and storage of water, planting trees to provide shade for livestock (which contributes to carbon storage), limiting wind and evapotranspiration, and protecting crops from high temperatures.

- There are major risks of maladaptation that must be anticipated such as the massive use of irrigation in areas where water supplies are expected to decrease. However, criteria can be defined to determine the size of replacement reservoirs to cope with the future impacts of climate change, in line with the transformation of the farming systems concerned, in order to optimise water use according to acceptable volumes, in particular, to sustain the viability of aquatic environments.

- Agricultural practices can be implemented to reduce greenhouse gas emissions from farming without having a negative impact on yields. These include reducing and optimising the use of mineral nitrogen fertilisers, reducing nitrogen losses when spreading manure, the use of leguminous plants, herd feeding and management practices, genetic selection of low-emission herds, managing livestock manure, and reducing and optimising the use of fossil fuels.

- Practices such as agroforestry, planting and maintaining hedgerows and grassland, growing intermediate crops and using organic fertilisers help to store carbon in agricultural soils and biomass. As carbon storage is reversible, its long-term nature depends on the duration of the storage practices. The storage of carbon stocks in soil is essential and requires preventing the reversal of permanent grasslands and the drainage of wetlands.

- Agriculture can also contribute to energy production (e.g. biofuels, biogas, agrivoltaics) but, depending on the conditions chosen, this can give rise to land-use conflicts and impact agricultural production for food purposes.

- By combining all these mitigation measures, and without taking adaptation needs into account, the theoretical potential for reducing emissions would be around 27-30 $MtCO_2e$ per year from 2030 according to INRAE (France's National Research Institute for Agriculture, Food and Environment), and could rise to 85 $MtCO_2e$ in the longer term under the most ambitious deployment hypothesis.

- Beyond changes in practices alone, agroecological systems, particularly organic ones, emit less greenhouse gas per hectare than conventional systems, but can emit more per kilogram of food produced. These systems are more beneficial for carbon storage, the protection of biodiversity, natural resources and animal welfare, and provide more ecosystem services than conventional systems, making them, in general, better adapted to future climate change.

- The ongoing regional consultations are opportunities for a transition towards low-carbon and adapted agricultural and food systems, and for greater conservation of freshwater and soil resources.

FOOD

Reducing the carbon footprint of food, beyond reducing emissions from agriculture, means decarbonising the entire food system, adopting a healthy diet with less animal products, and reducing imported emissions and waste as much as possible. In addition, this means supporting the adoption of low-carbon farming practices that are adapted to climate change by reducing negative social and environmental external impacts. Levers need to be activated at every stage of the food system.

- The agri-food industries can reduce their energy consumption and take action on their supply of agricultural raw materials, to avoid imported emissions, and offer consumers low-carbon, healthy and affordable food.

- Several avenues need to be pursued jointly to reduce emissions from the transport of food products: reducing the distances travelled by relocating and optimising the supply chain, electrifying road freight and improving the energy efficiency of vehicles, and shifting road freight to lower-emission modes of transport.

- The consumption of low-carbon, seasonal and sustainably produced products needs to be encouraged.

- Losses and waste need to be limited at every stage of the food system.

- Substituting plant protein for animal protein in the diet is an essential lever for reducing greenhouse gas emissions and generates co-benefits for human health.

SCENARIOS

Many things need to be put in place to achieve the climate goals, and many levers exist to do more and do it more quickly. Scenario-based foresight exercices make it easier to put together a set of decarbonisation options in order to meet projections up to 2050.

- The emission trajectory scenarios up to 2030 used as part of the preparation for the 3rd SNBC, incorporate numerous technical levers and are based on assumptions about food production and meat consumption to achieve a target of -22% compared with 2015. Given the proximity of the target (in 7 years' time) and the observed fall in emissions between 2015 and 2021 (only -7.9%), achieving the 2030 target requires an ambitious, rapid and systemic approach.

- Several scenarios show that it would be possible to project a 50% reduction in greenhouse gas emissions from the agricultural sector by 2050 compared with 2020, or even more, by integrating carbon storage into agricultural soils based on various assumptions. On the basis of theoretical reductions, achieving net zero greenhouse gas emissions as a target for agriculture (production and agricultural soils) by 2050 may be attainable in France and should be explored.

- Scenarios for reducing agricultural emissions by 50% by 2050 include a reduction in animal protein consumption of at least 30%, a reduction in the proportion of mineral nitrogen used for crops by 40% to 100%, and the development of agro-ecology and organic farming to reach 50% of utilised agricultural land.

THE TRANSFORMATION OF THE FRENCH AGRI-FOOD SYSTEM, WHICH IS ESSENTIAL TO FACING THE CHALLENGES OF CLIMATE CHANGE, WILL REQUIRE AGRICULTURAL POLICIES TO BE CONSISTENT WITH THE GOALS OF CLIMATE POLICIES AS WELL AS THE NUTRITION AND HEALTH GOALS OF FOOD POLICIES. IT RELIES ON OPPORTUNITIES FOR SYNERGIES LINKED TO AGRO-ECOLOGY AND REQUIRES A NEW SHARED GOVERNANCE OF THESE GOALS IN ORDER TO REDEFINE VALUE SHARING BETWEEN ALL STAKEHOLDERS IN THE SYSTEM.

Three structuring policies for agriculture and food, currently being drawn up or likely to be updated in the short term, include a climate goal or line of action: the Pact and Orientation Law for the renewal of generations in agriculture, the National Strategic Plan of the Common Agricultural Policy and the National Strategy for Food, Nutrition and Climate. Some of these policies need to be rolled out at regional and local level, and sometimes are through local food projects. The deep-rooted local nature of agriculture means that practices must be consistent with the reality of the local area, and it encourages the adoption of participatory methods for drawing up local plans for food, water and land use.

AGRICULTURE

The Pact and Orientation Law for the renewal of generations in agriculture provide an opportunity, through a clear vision of low-carbon French agriculture adapted to climate change, to draw upon many tools and remove some of the barriers. Once they have stabilised, they can be assessed in the light of climate issues.

The Common Agricultural Policy and France's National Strategic Plan are not designed or scaled to enable farmers and livestock farmers to reduce greenhouse gas emissions and adapt to climate change. They are still underused for the low-carbon transition and adaptation of the agricultural and land use sectors. They do, however, contain a number of provisions that can be used to help the climate.

- Budget: France estimates the European budget for the National Strategic Plan dedicated to climate-friendly measures at €19bn, or 42% of the European contribution. Other estimates suggest a much smaller contribution to climate action of between €3bn and €12bn, depending on the scope.
- Levers used: some options identified by the French General Secretariat for Ecological Planning as potentially effective for mitigation and adaptation in the agricultural sector are not used in the National Strategic Plan at this stage. In particular, there are no measures targeting the levers identified for reducing emissions from ruminant enteric fermentation.
- Effectiveness: the National Strategic Plan helps to remove certain barriers, such as the need for investment, but the measures proposed are not ambitious enough to bring about the transformations needed for the low-carbon transition and adaptation to climate change. They have relatively small budgets, are not very attractive or do not encourage changes in practices.
- Impact on emissions: excluding emissions linked to energy use, greenhouse gas emissions from agriculture could fall between 9% and 11% with the implementation of the National Strategic Plan. Although the National Strategic Plan is the main source of public funding for agriculture, it cannot achieve the goals of the 2nd SNBC, and even less those of the future 3rd SNBC. Furthermore, the other measures implemented outside the National Strategic Plan are not enough to close this gap.
- Adaptation: on the whole, adaptation issues are poorly covered in the National Strategic Plan and certain measures implemented may generate risks of maladaptation depending on how they are rolled out. The forthcoming review of the National Strategic Plan could be an opportunity to better support a transformation towards adaptation that really protects agriculture in the face of the impacts of future climate change.
- Work to identify adaptation needs has begun in a number of agricultural value chains, highlighting the need for regulatory changes, financial support and tools to assess vulnerabilities specific to each sector. The transformation of agricultural policies provides an opportunity to meet these needs.

FOOD

Current food policies focus mainly on consumer information, even though this is only one of the levers for changing food consumption habits. Moreover, the climate aspect is still not given much attention.

Food policies remain poorly financed compared with funding for the agricultural sector. In addition, few public actions have been taken to target the most influential stakeholders in the food systems, such as the agri-food industries, distributors and commercial catering, input producers, importers or finance. Public action therefore remains primarily confined to both ends of the food system: farmers and consumers.

The National Strategy for Food, Nutrition and Climate provides an opportunity to transform both the food supply and the food environment to encourage habits and practices that are compatible with the low-carbon transition and adaptation.

Reducing the consumption of animal products will only be possible if the supply, processing, mass distribution and out-of-home catering themselves uses less animal products, so as to avoid the efforts made by livestock farms in France being cancelled out by imports.

Public authorities can also act via a number of channels to create an economic environment that encourages low-carbon food choices while ensuring access for all, and in particular low-income households, to healthy and sustainable food.

Trade between the EU and the rest of the world can result in carbon leakage to third countries. The reductions in local emissions made possible by European environmental and climate policy are liable to give rise, at least in part, to an increase in emissions abroad. There are several ways of reducing these leakage effects, some of which involve trade policy measures such as attaching conditions to agreements opening up the import of agricultural and food products, or on due diligence. However, their impact may be limited. Therefore, efforts also need to be made to change consumer preferences, reduce mitigation costs for farmers, and pursue ambitious multilateral environmental agreements.

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