COMPASSION in world farming

BREAKING THE TABOO: WHY DIETS MUST CHANGE TO TACKLE CLIMATE EMERGENCY

Food produces one third of greenhouse gas emissions – 75% of agriculture's emissions are from livestock

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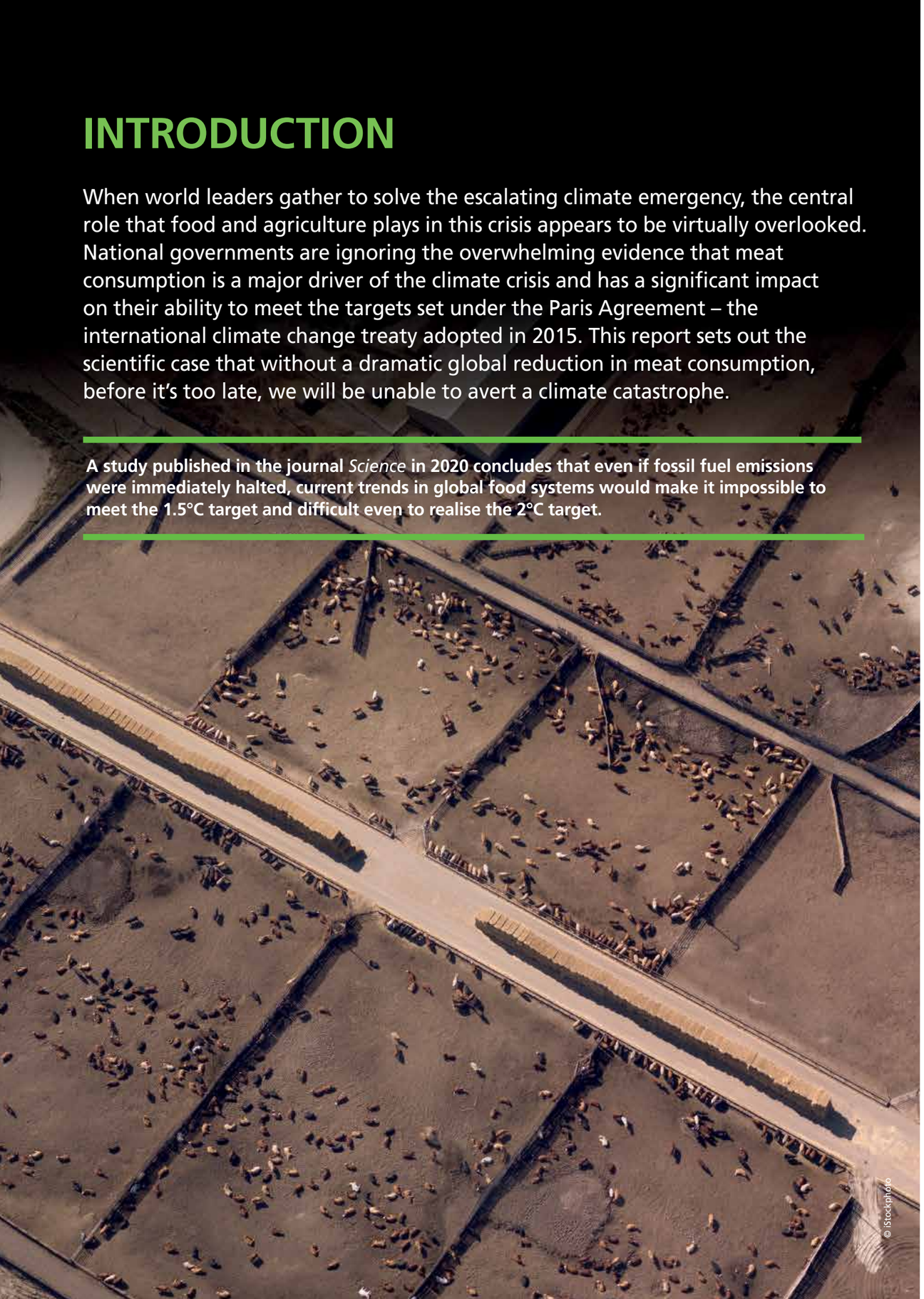
INTRODUCTION

When world leaders gather to solve the escalating climate emergency, the central role that food and agriculture plays in this crisis appears to be virtually overlooked. National governments are ignoring the overwhelming evidence that meat consumption is a major driver of the climate crisis and has a significant impact on their ability to meet the targets set under the Paris Agreement – the international climate change treaty adopted in 2015. This report sets out the scientific case that without a dramatic global reduction in meat consumption, before it's too late, we will be unable to avert a climate catastrophe.

A study published in the journal *Science* in 2020 concludes that even if fossil fuel emissions were immediately halted, current trends in global food systems would make it impossible to meet the 1.5°C target and difficult even to realise the 2°C target.



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EXECUTIVE SUMMARY

- The livestock sector is responsible for 14.5% of global greenhouse gas (GHG) emissions. Food is responsible for between one quarter and one third of all greenhouse gas (GHG) emissions – 75% of agriculture's emissions are from livestock.[6,7]
- To meet the Paris Agreement targets, all sectors need to reduce their emissions. However, research shows that on a business-as-usual (BAU) basis, emissions from food and agriculture will increase substantially and could make it very difficult to reach the Paris Agreement targets.
- Supply-side measures, such as improved manure management and technological emission reduction innovations, will not on their own be sufficient to meet the Paris Agreement targets. Studies show that a substantial decrease in global meat and dairy production and consumption is needed to achieve a sufficient reduction in emissions from the food and farming sectors. Dietary shifts could contribute up to a fifth of the mitigation needed to meet the Paris Agreement below 2°C target.[1]
- In light of the livestock sector's capacity to put the Paris Agreement targets out of reach while recognising that reductions in meat and dairy consumption can help meet those targets, policy-makers must give much greater attention to the need for such reductions.
- In considering where reductions in livestock production should fall, a cohesive approach must be taken which, as well as GHG emissions, considers food security, resource efficiency, biodiversity loss, deforestation, detrimental impacts on soils and water, and animal welfare, as well as the use of antimicrobials and the risk of future pandemics. The policies adopted to tackle livestock's GHG emissions must not undermine these other key considerations.
- Considered in the round, the main reductions should be in the industrial monogastric and feedlot cattle sectors with most meat and dairy coming from ruminants grazing on well-managed biodiverse grassland. This said, the amount of land devoted to pasture-based livestock must be reduced as it needs to be balanced with that required to support natural climate solutions such as restoration of forests and peatland.
- Governments must encourage and incentivise reduced levels of production and consumption of meat and dairy (other than in countries with low levels of consumption). It is reckless and irresponsible for governments to continue to ignore the livestock sector's impact on climate change and the ability of dietary shifts to play a significant part in meeting the Paris Agreement targets.

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AGRICULTURE EMISSIONS TO SOAR WITHOUT ACTION

Energy, fossil fuels, transport and industry tend to dominate climate discussions and actions. The food system receives much less attention, even though it generates between 26-37% of GHG emissions.[2, 3]

Data from the UN Food and Agriculture Organization (FAO) show that livestock are responsible for 14.5% of global GHG emissions.[4] A recent paper suggests the figure is even higher at 16.5%.[5]

Around 75% of agriculture's emissions are produced by livestock, including the production of feed for the animals and the associated land use changes.[6, 7] A 2021 study calculates that GHG emissions from animal-based foods are much higher than those of plant-based foods.[8] In the European Union (EU) almost 70% of agriculture's emissions are from livestock.[9]

The livestock sector is unusual as most of its emissions are methane and nitrous oxide rather than carbon dioxide. Table 1 shows the contribution of these gases to livestock's overall emissions.

TABLE 1: Livestock sector's emissions by gases

Greenhouse gas	Percentage contribution to livestock sector's overall GHG emissions
Methane CH_4	44%
Nitrous oxide N_20	29%
Carbon dioxide CO_2	27%

Source: UN Food and Agriculture Organization

The world needs to **halve emissions over the next decade and reach net zero emissions by the middle of the century** if we are to limit global temperature rises to 1.5°C.[10] The food and farming sectors will need to play their part in realising this ambition.

However, food and agriculture's emissions are travelling in the wrong direction. The Paris Agreement aim is to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels. To meet the Paris Agreement targets, all sectors need to reduce their emissions. However, research shows that on a business-as-usual (BAU) basis, emissions from food and agriculture will **increase substantially** and could make it very difficult to reach the Paris targets.[11, 12, 13]

Industry-led tweaks will not be enough. Mitigation techniques (such as improved manure management) and productivity improvements can reduce emissions, though care must be taken to ensure that any technique used does not harm animal welfare standards.

However, supply-side measures will be insufficient on their own to achieve an adequate reduction in farming's emissions.[14, 15, 16] In the EU, for example, the European Commission's Joint Research Centre states that technological emission reduction measures might be able to reduce emissions from EU livestock by 15-19%.[17] Yet, the 2018 RISE Foundation report says that EU livestock-related emissions must be reduced by 21% by 2030 and 74% by 2050 for the livestock sector to play its part in meeting the EU's previous emissions reduction targets which were lower than the EU's new target of net-zero emissions by 2050.[18]

The Technical Annex to the report of the EU Taxonomy Technical Expert Group on Sustainable Finance examines several technical measures for mitigating livestock emissions but recognises that on their own they will not be sufficient to meet the EU's net-zero target.[19] It states: "It is important to note that for absolute emissions from agriculture to continue decreasing beyond a certain point and to move towards net-zero targets by mid-century, reduced emissions intensity will need to be coupled as soon as possible with commensurate changes in consumption patterns and overall reduced per-capita consumption of livestock products, especially beef, lamb and dairy products. This implies both societal changes in terms of changing diets and reducing food waste, as well as structural transformations in the agricultural sector. Significant and coordinated policy efforts will be required to manage both behavioural changes on the side of consumers and to incentivise and manage structural change in the agri-food supply chain".

Food consumption patterns must change to meet climate targets

Research shows that food consumption patterns will have to change if we are to meet the Paris Agreement climate targets.[20, 21] Many studies show that reducing consumption of meat and dairy leads to substantial reductions in GHG emissions.[22, 23] This is because animal products generally generate substantially higher emissions per unit of nutrition produced than plant-based foods.[24] See Table 2.

Industrial chicken production is inefficient and causes very poor animal welfare

TABLE 2: GHG emissions generated by various foods

Food item	Carbon-eq emissions g/kcal	Carbon-eq emissions g/serving
Pulses	0.02	1.9
Wheat	0.06	5.2
Fruits	0.12	7.75
Rice	0.14	14
Vegetables	0.68	14
Eggs	0.59	24
Poultry	1.3	52
Pork	1.6	61
Dairy	0.52	74
Beef	5.6	330

Source: Springmann *et al* (2016)

A study published in the journal *Science* in 2020 concludes that even if fossil fuel emissions were immediately halted, current trends in global food systems would make it impossible to meet the 1.5°C target and difficult even to realise the 2°C target.[25] It shows that moving to plant-rich diets containing only moderate amounts of meat could reduce emissions from food systems by 47% compared with BAU.

The Intergovernmental Panel on Climate Change recognises plant-based diets as a major opportunity for mitigating climate change. It states that there is "significant potential mitigation (high confidence) arising from the adoption of diets in line with dietary recommendations made on the basis of health. These are broadly similar across most countries. These are typically capped at the number of calories and higher in plant-based foods, such as vegetables, fruits, whole grains, legumes, nuts and seeds, and lower in animal-sourced foods, fats and sugar. Such diets have the potential to be both more sustainable and healthier than alternative diets".[26]

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"Producing animal-sourced food (e.g. meat and dairy) emits larger amount of GHGs than growing crops, especially in intensive, industrial livestock systems... Changing diets towards a lower share of animal-sourced food, once implemented at scale, reduces the need to raise livestock and changes crop production from animal feed to human food. This reduces the need for agricultural land compared to present and thus generates changes in the current food system. From field to consumer this would reduce overall GHG emissions."

Intergovernmental Panel on Climate Change, 2019. Climate Change and Land Use

Research published in *Nature* shows that globally, BAU in food production and consumption will lead to an 87% increase in GHG emissions by 2050 (compared with 2010).[27] The study reports that only dietary changes towards more plant-based (flexitarian) diets could reduce food-related GHG emissions in 2050 to below their current level. An International Monetary Fund working paper emphasises that reduced consumption of livestock products is needed if we are to meet our climate goals.[28]

Springmann *et al* (2016) calculate that on a BAU basis, food-related GHG emissions will by 2050 produce 52% of the maximum emissions that can be produced if we are to limit the global temperature increase to below 2°C.[29] Harwatt *et al* (2019) report that without action, the livestock sector could by 2030 take between 37% and 49% of the GHG emissions budget allowable under the 2°C and 1.5°C targets, respectively.[30, 31]

Springmann *et al* (2016) calculate that a healthy global diet based on WHO/FAO expert consultations would produce 29% fewer emissions in 2050 than a BAU diet. The healthy global diet includes a maximum of 43g of red meat per person per day. The authors say that the emission reductions in the healthy global diet are "largely attributable to reduced red meat consumption". However, it is clear from the study that only vegetarian and vegan diets can reduce food-related GHG emissions in 2050 below the 2005-07 levels.

A 2020 FAO report compares current dietary patterns with four healthy alternatives, each involving less meat consumption: flexitarian, pescatarian, vegetarian and vegan.[32] It states: "Under current food consumption patterns, more than three-quarters of the diet-related GHG emissions (77%) were associated with animal-sourced foods consumed worldwide". It adds that in 2030, adoption of "any of the four alternative healthy diet patterns worldwide would reduce projected diet-related GHG emissions by 41–74%".

The International Fund for Agricultural Development (IFAD) states: "The foundation of a resilient food system is a sustainable and healthy diet. No agricultural system can be climate-smart enough to feed the world with a climate-crazy diet".[33]

A letter signed by 60 scientists was sent to City Mayors in 2019. It states: "We cannot effectively address the climate crisis without tackling the huge impact that industrial meat production and consumption has on our planet".[34]

Dietary shifts could contribute up to a fifth of the mitigation needed to meet the Paris Agreement below 2°C target.[35]

Failure by the livestock sector to reduce its emissions will put pressure on other sectors to shoulder more than their share of emission reductions and will reduce the feasibility of meeting the Paris Agreement targets.

In November 2019, a statement entitled *World Scientists' Warning of a Climate Emergency*, was signed by over 11,000 scientists. It suggests six critical steps to lessen the worst effects of climate change. One of these steps states: "Eating mostly plant-based foods while reducing the global consumption of animal products… can improve human health and significantly lower GHG emissions. Moreover, this will free up croplands for growing much needed human plant food instead of livestock feed, while releasing some grazing land to support natural climate solutions".[36]

In the UK the Climate Change Committee (CCC) was established by legislation. It has called for "a 20% shift away from all meat by 2030, rising to 35% by 2050, and a 20% shift from dairy products by 2030". The CCC refers to this as a "priority recommendation".[37]

Shifts towards more plant-based diets would also produce substantial health benefits. The World Economic Forum states: "Reducing meat consumption would be good for nature and the climate. In a growing number of countries, it would be good for people as well, as overconsumption of meat could be leading to worse health outcomes".[38] The FAO report referred to above states that changing from current diets to any of the four alternative healthy diets, which include less meat and dairy, would reduce global diet-related health costs by 2030 by up to a staggering 95%.

Regenerative agriculture can reduce emissions and store carbon. Regenerative agriculture, agroecology, agroforestry and organic farming minimise the use of chemical fertilisers, the production and application of which involve substantial emissions of CO_2 and nitrous oxide. Such regenerative systems can also sequester carbon in soils and trees. Independent audits of farms in the US and South Africa show that well managed grazing of cattle on pasture can sequester substantial amounts of carbon.[39, 40]

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Reducing meat production and consumption: should the focus be on cows or chickens? Ruminants vs monogastrics?

Climate change cannot be considered in isolation from other vital policy objectives

Care must be taken that measures aimed at reducing GHG emissions do not undermine other vital policy areas such as food security, the avoidance of land-use change, the availability of plentiful soil, water and biodiversity, development goals such as equity as well as animal welfare. An FAO report on climate change emphasises that all these factors need to be assessed and integrated as part of livestock sector policies.[41] Global Food Security, a UK cross-Government programme, states: "Focusing solely on GHG emissions instead of wider metrics of sustainability could result in the loss of ecosystems and greater social inequality".[42] There is growing recognition that the adoption of nature-based solutions will help promote the synergies between tackling climate change and other global challenges such as reversing biodiversity loss.[43]

Some argue that the reduction in livestock production should be made in ruminants (cows, sheep and other animals who have many stomachs) as they have higher GHG emissions than monogastrics (for example poultry and pigs, who only have one stomach). However, farming industrial pigs and poultry (and feedlot cattle) produces a wide range of other harms:

- their inefficient use of human-edible cereals erodes food security,[44, 45] while extensive cattle and sheep enhance food security by converting inedible materials into food we can eat;
- their demand for cereals fuels the intensification of crop production. This, with its use of monocultures and agro-chemicals, has led to biodiversity loss,[46, 47] soil degradation,[48, 49] overuse and pollution of water,[50] and air pollution[51];
- their need for soy contributes to deforestation in South America which releases huge amounts of stored carbon into the atmosphere;
- the crowded, stressful conditions of industrial pig and poultry production lead to high use of antimicrobials[52] and could lead to future pandemics;[53] the last pandemic before COVID-19 was the 2009 swine flu pandemic;
- the intensive pig and poultry sectors have very low animal welfare standards.

Pig and poultry production is not free of GHG emissions

Some appear to assume that pigs and poultry are emissions-free. But this is not so:

- the manufacture of the fertilisers used to grow cereals for animal feed entails the emission of large amounts of CO_2[54];
- the application of these fertilisers to the land involves substantial emissions of nitrous oxide[55], the most aggressive greenhouse gas;
- soy production leads to deforestation which results in the release of huge quantities of stored carbon.[56, 57]

In summary, the fact that ruminants produce more GHG emissions per unit of meat produced than pigs and poultry is crucial. However, it does not follow that meat production should switch from ruminants to monogastrics as this would result in detrimental impacts on food security, biodiversity, use of arable land, deforestation, antimicrobial resistance, animal welfare and the quality of soil, water and air. The best response to ruminant GHG emissions – while at the same time ensuring that other key factors are not undermined – is to substantially reduce global meat consumption (including ruminant meat), but for the bulk of meat production to be extensive ruminants, as industrial pig and poultry production is responsible for a very wide range of harms.

It should be noted that all the concerns set out above regarding intensive monogastric production also apply to intensive ruminants, such as those kept in feedlots. It is only extensive grass-fed ruminants who can, when well-managed, produce benefits as regards food security, impact on natural resources, low disease levels and use of antimicrobials, and animal welfare. Good grassland systems do not feed grain to the animals and minimise the use of chemical fertilisers.[58] In such farms the animals are fed on grass, crop residues and root crops grown on the farm. Soil fertility and the nutritional quality of the grass are built through animal manure, the ability of the roots of grasses to collect minerals from deep in the soil and the inclusion in the grass of herbs, wildflowers and protein-rich legumes such as clover.

This said, while the bulk of reductions in livestock production should be made in the monogastrics and feedlot cattle sectors, the amount of land devoted to pasture-based livestock production must be reduced as it needs to be balanced with that required to support natural climate solutions such as restoration of forests and peatland.[59]

Reducing meat and dairy consumption is not only essential to meet the Paris Agreement climate targets but would also generate many co-benefits

The Planetary Health Diet proposed by the EAT-Lancet report recommends per capita consumption of no more than an average of 300g of red meat/poultry and 200g of fish per week for a diet that is both healthy and environmentally sustainable. This would enable increased consumption of humanely and regeneratively produced animal-source foods in some countries and regions, and require substantial reductions amongst high consuming populations in accordance with healthy dietary guidelines.

Studies show that reducing global meat consumption would produce multiple benefits in the form of reduced use of resources and a decrease in environmental degradation. In particular, a decrease in the consumption of meat and dairy would lead to reduced use of arable land, freshwater, energy and pesticides as well as reduced nitrogen and phosphorus pollution, deforestation and soil erosion.[60, 61, 62] In addition, reduced meat consumption would:

- help feed the growing world population, as a greater proportion of crops would be used for direct human consumption which is much more resource-efficient;
- allow cropland to be farmed less intensively so enabling the environment to be restored and birds, pollinators and insects to thrive once again;
- enable us to halt the expansion of cropland (to grow crops for animal feed) and pasture for cattle into forests and other fragile ecosystems;
- reduce pressures on wildlife as habitat destruction could be reversed;
- make it possible to meet the Paris Agreement climate targets;
- reduce the risk of future pandemics that could arise due to (i) keeping animals in intensive conditions and (ii) the expansion of pastures and cropland for animal feed into wildlife habitats which increases the risk of pathogen spillover;
- reduce the incidence of heart disease and certain cancers (this applies to reduced consumption of red and processed meat);
- help tackle antimicrobial resistance;
- enable animals to be farmed extensively to high welfare standards.

Research funded by the FAO shows the great benefits of avoiding a BAU increase in food production and the substantial dangers of failing to do so.[63] It compares:

1. A base year comprising mean values for the years 2005-2009;
2. A reference scenario based on FAO projections for food production and demand in 2050;
3. A scenario in which in 2050 no human-edible crops are used as animal feed (a 'food not feed' scenario). In this scenario animals are fed only from grassland and by-products from food production. Crucially there is no expansion of grassland.

Food availability for people does not suffer in the 'food not feed' scenario; energy supply per capita increases and protein supply per capita increases very slightly compared with the base period. However, the consumption of meat, milk, fish and eggs is reduced by 53% compared with the 2005-2009 base year.

The substantial environmental benefits that arise from adopting the 'food not feed' strategy are set out in Table 3. The 'reference scenario' column (BAU in 2050) shows there would be substantial increases in all production inputs and detrimental environmental impacts (except deforestation) compared with the 2005-2009 base period. However, the last two columns show that a 53% reduction in the consumption of livestock products would lead to major reductions in production inputs and environmental impacts compared with both BAU in 2050 and (except in freshwater use for irrigation) the base year of 2005-2009.

TABLE 3: Comparison of inputs and environmental outcomes between base year, 2050 reference year and 'food not feed' strategy (the latter leading to a 53% reduction in consumption of livestock products and fish)

Production inputs and environmental outcomes	Base year (mean values 2005-2009)	Reference scenario: FAO projections for 2050 i.e. Business-as-usual	Food not feed strategy in 2050 i.e. 53% reduction in consumption of livestock products	% reduction achieved by 53% reduction in consumption of livestock products & fish in 2050 compared with reference scenario	% reduction achieved by 53% reduction in consumption of livestock products & fish in 2050 compared with base year 2005-09
Arable land use: billion hectares	1.54	1.63	1.20	26%	22.1%
GHG emissions: Gt CO_2-eq	11.0	12.8	10.4	18%	5.5%
Freshwater use irrigation): km^3	1371	2178	1718	21%	+ 25.3% (i.e. there is an increase)
N-surplus: million tonnes N	87.9	121.8	65.2	46%	25.8%
P-surplus: million tonnes P	47.2	64.0	38.4	40%	18.6%
Non-renewable energy use: exajoules	22.6	26.7	17.2	35%	23.9%
Pesticide use:	14.1	15.4	12.0	22%	14.9%
Deforestation: million ha	8.2	7.2	6.5	9%	20.7%

Source: Schader *et al*, 2015 and author's calculations

POLICY RECOMMENDATIONS

Measures needed to reduce food-related GHG emissions

A Chatham House report states that, from the climate viewpoint, there is a "compelling case for shifting diets, and above all for addressing meat consumption. However, governments are trapped in a cycle of inertia: they fear the repercussions of intervention... This report offers a challenge to the received wisdom that these obstacles are insuperable... it suggests how the cycle of inertia can be broken and a positive dynamic of government and societal action created".[64]

It stresses that "governments must lead" and that the public "expect[s] government leadership". It adds that focus groups conducted in four countries – the UK, Brazil, China and the US – "all demonstrated a general belief that it is the role of government to spearhead efforts to address unsustainable consumption of meat". It concludes that "governments overestimate the risk of public backlash".

The report states: "Soft interventions to raise awareness among consumers or 'nudge' them towards more sustainable choices, for example by increasing the availability and prominence of alternative options at the point of sale, are likely to be well received. More interventionist – but necessary – approaches such as taxation do risk public resistance, but focus group respondents thought this would be short-lived, particularly if people understood the policy rationale".

Products from caged animals can be of reduced nutritional quality

Nationally determined contributions

Nationally determined contributions (NDCs) to addressing climate change are at the heart of the Paris Agreement and the achievement of its goals. NDCs embody efforts by each country to reduce national emissions. The Paris Agreement requires each country to prepare NDCs that it intends to achieve.

A report published by the UN in September 2021 states: "The total global GHG emission level in 2030, taking into account implementation of all the latest NDCs, is expected to be 16.3 per cent above the 2010 level".[65] It continues "to be consistent with global emission pathways with no or limited overshoot of the 1.5°C goal, global net anthropogenic CO_2 emissions need to decline by about 45 per cent from the 2010 level by 2030." Clearly the world is falling a long way short of where it needs to be to avoid dangerous levels of climate change.

Despite this, no NDCs commit to reducing livestock production or encouraging lower consumption of meat and dairy. We call on OECD countries and others with high meat consumption to update their NDCs to include a decrease in meat and dairy consumption and a reduction in their livestock sector, as these are essential components of the strategy needed to meet the Paris Agreement targets.

Public procurement

Public bodies should ensure that the food and meals they serve in schools, hospitals, care homes and other venues contribute to lowering food-related GHG emissions as well as providing high nutritional quality.

Public information and awareness

Programmes are needed to increase public awareness on the implications of different dietary patterns for climate change. This would be in line with Sustainable Development Goal 12.8 which provides that people should have "the relevant information for sustainable development and lifestyles in harmony with nature". The Intergovernmental Panel on Climate Change (IPCC) has said that awareness-raising campaigns can contribute to lowering food-related GHG emissions.[66] People need information on how

to plan and cook dishes with less meat; a survey indicates this would help them to reduce meat consumption.[67]

Dietary guidelines

National dietary guidelines should be extended to include advice not just on nutritional quality but also on GHG emissions and other aspects of environmental sustainability. Such guidelines should encourage adoption of healthy and sustainable diets with the proportion of animal-source foods not exceeding dietary and climate-related recommendations.

Binding meat reduction targets

Governments in OECD countries, and other countries with high levels of meat production and consumption, should enact legislation that requires the government to achieve specific meat reduction targets, with interim targets set to help ensure that the final target is met.

Taxation

A tax should be placed on meat and dairy in OECD countries and other countries with high levels of meat consumption. It is essential that all the revenue raised by the tax is used to lower the cost of healthy food with low GHG emissions. There must be no overall increase in the price of food, simply a rebalancing to lower the price of healthy food with low GHG emissions, while increasing the price of unhealthy food with high emissions.

One note of caution: the tax should not have the effect of encouraging consumers to substitute chicken and pork for beef and lamb. Although pigs and poultry generate lower GHG emissions than ruminants, intensive pig and poultry production causes many other problems (detailed above).

Accordingly, taxation should be based not just on carbon emissions but should also take into account the differential impact of extensive ruminants and intensive pigs and poultry respectively on biodiversity loss, deforestation, water pollution, antimicrobial resistance, pandemic risks and animal welfare.

Subsidies

Subsidies should be redirected so that they no longer support industrial agriculture. They should instead be used to fund regenerative agriculture where carbon can be stored in well-managed soils and agro-forestry systems where trees draw down carbon dioxide from the atmosphere. Such systems operate without chemical fertilisers, thereby avoiding the substantial GHG emissions involved in the manufacture and application of fertilisers. Livestock can be an integral component of regenerative agriculture.

A report published by the UN in 2021 stresses that "current agricultural support policies are steering us away from achieving the SDGs and the goals of the Paris Agreement".[68] It "finds that unhealthy products, like sugar and emission-intensive commodities (e.g. beef, milk and rice) receive the most support worldwide, despite the potentially negative impacts on health as well as on climate change adaptation and mitigation".

The amount of subsidies directed to harmful agriculture are huge. A report by the Office for Economic Co-operation and Development (OECD) covering 54 countries found that these countries provide support to their agriculture sectors of $619 billion per year.[69] The OECD reports that more than two-thirds of this support tends to have negative effects including harming the environment. This huge sum should be repurposed to supporting regenerative, climate-friendly forms of agriculture.

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BREAKING THE TABOO: WHY DIETS MUST CHANGE TO TACKLE CLIMATE EMERGENCY

Compassion in World Farming International
River Court, Mill Lane, Godalming,
Surrey, GU7 1EZ, UK

Email: **supporters@ciwf.org**
Web: **ciwf.org**
Tel: **+44 (0)1483 521 953**
(lines open Monday to Friday, 09.00 - 17.00 GMT)

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