Chatham House Report

Laura Wellesley, Catherine Happer and Antony Froggatt
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Changing Climate, Changing Diets

Pathways to Lower Meat Consumption

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Executive Summary and Recommendations

Demand for animal protein is growing. Global consumption of meat is forecast to increase 76 per cent on recent levels by mid-century. A 'protein transition' is playing out across the developing world: as incomes rise, consumption of meat is increasing. In the developed world, per capita demand for meat has reached a plateau, but at excessive levels. Among industrialized countries, the average person consumes around twice as much as experts deem healthy. In the United States, the multiple is nearly three times.

This is not sustainable. A growing global population cannot converge on developed-country levels of meat consumption without huge social and environmental cost. Overconsumption of animal products, in particular processed meat, is associated with obesity and an increased risk of non-communicable diseases (NCDs) such as heart disease, type-2 diabetes and certain types of cancer. Livestock production is often a highly inefficient use of scarce land and water. It is a principal driver of deforestation, habitat destruction and species loss.

Crucially, these consumption trends are incompatible with the objective of avoiding dangerous climate change. The livestock sector is already responsible for 7.1 $GtCO_2e$ a year of greenhouse gas (GHG) emissions – just under 15 per cent of the global total, and equivalent to tailpipe emissions from all the world's vehicles. Rising demand means emissions will continue to rise. Even with best efforts to reduce the emissions footprint of livestock production, the sector will consume a growing share of the remaining carbon budget. This will make it extremely difficult to realize the goal of limiting the average global temperature rise to 2°C above pre-industrial levels, agreed in 2010 by parties to the UN climate change conference in Cancún.

As countries prepare to agree a new international deal at the UN climate change conference in Paris in December 2015, there remains a significant gap between the emissions reductions countries have proposed and what is required for a decent chance of keeping temperature rise below 2°C. Governments need credible strategies to close the gap, and reducing meat consumption is an obvious one: worldwide adoption of a healthy diet would generate over a quarter of the emission reductions needed by 2050.

There is therefore 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, while low public awareness means they feel no pressure to intervene.

This report offers a challenge to the received wisdom that these obstacles are insuperable. Drawing on original research, including an innovative survey of public attitudes in 12 countries and extensive focus groups and stakeholder consultations in Brazil, China, the United Kingdom and the United States, it suggests how the cycle of inertia can be broken and a positive dynamic of government and societal action created. It argues that although reducing meat and dairy consumption is far from straightforward, it is neither an insurmountable task nor more challenging than other climate imperatives, such as decarbonizing power, industry and transport.

Key findings

Governments must lead

Governments are the only actors with the necessary resources and capacities to redirect diets at scale towards more sustainable, plant-based sources of protein.

- **The market is failing.** Without government intervention at national and international level, populations are unlikely to reduce their consumption of animal products and there is insufficient incentive for business to reduce supply. Global overconsumption will bring increasing costs for society and the environment.
- **Publics expect government leadership.** Focus groups conducted during the research across four countries with varying political, economic and cultural conditions all demonstrated a general belief that it is the role of government to spearhead efforts to address unsustainable consumption of meat. Government inaction signals to publics that the issue is unimportant or undeserving of concern.
- **Governments overestimate the risk of public backlash.** 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.

Raising awareness is the first step, not the solution

There is a considerable awareness gap regarding the links between livestock, diet and climate change. While awareness-raising alone will not be sufficient to effect dietary change, it will be crucial to ensuring the efficacy of the range of government policy interventions required.

- **Public understanding of livestock's role in climate change is low** relative to that for comparable sources of emissions. This finding was repeated across all surveyed countries and in all focus groups. People have generally not read or heard about the connection, and may struggle to reconcile it with their own understanding of how emissions occur.
- **The impact of increased awareness on behaviour is intricate.** Increased understanding of the link between livestock and climate change is associated with greater willingness to reduce consumption. At the point of purchase, however, more immediate considerations – both conscious and subconscious – have more sway over consumer decisions. Price, health and food safety have the greatest bearing on food choices, while subconscious cues offered by the marketing environment influence an individual's automatic decision-making. Consequently, strategies focused only on raising awareness will not result in societal behaviour change.
- **Raising awareness can bolster support for government action.** Although raising awareness is unlikely to have a marked impact on individual behaviour, it may make publics more supportive and accepting of policy intervention. Focus group discussions revealed that people were more likely to back government action after being exposed to information about the role of livestock in climate change. Public information campaigns were perceived as a necessary first step in any wider strategy to reduce consumption.

The issue is complex, but the message must be simple

Publics respond best to simple messages. Efforts must be made to develop meaningful, accessible and impactful messaging around the need for dietary change.

- **Emissions vary by animal and production system.** Broadly speaking, emissions from ruminant animals – cows, sheep and goats – are higher than for monogastric animals such as chickens or pigs, and emissions from animal products more generally are considerably higher than those associated with plant-based foods. However, significant variation can result from differences in production system and life-cycle assessment methodologies.
- **Trade-offs abound.** What is best for the climate may not be best for animals or other aspects of the environment. For example, emissions from intensively reared beef tend to be lower than from pasture-fed beef, but the practice raises other problems relating to animal welfare, inefficient use of crops for feed, water pollution and antimicrobial resistance from overuse of antibiotics. The picture is complex.
- **The risk of confusion is high.** Complexity presents an opportunity for interest groups to cloud the issue and create doubt or uncertainty in the minds of consumers, for example by conflating direct and life-cycle emissions or blaming the problem on unsustainable production practices in other countries.
- **However, the overall message is clear: globally we should eat less meat.** Global per capita meat consumption is already above healthy levels; critically so in developed countries. We cannot avoid dangerous climate change unless consumption trends change.

Trusted sources are key to raising awareness

Unless disseminated and supported by trusted sources, new information that encourages shifts in meat-eating habits is likely to be met with resistance. Identifying trusted information-providers and adopting cooperative approaches among them will be critical to raising awareness and engaging the public in this issue.

- **This may not always mean governments.** Survey data indicate that trust in government as a source of information on livestock and climate change varies considerably between countries. Climate change was perceived as a politicized issue, particularly in the US and UK focus groups where public debates were understood to be framed by political ideologies and economic interests.
- **Experts are the most trusted source.** Although trust in experts varies between countries too, within countries they are always considered the most reliable source of information on climate change and livestock. Environmental NGOs are also often seen as a reliable source of information.
- **Social media hold less sway than may be expected.** Despite the rapid rise of social media and a shift in the way that many around the world access news and share information, mainstream media outlets continue to set the agenda and direct public engagement and opinion. An awareness of financial and political influence over these media outlets and widespread acknowledgment of pervasive bias across many major news agencies has not eroded an implicit trust in mainstream media to bring to light issues of public concern.

Recommendations

Action is needed on three fronts.

Build the case for government intervention

A compelling evidence base that resonates with existing policy objectives such as managing healthcare costs, reducing emissions and implementing international frameworks will help mobilize policy-makers.

- **Evaluate the economic grounds for change.** The social and environmental costs of meat overconsumption are significant, in terms of a growing NCD burden, obesity, climate change and natural capital depletion. An international taskforce could undertake a first assessment of these costs and quantify the potential economic gains from reduced consumption.
- **Align with the broader sustainability agenda.** Strategies to effect dietary change and to address unsustainable meat production and consumption could form a core component of the post-2015 development agenda. As the international community moves to realize the Sustainable Development Goals (SDGs), policy-makers should capitalize on this moment of change and emphasize the importance of a global reduction in meat consumption to fostering sustainable, equitable resource use across all sectors.
- **Establish international norms for a sustainable, healthy diet.** International recommendations are needed to help governments elaborate and integrate environmental standards into dietary guidelines. These could be developed among relevant international bodies such as the World Health Organization, Food and Agriculture Organization or Intergovernmental Panel on Climate Change, and would provide a benchmark against which national plans and consumption patterns can be assessed.
- **Build the evidence base for policy-makers.** A lack of evidence on the efficacy of different interventions to change diets inhibits government action. More research and piloting is needed to identify transferable lessons from health and nutrition interventions. Systematic, independent evaluation processes should be designed into intervention strategies. While evidence for the climate impact of meat and dairy consumption is strong, current approaches to national GHG accounting encourage a focus on supply-side mitigation. A more comprehensive approach that measures all emissions associated with national consumption practices would further strengthen the policy rationale for much-needed demand-side measures.
- **Work across government.** The issues associated with overconsumption of animal products are potentially relevant to various ministries including environment (and/or climate change), health, education, business and agriculture. A joined-up approach will require mobilization across government, for example through a taskforce or inter-ministerial working group.

Initiate national debates about meat consumption

Increasing public awareness about the problems of overconsumption of animal products can help disrupt the cycle of inertia, thereby creating more enabling domestic circumstances and the political space for policy intervention. Governments have a role to play here, as do the media, the scientific community, civil society and responsible business.

- **Tailor strategies to national contexts.** Attitudes to meat and climate change vary considerably by country and are shaped by a variety of political, social and cultural factors. Any intervention strategies must therefore be sensitive to these factors.
- **Broaden the message.** Climate change is generally subordinate to other more personal considerations such as price, health, food safety and localized environmental concerns. Messages should focus on the co-benefits of reduced consumption.
- **Ensure the message is accessible.** The complexity of the links between overconsumption of animal products and health and environmental impacts will be difficult to convey to publics whose existing levels of understanding and interest are low. In order for communication campaigns to be accessible, meaningful and impactful, they will need to focus on hard-hitting facts and visual linkages between meat, dairy products and climate change.
- **Mobilize mainstream media.** Mainstream media coverage signals importance. Governments, academic institutions and civil society groups should forge links with relevant journalists, specialist communication agencies and non-partisan experts such as scientists.
- **Engage independent and surprising communicators.** Non-partisan experts will be most trusted by publics and should be central to any awareness-raising campaigns. In some national contexts, celebrities may also have an important role to play in establishing and promoting social norms of reduced consumption. Unusual or unexpected actors – for example, a major retailer promoting plant-based alternatives – could have particular impact.

Pursue comprehensive approaches

The evidence indicates that shifting diets will require comprehensive strategies drawing on all components of the intervention toolkit. Such strategies will amount to more than the sum of their parts by sending a powerful signal to consumers that reducing meat consumption is beneficial and that government takes the issue seriously. Successful policies will be tailored to national contexts, and may benefit from framing government-led dietary guidance around a positive message of cultural preservation and the promotion of gastronomic diversity.

- **Expand choice.** It needs to be easier for people to shift their purchasing behaviour, whether consciously or automatically, through improved availability and promotion of non-meat alternatives; a wider choice of vegetarian or low-meat options among pre-prepared meals in retail environments, for example, or greater prominence of vegetarian options in cafeterias.
- **Capitalize on public procurement.** Particular opportunities for policy-makers exist in public institutions such as schools and hospitals, and governments may also implement regulations or agree targets with businesses. In many countries, the public sector accounts for an important share of food procurement. Governments would therefore be able to reach a large section of the population and to drive wider change if businesses harmonize supply chains to save costs. Such measures would also enable them to demonstrate commitment to the issue.
- **Use price.** Interventions to change the relative prices of foods are likely to be among the most effective in changing consumption patterns. Opportunities include removal of direct or indirect subsidies to the livestock sector, subsidization of plant-based alternatives, or interventions to increase the price of meat and other unsustainable products, such as a carbon tax.
- **Learn by doing.** There is a need for more evidence about the efficacy of different interventions and how this is affected by contextual factors. Some interventions may have unintended consequences. Governments should test strategies, building in strong monitoring and evaluation processes, and be prepared to modify and refine approaches as they move forwards.
- **Support innovation.** The absence of a strong signal from government to promote low-meat diets discourages private investment in research and development (R&D) for alternatives, and may be a disincentive to industry action to increase the range and share of plant-based options on offer. Despite this, efforts are under way to develop new plant-based meat alternatives and 'lab grown' meat, though these innovations remain some way from commercialization. Policies to support R&D and help 'pull' promising technologies to market should be explored.
- **Promote and protect diversity.** As the protein transition advances, traditional diets recede and consumption of processed and pre-prepared food increases. This report identifies low levels of understanding about what constitutes a balanced diet, and the relative shares of animal versus plant-based products within this. Education campaigns to promote balanced diets and preserve knowledge about food preparation and cooking present an opportunity to address these problems.

It is time for governments to revisit assumptions that reducing meat consumption is too difficult or too risky. As the global burden of NCDs and obesity grows, policies aimed at reducing the intake of salt, sugar and unhealthy fats are proliferating. Government capacity to influence diets is expanding and publics are becoming increasingly accepting of the role of government in this area.

Including meat in such efforts would help deliver on the public health agenda while also meeting environmental objectives. In particular, as the international community prepares to move forward with implementation of the SDGs and closing the emissions gap after the Paris conference, governments need to be able to offer credible policies. Reducing meat consumption should be high on the list.

About the Energy, Environment and Resources Department at Chatham House

The Energy, Environment and Resources (EER) Department undertakes independent, thought-leading research on critical issues of climate security, resource governance and environmental protection. It plays an important role in analysing and informing international processes, conducting innovative research on major policy challenges, bringing together diverse perspectives and constituencies, and injecting new ideas into the international arena. It seeks to advance the international debate on energy, environment and resources policy, and to influence and enable decision-makers and stakeholders – including governments, NGOs, business and media – to take well-informed decisions that contribute to both achieving sustainable development and mitigating potential future climate- and resource-related insecurities.

The department's research capability combines analytical rigour with comprehensive sector expertise and strong command of technical issues, underpinned by a deep understanding of geopolitical and political economy challenges, and drawing on an extensive global network of contacts from governments, civil society, the business community and academia.

The impact of EER's work is recognized internationally: its research output is widely read throughout the policy community, and the department maintains high-level engagement with governments and civil society worldwide. Analysis on the latest global trends in the production, trade and consumption of critical resources, famines and early warning systems, and low-carbon development have all advanced evidence-based policy strategies in critical but controversial areas.

Cover image: Grand Central Market, Los Angeles, October 2015.

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The Royal Institute of International Affairs
Chatham House
10 St James's Square, London SW1Y 4LE
T +44 (0)20 7957 5700 F +44 (0)20 7957 5710
contact@chathamhouse.org www.chathamhouse.org

Charity Registration Number: 208223