

Paris-compliant healthy food systems



Executive summary

In September 2016, the Global Food Security (GFS) programme held an interdisciplinary workshop to consider what a Paris-compliant healthy food system might look like, and mechanisms by which this kind of food system might be realised. The purpose of the workshop was to reach a shared cross-sector understanding of the existing knowledge in this area, while also moving thinking on to identify the most viable intervention points across the food system for reducing GHG emissions while also improving health. Consideration of the nature of interventions that could be implemented at these points highlighted gaps in current knowledge and future priorities for research. By drawing on expertise from across the food sector, the workshop presented a chance to increase understanding of the particular opportunities and challenges a Paris-compliant system poses to stakeholders, and how activity on climate and food might best be progressed.

Entering into force on 4 November 2016, the Paris agreement saw all 197 parties to the UNFCCC pledge to avoid dangerous climate change by limiting global warming to “well below” 2°C and to “pursue efforts” towards 1.5°C. Despite relative absence from official discussions to date, the agri-food sector must adapt if we are to meet the Paris agreement – the global food system as a whole currently responsible for around 30% of total anthropogenic GHG emissions. At the same time there is still a need to achieve global food security, supplying sufficient nutritious, safe and equitable food to meet the demands of the growing global population. The unification of thinking around sustainability and health presents an opportunity to find food system solutions that address both challenges simultaneously – encompassed by the ideal of a Paris-compliant healthy food system.

Summary of key discussions

Session 1: What might be required for a Paris-compliant food system?

Following an overview of the current state of knowledge, it was clear that we have the capability to meet global food security while also being compliant with the Paris agreement and improving global health; however, this cannot be achieved on our current trajectory. While there is scope for improvements to be made to food supply, the greatest co-benefits for sustainability and health can be realised via changes in food demand. With this in mind, participants considered what might be required for a Paris-compliant food system, and what the targets for change might be. Key discussion points included:

- There is scope for GHG emissions reductions to be targeted in food production, but there must be greater dialogue with producers to better understand how knowledge can be combined and practically implemented.

- Industry will play a significant role, so there is a need to explore new business models that work within a market focused on sustainability and nutrition.
- Change to the demand side of the food system will be necessary, but the required level of change and most effective mechanisms of change need further clarification.
- Mainstreaming the link between climate and food is necessary to change social norms, and would need to be at the heart of any widespread dietary change.
- Policy could play a central supporting role by integrating food and climate goals.

Session 2: How can we move the agenda forwards?

Following identification of potential leverage points in Session 1, discussions moved onto the mechanisms by which change could occur. Core themes were as follows:

- There is need for improved communication to all stakeholders. Information is not enough to effect change, but maximising awareness via communication campaigns will play an important role. Messages need simple and concise themes, building a clearer communication environment to help stakeholders make informed choices.
- Mainstreaming the connection between food and climate has significant scope to support food system change. This might be achieved via public procurement policy; inclusion of health and sustainability lessons in the curriculum; or product sourcing and environmental impact information on food packaging and restaurant menus.
- We already have a great deal of relevant knowledge and experience which can be built on. Learning could also be taken from other countries and sectors, providing ideas and evidence for innovative interventions to reduce emissions
- Knowledge gaps include:
 - o Robust metrics and targets to quantify required change
 - o Mechanisms to support social change
 - o Understanding how to produce food in a climate that is at least 1.5 degrees warmer
 - o Possible win-win scenarios for producers and food business in a high quality low quantity market
 - o Approaches for food policy that integrate all food system drivers as well as health and climate change
 - o Economic costs to UK of action and inaction

Most urgently of all we need food system change of far greater scale and speed. There will be no one silver bullet to address the challenges faced, instead requiring a programme of action involving all parties across the food sector.

The need for change

At the Paris climate conference (COP21) in December 2015, all 197 parties to the UNFCCC pledged to avoid dangerous climate change by limiting global warming to “well below” 2°C and to “pursue efforts” towards 1.5°C¹. Ratified by at least 55 Parties to the Convention, the Paris agreement entered into force on 4 November 2016 – significant action and innovation required as soon as possible if we are to meet this ambitious target.

With the global food system as a whole currently responsible for around 30% of total anthropogenic greenhouse-gas (GHG) emissions², it is clear that the agri-food sector must adapt in order to support the Paris agreement – especially given projections that food-related emissions at current levels could account for the entire carbon budget for a 2°C temperature

rise by 2050³. At the same time there is still a need to achieve global food security, supplying sufficient nutritious, safe and equitable food to meet the demands of the growing global population.

However, while both sustainable and nutritious diets will be central to addressing both the food security challenge and the Paris agreement, it is currently unclear what a Paris-compliant healthy food system would look like in practice. There is certainly need for systemic change, but more work needs to be done to understand what mixture of pre and post farm-gate areas will be the most viable and effective targets for intervention.

Paris-compliant healthy food systems workshop

In September 2016, the Global Food Security (GFS) programme convened a group of 30 experts from across academia, policy, industry and NGOs (Appendix 1), all with an interest in sustainable and healthy food systems. This multidisciplinary cross-sector group were asked to consider current thinking across the field of sustainable nutrition before identifying the most viable intervention points across the food system, and the measures that could be implemented at these points, for reducing GHG emissions while also improving health.

By focusing on one element of sustainability – GHG emissions – in the context of a system that successfully delivers healthy and nutritious food, it was hoped that the group could move forward thinking on how the food system should adapt to simultaneously support both the Paris agreement and food security, while also identifying gaps in current knowledge and exploring how these might be addressed through developing the research agenda.



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Current state of knowledge

While the Paris agreement has undoubtedly made great progress towards global action to mitigate climate change, the most difficult stage of the process is still to come – establishing and initiating the pathways by which this ambitious agreement can be achieved. Studies have shown that in order to be consistent with a 2°C target, emissions across all sectors will need to decrease by over 80% by 2050, with greater reductions required to meet a 1.5°C target. In order to begin progress towards this target, it will be necessary for global emissions to peak as soon as possible, recognizing that this will take longer for developing countries⁴.

Within the food sector, agricultural production is a major hotspot for emissions – of the ~30% of total anthropogenic GHG emissions coming from food, agriculture, forestry and other land use (AFOLU) accounts for about 80%, or 24% of total food related anthropogenic GHG emissions. To this end, a great deal of research has been conducted into more sustainable approaches for agriculture, providing an extensive and scientifically evidenced ‘toolbox’ of potential mechanisms to mitigate GHG emissions⁵. Such adaptations to production will require large-scale implementation and significant change across the industry, but show great scope to be cost-competitive and, in combination, present a substantial opportunity to decrease GHG emissions - the sum of all the technical mitigation measures in the livestock and land sector having the potential to result in CO₂ reduction of 4-5 Gt per year.

More recently, the potential for change to the demand-side of the food system to mitigate environmental impact has been under exploration; research suggesting that a reduction in consumption, and therefore production, of products associated to high GHG emissions – particularly meat and other animal products – and increased consumption of those products associated to lower emissions would result in a shift towards sustainability. Indeed, a number of studies have demonstrated that such dietary change has far greater potential to reduce emissions than production side measures^{6, 7, 8}. However, demand-side measures are likely to be difficult to implement, consumer behaviour and food culture being deeply ingrained and notoriously tricky to change. Nevertheless, the demand-side remains a promising target for GHG mitigation mechanisms as it is evident that production side measures alone will not be sufficient to achieve the necessary reductions in emissions to meet the Paris agreement.

At the same time, it is of vital importance to ensure that we do not focus solely on sustainability and environmental impact, developing a food system that meets the Paris agreement but compromises on food security and nutrition. It is clear that the global food system is not currently delivering nutritious and healthy diets to all – globally, nearly 800 million people are chronically undernourished, more than 2 billion suffer from micronutrient deficiencies, and another 600 million are obese⁹. The unification of thinking around sustainability and health is increasingly coming to the fore, presenting an opportunity to find food system solutions that address both challenges simultaneously.

Research is emerging that considers which kind of foods, and further to this which kind of diets, might co-deliver benefits for both climate and health. For example, it has been shown that if UK diets aligned to dietary recommendations provided by the World Health Organisation then national GHG emissions would decrease by 17%¹⁰. This demonstrates significant emissions reductions from what can be considered small and realistic modifications to national diets that also benefit health, further study predicting this change would save 7 million life years and increase average life expectancy by 8 months¹¹. Indeed, more may be possible – further modelling of potential changes to UK diets showing a possible decrease to national emissions by 40% while still providing a nutritious diet that is culturally recognisable.

Encouragingly, current knowledge demonstrates that we have the capability to feed the growing global population while also being compliant with the Paris agreement and improving global health; however, this cannot be achieved on our current trajectory.

Key discussions: Break-out session 1

The delegation was split into groups to discuss current understanding of what might be required for a Paris-compliant food system, considering the potential sectors of the food system that would be the most viable and effective targets for interventions to decrease GHGs while also improving nutrition, as well as the possible interventions that could be employed at these targets. Core themes of discussion were as follows:

- **There is a great deal of scope to further target the production sector of the food system for GHG emissions reductions**, many of the potential technical measures in this space being very well academically researched. However, there must be greater engagement with producers to better understand how this existing knowledge can be practically implemented, using end-to-end dialogue to share expertise, improve communication, and effectively develop technology for on-farm use. The agri-tech strategy and related investments are taking steps towards this.
- **There is scope to introduce economic incentives to target the supply-side of the food system**, the proposed exit of the UK from the EU providing opportunity to reinvigorate the farming subsidy system to better support sustainability and health goals. More creative measures could be implemented in this space, especially incentivising production of win-win crops such as pulses.
- **Industry will play a significant role in any Paris-compliant healthy food system, and there is a need to explore new business models that work within a market focused on sustainability and nutrition.** While there have been calls for industry to voluntarily “do the right thing” by reducing their environmental impacts or reformulating products to better support consumer health, it was recognised that it is very difficult to take any significant action and remain profitable in the current market where the appreciation for sustainability is relatively low. Support for new business models could be offered by policy, introducing regulations on the food industry – in terms of both emissions and nutrition targets – to create a level playing field and thereby offer business more room to change their practice.
- **There is no one-size-fits-all approach for business**, the potential interventions that could be employed by different industry groups to meet sustainability and health demands being highly business specific. Feasible measures may depend on: existing local nutrition; whether the business works in developed or developing markets, which will result in different challenges for retail and manufacture; the variation in capabilities of smaller and larger businesses; and power to influence the market due to market share.
- **Even under the current market, there is scope for businesses to identify and implement business models that sell less but are still profitable**, developing a new market sector that offers win-wins for business, consumer health and sustainability. This approach may involve product diversification or introduction of new products into the market.
- **Change to the demand side of the food system will be necessary if we are to come close to meeting the targets set by the Paris agreement, but the required level of change and most effective mechanisms of change need further clarification.** Academic research clearly points to the co-benefits of increasing consumption of certain food groups, particularly pulses, and of decreasing consumption of others, predominantly red and processed meat. Globally, but particularly in the UK and other developed nations, there are further co-benefits to be found in the general reduction of food intake where this is in excess. However, it is currently unclear to what extent we should aim to change diets, and how we might go about this. More research is required to fill these knowledge gaps.





- **Stronger communications on healthy sustainable diets will be necessary to provide clear information in the best possible format for consumers to make informed dietary decisions with an open mind.** While health and nutrition information is widely available, it is often conflicting and confusing with few examples drawing much focus upon the environmental impact of food. Strong and consistent messaging would be required to address this issue.
- **Economic incentives could be employed at the demand-side of the food system,** the application of food taxes and subsidies geared to especially support consumption practices that co-benefit health and sustainability, while deterring those that are harmful. However the efficacy of such measures is widely disputed, requiring further research to understand the combinations of economic incentives that may have the desired effect.
- **Mainstreaming the link between climate and food in order to change social norms would need to be at the heart of any widespread dietary change,** bringing about shifts to food cultures and social pressures to change behaviour in a sustained way.
- **Regardless of methodology, there is a strong argument for targeting consumer demand first.** This is because current market forces are pushing against sustainable food systems, making action at the supply side difficult to justify in terms of profitability. Change in consumer demand will alter the market, shifting focus towards sustainability and health to facilitate change in other sectors.
- **Policy could play a central role in supporting a Paris-compliant healthy food system, by integrating food and climate goals.** This kind of action will send a strong message of commitment to fully and openly tackling climate change with food at the core. It would be especially valuable in bringing all stakeholders to the table – from producers to the public health community – providing a key opportunity to make use of joined up thinking, share cross-sector expertise and collaborate on innovative policy that will address issues across sustainability and health.
- **There are some clear win-win targets,** for example, waste reduction across the system – as outlined in the Courtauld Commitments - would hold economic benefits for all stakeholders as well as the sustainability agenda.
- **There is an urgent need for change, but we must ensure that both UK business and consumers benefit from any change otherwise it is unlikely to happen.**

Key discussions: Break-out session 2

Drawn from earlier discussions, the delegation were posed six questions and asked to discuss ideas and potential solutions. These questions and the associated core themes of discussion were as follows:

1. There is clearly space for improved communication to all stakeholders in the food sector, delivering key simple messages concerning diets to support both health and the climate. What are the messages? And how should they be communicated?

It was acknowledged that while information is not enough to support food system change, maximising awareness via communication campaigns will certainly play a very important role, building a clearer communication environment to help stakeholders navigate the great number of conflicting messages surrounding diet and nutrition as well as sustainability.

Simple and concise themes for messaging might be:

- Eat less and waste less.
 - Eat less but better.
 - Diversify your diet.
 - Eat less meat/eat less but better meat/meat as a treat [including pro meat messages].
 - Create a preventative society
 - We can't meet the Paris commitments or avoid dangerous climate change without dietary change. Act now.
- Other factors that should be considered as part of any successful communications campaign are:
- Messaging that is consistent, simple but systemic, strong and striking.
 - Tailoring to target audience, with scope to approach different groups in different ways via a variety of media.
 - Appropriate framing of ideas, bringing stakeholders into the discourse with an open mind.
 - Translation into more directly practical resources to better support action; for example: cook books, meal plans or resources for schools.
 - Retailers and manufacturers promoting messages, either on packaging or the shop floor.
 - Building upon the existing and well-known Government 'Eatwell Plate' or 'Chage4Life' campaigns, reaching their existing audience.

2. The mainstreaming of the connection between food and climate change, as well as the changing of social consumption norms, has significant scope to raise awareness of these issues across all stakeholders and support changes in behaviour and the food system more widely. How might such mainstreaming be achieved?

Using the successes of the 5p plastic bag tax, smoking ban and drink driving campaign as inspiration, it is clear that mainstreaming or normalising positive actions, or indeed making negative actions socially unacceptable, have a great deal of scope to change behaviour. Suggestions as to how understanding of the links between food and climate could be made mainstream included:

- Public procurement policy with sustainability and health at the forefront, all catering at public institutions and at public sector events sourced responsibly and offering healthy choices. There is potential to build on existing sourcing agreements, such as Courtauld 2025, expanding to include sustainability and health.
- Inclusion of health and sustainability lessons in the curriculum to introduce these ideas at an early age. This approach also has the potential to reach wider family groups via children.
- Provision of product sourcing and environmental impact information on food packaging labels and in restaurant menus, normalising this practice and raising awareness of the sustainability agenda.
- Placement of the issue into the public eye via popular media, for example features on popular television and radio programmes or magazines.
- Initial targeting of those already aware of the issues and already open to dietary change. This approach could potentially ease the start of the process, beginning social change in a receptive audience to facilitate future interactions with other groups.
- Drive in development of alternative food products – for example, meat alternatives or novel plant protein products – to expand markets and provide more extensive options to make healthy sustainable eating tastier and more attractive.
- Further cross disciplinary research to better understand social behaviours and appropriate measures to influence them.



3. With a wealth of existing knowledge in the space of sustainable nutrition, there is a need to draw on this more effectively and 'not reinvent the wheel'. What current knowledge and experience do we have? And how can we build on this?

- We already know a great deal about areas where GHG emissions are high and, to a degree, the types of interventions that could be employed to reduce emissions. There is a need to build on this knowledge, particularly via development of robust metrics and targets to quantify required change. Alongside this there is a need to facilitate practical implementation by working more closely with producers, manufacturers, retailers and policymakers to better understand their needs and the constraints they operate within. This collaboration would support development of knowledge into a toolbox or menu of interventions that could be employed across the food system.
- There is a significant amount of evidence to support changes to the demand side of the system, but comparatively less on how we might facilitate this change. More research is required to progress understanding of mechanisms for social change. However, studies to date have shown that information campaigns alone will not be sufficient to achieve this kind of change, and rather shifting food environments is a more effective action. We must integrate this thinking into policy, supporting research into and development of interventions focused on the food environment.
- Significant learning could be taken from other countries and sectors, providing ideas and evidence for innovative interventions to reduce emissions. For example: the energy industry for guidance on raising the profile of the sustainability agenda and expansion to new markets; the WildAid programme which has achieved great success in changing behaviour and social norms to reduce illegal wildlife trade; and the tobacco industry which has a great deal of knowledge on influencing behaviour, expanding into new markets and maintaining business in the face of reduction in product consumption on health grounds.

4. What else is needed to bring about a Paris-compliant and healthy food system? Where are the knowledge gaps that prevent us from moving forward?

- There is a need for greater understanding of how to produce food in a climate that is at least 1.5 degrees warmer, setting out scenarios for the future to describe what the world will look like. Creating such a vision of agriculture, incorporating the need to deliver on climate change goals and health, will make clearer the action that must be taken now to allow business to continue to be viable in a changing climate.
- Research is required that considers possible win-win scenarios for producers and food business in a high quality low quantity market, developing thinking on new business models that better support health and sustainability.
- There is a need for change to dietary patterns as well as to cultural perceptions of 'normal' diets. More field based research could be employed to better understand the consumer landscape, determining what mechanisms would actually be effective in changing dietary patterns and social norms.
- More work is needed in considering what should be incorporated into a food policy that integrates all drivers within the food system as well as health and climate change. We require more analysis of existing policy and proposed initiatives across Government, business and civil society to evaluate and realise what works and why. This requires breaking out of policy and disciplinary silos.
- A better understanding of economic costs to UK of action and inaction is needed, taking into account public health burden, mitigation costs, negative emissions technology deployment costs, and the impacts of rising risk of failure as time without action rolls on. This could be used as part of further research to better define the boundaries and impact of potential taxing of environmental externalities, and whether this would be an effective policy measure.
- Most urgently, we need more scale and speed, widespread interventions needed as soon as possible to give us the best possible chance of meeting the Paris agreement. To facilitate this we will require increased working together, sharing of learning and a more open and inclusive dialogue across the system.

5. Public procurement could play a strong role in a Paris-compliant and healthy food system. What are the possible initiatives in this space? How could these initiatives be promoted and implemented?

- Government and public sector agencies could have a role in setting an example for healthy and sustainable food procurement both in-house and within Government institutions.
- Mandatory standards in schools and public sector workplaces could act to improve general awareness, potentially encouraging wider use.
- Development of clear green procurement guidelines would be helpful, potentially supported by a score card in which tenders are scored on their sustainability and health sourcing standards, as well as waste management and portion control measures.
- Nationally defined healthy, sustainable dietary guidelines would be helpful alongside any procurement policy. Further incorporation of the sustainability agenda in existing guidelines would address issues concerning definition of a suitably nutritious low carbon diet.
- Case studies could be used to encourage uptake of these standards more widely, example menus alongside cost breakdown providing clear examples of what fits the criteria as well as highlighting potential cost savings.
- Training for buyers in procurement standards could also be rolled out to improve skills.

6. What other initiatives might be used to support a Paris-compliant and healthy food system?

Delegates were asked to think creatively about other initiatives which could be employed to encourage movement to a Paris-compliant healthy food system. Suggestions were:

- Personal carbon budgets, in which individual consumers are provided with a budget and manage it according to their own preferences. This kind of budget could be allocated solely for food, or could encompass all personal carbon use.
- Smartphone applications or Fitbit-like trackers that provide simple monitoring and statistics on individual environmental impact. This kind of approach would be effective in helping consumers better understand how they personally fit into the food system, realising their own impacts and mechanisms by which they could minimise these.
- Considering intergenerational justice, drawing focus more strongly onto preserving, and if possible improving, the climate, health and food systems for future generations. Putting this at the forefront of reasoning may better incentivise action.



Conclusions

There is clearly a need for urgent change to the food system if we are to meet the Paris agreement while also supporting nutrition – action required across the system from production to consumption. Unfortunately, there will be no one silver bullet to address the challenges faced, instead requiring a programme of action involving all parties across the food sector. Only by involving all stakeholders in finding and implementing solutions can we hope to move forwards, with interdisciplinary research and evidence synthesis at the core of continuing work.

While it is increasingly common for the health and sustainability agendas to be aligned, it will also be vital for thinking across these disciplines to be further joined up. This would not only improve support for interdisciplinary research, but also for collaborative and cohesive policy development that successfully addresses multiple national objectives.

Equally, it is important to remember that these are not binary issues. Food is necessary but also there to be enjoyed. As such, there is no one right picture for a Paris-compliant food system – the nature and scale of solutions implemented lying on a spectrum. However, based on current emissions estimates, it was agreed amongst delegates that the best approach to cap temperature rise to 2°C and meet the Paris climate agreement will be to do as much as we can, and as soon as we can. Change will be slow to take hold, and we cannot afford to wait until drastic climate problems occur to start the move towards a Paris-compliant healthy food system.

Discussions at the workshop – characterised by the often variable consensus across different sectors – demonstrated that there is a need for a cross-sectoral institution like GFS to further inject momentum into the debate and facilitate multi-disciplinary examination of this multi-disciplinary problem. Primarily, this could be addressed through a GFS report synthesising the current evidence, providing a key background resource to policy and industry professionals that could be used to stimulate progression of the discussion.



Appendix 1: Participants List

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