



**FUTURE  
PLATES**

Protein Challenge 2040

**FORUM  
FOR THE  
FUTURE**

## **Cooking up a Sustainable Future:**

Insights and recommendations for actions to evolve mainstream culinary skills curricula

By: Forum for the Future and the Protein Challenge 2040 Future Plates initiative

The Future Plates initiative aims to rebalance protein in diets as part of the Protein Challenge 2040, an ambitious collaboration to create a sustainable future for protein. Partners of Future Plates in Europe include:



Ahold Delhaize



we love this business



for good, naturally



Nestlé

Research



SUSTAINABLE RESTAURANT ASSOCIATION



UNIVERSITY OF WEST LONDON  
The Career University



WWF

FORUM FOR THE FUTURE

*The views expressed in this report are not necessarily representative of Protein Challenge 2040 partners or other contributors to this report.*



Forum for the Future is a leading international sustainability non-profit with offices in London, New York, Singapore and Mumbai. We specialise in addressing critical global challenges by catalysing change in key systems.

For almost 25 years, we've been working in partnership with business, governments and civil society to accelerate the shift toward a sustainable future.

Together we are reinventing the way the world works. Find out more at [www.forumforthefuture.org](http://www.forumforthefuture.org)

© 2020 Forum for the Future

Published: August 2020



<b>CONTENTS</b> .....	<b>2</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>4</b>
<b>INTRODUCTION</b> .....	<b>8</b>
Why diets need to shift .....	8
Why is a transition in culinary skills needed? .....	10
Future Plates: piloting a new curriculum for mainstream culinary training .....	13
<b>STARTING THE JOURNEY: WHAT TYPICAL TRAINING LOOKS LIKE TODAY</b> .....	<b>14</b>
A legacy of Classicism? .....	15
Where is change happening? .....	16
<b>DESTINATION: WHAT SKILLS ARE NEEDED? WHAT SHAPE MIGHT FUTURE TRAINING TAKE?</b> .....	<b>18</b>
<b>HOW TO BRIDGE FROM THE CURRENT MAINSTREAM TRAINING TO THIS FUTURE SKILL SET?</b> .....	<b>22</b>
<b>ACCELERATING TRANSFORMATION OF CULINARY SKILLS EDUCATION</b> .....	<b>28</b>
1. Make the case internally to value and invest in training and development .....	30
2. Embed sustainability into existing courses and on-the-job learning .....	31
3. Harness chef's creativity to innovate and diversify towards sustainable nutrition .....	32
4. Deepen connections with others on the same journey .....	33
5. Add your voice to the need for change .....	34
<b>CONCLUSIONS</b> .....	<b>36</b>
Acknowledgements and further information .....	38
<b>REFERENCES</b> .....	<b>39</b>
<b>ABOUT THE PROTEIN CHALLENGE 2040</b> .....	<b>41</b>

# EXECUTIVE SUMMARY

## WHY A TRANSITION IN CULINARY SKILLS IS NEEDED

The global food landscape is slowly starting to shift in a positive direction, thanks to changing consumer tastes and expectations, as well as growing awareness of the relationship between food (both production and consumption) and the environment and health. There are signs that a nascent transition to a food system built around sustainable nutrition - where food is produced and consumed in a way that is affordable, healthy and good for the planet - is underway, but this urgently needs to accelerate. While there have been encouraging leaps forward in product innovation around sustainable protein, Forum for the Future's [Future of Food report](#) found there has been little focus on other enabling conditions needed to rebalance diets.

Chefs have a very important role to play in helping to create a [“new normal” for our diets](#) - to provide healthy, sustainable meals, with a better balance of plant and animal protein. There are more than 325,000 chefs in the UK alone.<sup>1</sup> Their influence, economic heft and consumer reach is significant. More than 5 million meal kits are sold per month<sup>2</sup> in the UK, and online food delivery sales

went up by 11.5% at the start of 2020.<sup>3</sup> The UK out-of-home food and beverage sector was worth £56bn in 2019,<sup>4</sup> and in 2017, roughly 1 in 5 meals were eaten outside the home across Europe.<sup>5</sup> All of these consumption occasions involve chefs - either cooking on premises, or in food innovation labs and manufacturing facilities.

Sitting at the intersection between production and consumption, chefs make ingredient and sourcing decisions that shape supply chains, and create or strengthen consumer trends. It is clear that they have tremendous potential to fundamentally transform food culture and accelerate the food industry's shift towards sustainable nutrition. But for chefs to really fulfil this potential, they need opportunities to develop the plant-based skills and sustainability knowledge that a sustainable food system demands - which is currently missing from most culinary education and industry settings.

## FUTURE PLATES: PILOTING A NEW CURRICULUM

The need to empower chefs to develop these skills and knowledge formed a key part of the [Future Plates initiative](#) - an initiative working to rebalance protein in diets. Part of the [Protein Challenge 2040](#), an ambitious

collaboration to create a sustainable future for the protein sector, the Future Plates initiative in Europe has focussed on the process of updating chefs' skills training to place sustainability at the heart of culinary education. This report brings together the insights and experience gained from:

- [multiple industry expert roundtables, chef surveys](#) and peer to peer conversations

- working with our partner, the University of West London, to [engage with culinary arts students](#) and [pilot eight new lessons](#) on key sustainability themes from September 2019 - May 2020

Through this report we aim to offer a vision of what future mainstream chefs training could look like, by moving on from being heavily meat and dairy focused, towards a focus on courses shaped around techniques and the chemistry of cooking that bring out the best of ethical, seasonal and sustainably sourced ingredients, as well as experimentation with a diversity of food cultures, flavours and ingredients. In the accompanying [Future Plates Teaching Handbook](#) for chef lecturers, teachers and culinary skills trainers, we offer ready-to-use teaching principles, tips and resources created during the pilot process - including lesson plans and presentations - that can be easily integrated into almost any mainstream culinary skills education course.

## WHERE HAS CHANGE BEEN HAPPENING?

Pockets of innovation for sustainable nutrition exist today in the food industry. There have been some pioneering actions from leading chefs such as [Noma's New Nordic movement](#) and [Olivia Gautier's](#) three course plant based menus, as well as the rise of small sustainability specialists in the hospitality and catering sectors and a glut of plant-based innovation from big businesses. The [Chefs' Manifesto](#), facilitated by the SDG2 Advocacy Hub, has also broken new ground in bringing together over 700 chefs around the Sustainable Development Goals. But, when compared to the almost 5 million people employed by the food and beverage sector in Europe today,<sup>6</sup> it is clear that more engagement at a wider scale is needed.

Most mainstream culinary training is heavily influenced by "classic" European/French cuisine, with much of it structured around key techniques for cooking with animal proteins (for example, red meat, poultry and fish). Training curricula rarely integrate the specific skills that chefs need to deliver on sustainable nutrition, including cooking with a diverse set of plant-based ingredients and understanding key sustainability issues related to sourcing and ingredients. Some plant-based training modules are emerging, such as the Le Cordon Bleu's [Diploma in](#)

[Plant-Based Culinary Arts](#), but these are niche developments, rather than widespread across the industry. Training that caters for students who will go, not just into high end restaurants, but also into positions in school canteens, food management and food innovation, is essential. With more than 28,000 UK culinary students in 2016<sup>7</sup> and a diverse range of institutes catering to culinary education - from degree-level courses and high-profile institutes to colleges, apprentices and on the job training - it is critical for **all** courses to evolve.

## DESTINATION: WHAT SKILLS ARE NEEDED?

To deliver sustainable nutrition, chefs need to respond dynamically to different ingredients, menus and sustainable sourcing requirements and have the ability to innovate with diverse and often seasonal ingredients.

To enable this transformation, culinary training will need to include a greater focus on techniques, processes and the chemistry of cooking, especially a strong understanding of how to build flavours. Chefs will need to understand how to cook with pulses and other plant proteins, as well as how to adapt techniques across different ingredients. The often-overlooked ability to cook rebalanced meals, with less and better meat, will also

be important, working with a combination of animal and plant protein to create a flavoursome, well textured dish. A grounding in broader sustainability issues relating to food will be essential for anyone who makes decisions about sourcing ingredients or menu development.

Kitchens and teaching institutes need to channel the immense creativity that often exists amongst staff towards meeting the challenges of a sustainable food system. To inspire and excite chefs around the opportunities and the need for sustainability. This means unleashing the creativity of all levels of chefs towards innovation for sustainable nutrition and adopting diversity as a broad principle; from ingredients used through to types of cuisines explored.



## HOW TO BRIDGE FROM THE CURRENT MAINSTREAM TRAINING TO THIS FUTURE SKILL SET?

A number of key learnings emerged from the Future Plates initiative and piloting the new culinary curriculum:

- **This is part of a wider skills transition:** Critically, it is not enough to just focus on chefs - knowledge of sustainability needs to be embedded widely, to equip those working across food business functions from buyers to innovation, to make decisions that include sustainable nutrition as the goal, alongside traditional taste and commercial drivers.
- **We need to amplify the business case for change:** Building and amplifying the case for change is a key lever to helping culinary institutes and industry really understand why a shift in culinary skills is needed, and unlocking faster transformation.
- **Tasting is believing:** Taste is a great way to engage people in plant protein, to help them understand the sustainability issues relating to food and the huge culinary potential that a more diverse set of sustainable ingredients can hold.
- **It is a journey not a destination:** Courses do not need to be torn up and redesigned from scratch. The lessons we have developed (available in the [Future Plates Teaching Handbook](#)) are designed to be easily added on to most mainstream culinary courses, allowing trainers to insert relevant knowledge and skills into existing programmes and evolve courses and training from there.
- **It is a learning process, even for trainers:** Trainers and those around them also need to be given the chance to learn and evolve their understanding of sustainability and to develop their own skills.
- **Some practical shifts are required:** Both industry and culinary institutes may need to address practical challenges relating to sourcing and cooking with new or sustainable ingredients, as well as teaching the more theoretical aspects of sustainable production.



# ACCELERATING THE TRANSFORMATION OF CULINARY SKILLS EDUCATION

Based on these learnings we propose five key actions that the food industry and culinary institutions need to be driving forwards:

## Within organisation

### 1. Make the case internally to value and invest in training and development

Businesses and culinary institutes who want to remain viable and deliver on health and sustainability policies need to focus on building the capacity of their workforce to deliver sustainable nutrition.

### 2. Embed sustainability into existing courses and on-the-job learning

Chefs can have a positive impact on food sustainability challenges and strengthen business resilience if they are connected to the issues. Training need to evolve to reflect the dynamic shift to a sustainable and nutritious food system, which values key environmental and social goals, biodiversity and regenerative practices.

### 3. Harness chefs creativity to innovate and diversify towards sustainable nutrition

To harness the creativity of future chefs to develop menus which answer the need for sustainable nutrition, kitchen and teaching institute cultures need to encourage greater experimentation at all stages of chefs' careers. In particular by embracing the power of diversity, both in terms of ingredients and talent.

## Beyond organisation

### 4. Deepen connections with others on the journey

Chefs and the wider food sector need strong connections to support learning, inspiration and change across the industry, including connections throughout the value chain, with producers and suppliers.

### 5. Add your voice to the need for change:

To catalyse change at pace, wider momentum behind sustainable diets and greater advocacy for the importance of the evolution of culinary training is needed - including actors across the system championing and adding to the business case.

Acting both within and beyond an organisation increases the potential to influence the wider positive shift required

The creation of a movement in culinary training has the potential to reorient the tremendous creative energy of chefs towards the urgent need to shift mainstream diets, to harness the best of existing culinary culture in order to create a better future for food.

Note: The Future Plates Report and accompanying Handbook are not aiming to be an exhaustive review or position themselves as a superior approach to others working in this field.

Our objective is to raise the profile of this topic, share the knowledge gained, promote an ethos of testing and refining of different approaches and see how these resources might be adapted to to different settings and challenges in shaping the future food system.

# INTRODUCTION

## WHY DIETS NEED TO SHIFT

Food is at the heart of many of the world's environmental, social and economic challenges: among them how we address climate change and biodiversity loss, while also delivering healthy, nutritious food for all in the face of shrinking resources and a growing global population. The way that we produce and consume food urgently needs to transform: a sustainable nutrition approach is needed, that delivers health and nutritional outcomes whilst restoring the key ecosystems and farming livelihoods on which we depend.

One macronutrient in particular - protein - lies at the intersection of a number of major global sustainability challenges - such as land use change, the nitrogen cycle, malnutrition, biodiversity loss, animal welfare, sustainable livelihoods and climate breakdown - but it has also become a hot topic in its own right. For example, Western diets contain on average 20% more protein than recommended daily intakes,<sup>8</sup> with a large proportion of this coming from animal sources - despite a small but growing number of people varying their protein sources and identifying as 'flexitarian', often for health reasons.<sup>9</sup> And yet, driven by population growth and rising incomes in emerging economies such as Brazil and China, meat production is set to grow to 376 million tonnes by 2030<sup>10</sup> - a figure incompatible with the needs of a global economy with

net-zero emissions and which stays within environmental limits. To address this high impact area we convened the [Protein Challenge](#) - a multi-stakeholder collaboration across industry and NGOs - to tackle the question: "How do we provide up to 10 billion people with enough protein in a way that is healthy, affordable and good for the planet?" Thanks to various high profile reports including The EAT-Lancet Commission on [Food, Planet, Health](#),<sup>11</sup> it is now widely accepted that to achieve healthy diets within environmental limits and to stay within environmental limits, protein consumption needs to transform within a generation. This means significantly reducing food waste and excess consumption of animal protein in Western diets, while improving how protein is produced (often described as a "less and better" approach), and increasing protein diversity, in particular plant proteins.

**Ultimately, there is an urgent need to achieve a new normal for food and protein, that delivers positive outcomes for sustainability and health.**

In some places, the food landscape is already starting to shift, thanks to changing consumer tastes and expectations as well as growing awareness of the relationship between food (both production and consumption) and the environment and health.

Food service companies, retailers and their suppliers play a crucial role in almost every meal we eat, and thus have huge potential to scale up and accelerate progress in rebalancing protein. Forum for the Future's recent [Future of Food](#) report found that progress is underway, with 55% of the biggest food companies investing in plant protein products and 46% committing to tackle big sustainability issues such as deforestation in supply chains.<sup>12</sup> But, the vast majority of food companies lack joined-up strategies to address health and sustainability outcomes for food across their business. While most efforts have been channelled into product innovation, especially meat alternatives such as plant-based burgers and "chicken" pieces, action to build the right enabling conditions to bring about a mainstream shift to rebalance diets has been slow and fragmented.

As part of the Protein Challenge collaboration, in the Future Plates initiative we have been looking at how to catalyse further progress on [rebalancing diets](#). In a European context this initiative has been specifically exploring the need for an accompanying skills transition.



## WHY IS A TRANSITION IN CULINARY SKILLS NEEDED?

### Chefs play a key role in the shift to sustainable diets

Chefs have a very important role to play in helping to create a **“new normal” for our diets**: creating healthy, sustainable meals, with a better balance of plant and animal protein. There are more than 325,000 chefs in the UK alone. Their influence, economic heft and consumer reach is significant. More than 5 million meal kits are sold per month in the UK, and online food delivery sales went up by 11.5% at the start of 2020. The UK out-of-home food and beverage sector was worth £56bn in 2019, and in 2017, roughly 1 in 5 meals were eaten outside the home across Europe. All of these consumption occasions involve chefs - either cooking on premises, or in food innovation labs and manufacturing facilities. From food service to retail to trend-setting restaurants, chefs design and create millions of meals every day and influence both the food industry and general food culture. Sitting at the intersection between production and consumption, they make ingredient and sourcing decisions that shape supply chains, and create or strengthen trends that influence both the food industry and general food culture.

### The future food industry will require new skills

Pressure is mounting on the food industry to provide healthy, sustainable meals, with a better balance of plant and animal protein, and that means chefs need the right skills and knowledge to play their part. Product innovation in plant protein has accelerated rapidly in the last few years - our Future of Food report found that 79% of the largest global food and ingredient manufacturers are actively acquiring or investing in smaller plant-based brands and launching their own innovations. If they are to meet this growing demand for tasty, new sustainable products, product development chefs need the skills to work with different ingredients, textures and flavours, as well as a grounding in sustainability issues to translate organisational sustainability policies into sourcing and ingredient decisions. And chefs in hospitality settings need to be equipped with the skills to work effectively with (and sustainably source) these new ingredients and products, otherwise they are at risk of lagging behind the rest of the industry.

As agricultural conditions shift due to climate change and as our understanding grows of the benefits of crop diversity for human and soil health, it is likely that we will grow and use different crop ingredients. Already more exotic grains such as freekeh and lesser used local grains such as **spelt** have become more visible in Europe and are increasingly a focus for mainstream snacks and meals. The market for other alternative grains and vegetables is expected to grow, and chefs will need to understand how to get the best tastes, textures and nutrition from this more diverse set of ingredients as well as navigating the complexities of local and global sustainability opportunities and risks.

### **Unlocking the power of chefs**

Our engagement with chefs across food sectors has revealed that many chefs lack confidence to deliver meals with a better balance of protein, due to gaps in their skills and knowledge. This is one of the most frequently highlighted obstacles to making rebalanced protein the norm, alongside a lack of good, affordable plant-based ingredients in menus and a perception that rebalanced dishes aren't always met with enthusiasm by consumers. Even in this last area, chefs

have a role to play - especially in public and workplace canteens, where alongside the design and flavours of each dish, they can also often **influence the name** and the **order that dishes appear on a menu or display** - both of which have been proven to influence the likelihood that consumers pick a plant-based meal. Sometimes they even have space to educate consumers about the health and environmental benefits of their dishes - all of which is difficult to do if chefs lack the skills and knowledge to deliver tasty plant-based meals or understand the sustainability challenges relating to food.

### **Culinary training needs to evolve**

Discussions with the wider industry reinforce this picture, with many saying they find it difficult to find talent with the right skills and knowledge to build sustainable, nutritious meals and products. Neither the traditional curriculum for student chefs, nor on-the-job training, addresses this sufficiently; plant-based cooking skills and sustainability knowledge are not currently part of standard culinary training. This limits the decisions chefs and others going into food management make about ingredients and sourcing, as well as how they

present dishes and products to consumers.

So, in a new normal of sustainable food, and particularly protein, what skills and knowledge will be the norm? And how do we get there? The Future Plates initiative- as part of the wider Protein Challenge - has sought to answer some of these questions in a European context.

**“The next generation of chefs can have a hugely positive impact on the future of food. To empower them to do this it is imperative that we provide them with the skills and knowledge to embrace sustainability from their very first day working in the kitchen.”**

Rosie Rayner-Law, Sustainable Restaurant Association



## REFLECTIONS ON THE IMPORTANCE OF INCLUDING PLANT-BASED SKILLS AND SUSTAINABILITY INTO CHEFS' CURRICULUMS

**Christophe Schmitt, Expert Proteins, Nestlé Research Lausanne**

“Demand is growing for food that is both good for you and for the environment. It is widely recognized that we need to rebalance our diets with a greater emphasis on plant-based ingredients to achieve this goal.

Offering more healthy choices with a better environmental footprint is key for Nestlé. Thus, our company is continuously strengthening its portfolio of plant-based product range including pea, soy- and wheat-based burger patties, sausages, mince meat, chicken filets and

various prepared dishes for example under the *Garden Gourmet* and *Sweet Earth* brands.

In addition, future chefs play an important role in shifting our diets towards more plant-based ingredients, both within hospitality and food innovation. To inspire and support the next generation of hospitality professionals, the Nestlé Professional out-of-home business has organized the *Toque d'Or* competition for more than 30 years between hospitality management schools, with a special emphasis on sustainability.”

## FUTURE PLATES: PILOTING A NEW CURRICULUM FOR MAINSTREAM CULINARY TRAINING

The Future Plates initiative attempts to accelerate the process of updating chefs' skills training to place sustainability at the heart of culinary education. Through [engagement with influential chefs](#) such as Alexis Gauthier, Raymond Blanc and Olivia Gautier, [expert roundtables](#) that brought together student chefs and representatives of the food industry, and industry-wide [chef surveys](#), the initiative explored the pioneering work already underway to inspire more plant-based cooking and eating, and the opportunity to evolve chefs' skills to support and accelerate this change.

“Ethically sourcing ingredients is a way to keep clients and chefs engaged because then they're excited about food.”

Jennifer Irvine, entrepreneur and founder of premium food delivery service The Pure Package, March 2020 “Future Plates” event

“Consumers care about provenance, short supply chains and what goes into their food. As consumer knowledge around the topic grows, those businesses with good practices and transparent practices will succeed.”

Lucy Pedrick, Head of Insights and Customer Experience, Bidfood, March 2018 “Future Plates” event



In collaboration with the University of West London, the Future Plates initiative piloted a [new curriculum](#) of [eight new lessons](#) on key sustainability themes from September - May 2020, to equip chefs with the skills and knowledge to create rebalanced dishes and products as they begin or continue their careers. The aim was to create shareable resources, to try them in practice, to see what worked and understand what more might be needed to make it widely accessible.

The pilot has revealed the enormous value of using taste experiences to shift mindsets and engage students in complex sustainability issues, and highlighted some key actions that different parts of the industry can take to accelerate the transition in mainstream training, as suggested in this report.

The accompanying Future Plates Handbook for chef lecturers, teachers and culinary skills trainers provides a toolkit of ready-to-use teaching principles, tips and resources created during the pilot process - including lesson plans and presentations - to integrate into existing culinary courses, and help trigger more experimentation with ways to teach chefs about sustainable food.

# STARTING THE JOURNEY: WHAT TYPICAL TRAINING LOOKS LIKE TODAY



## A LEGACY OF CLASSICISM?

A common piece of insight from across the food industry, including food professionals who trained as chefs decades ago, is that mainstream culinary training has not changed in years.

The same course structures are widely followed across different levels of qualification, from further education and vocational courses, to university degrees. This is true across different geographies - through Western-style training in culinary arts delivered in the UK and Europe, but also around the world.

Most mainstream course content is heavily influenced by “classic” European/French cuisine, with much of it (but not all) structured around key techniques for cooking with animal proteins (for example, red meat, poultry and fish) as the star ingredient. Learning how to get the best from vegetables and understanding the nutritional value of diverse plant proteins is usually positioned as a lower priority, with vegetables often viewed as a side dish. Courses generally contain very little content on sustainable cuisine, with minimal time spent teaching students about the importance of sustainable sourcing, reducing food waste and animal welfare. And from discussions with chefs, culinary trainers and industry, the perception is that little time is spent on reformulation and cooking of traditional meat or dairy based recipes with

less animal protein and incorporating more alternatives.

It’s important to note that some establishments do address some sustainability issues and concepts in parts of their training courses, but in essence the understanding of what comprises basic or core culinary skills has not evolved significantly, and largely follows this ‘classic’ structure. With more than 28,000 culinary students in the UK alone<sup>13</sup> and a diverse range of institutes catering to culinary education, from degree level courses and high profile culinary institutes to further education colleges, apprenticeships and on the job training, a shift in core culinary skills across all courses is essential to creating a transition to sustainable nutrition in Western diets.

**There is a mismatch between what chefs and other food management students are being taught to cook and value and the and the urgent shifts needed in consumer diets for health and sustainability**



## WHERE IS CHANGE HAPPENING?

There are glimmers of change in culinary training as consumer demand and corresponding industry innovation around plant proteins grows, possibly also driven by the increased interest in sustainability amongst younger generations entering the culinary and hospitality industry. An increasing number of masterclasses, modules, courses and diplomas in plant-based cooking have emerged, including Le Cordon Bleu's [Diploma in Plant-Based Culinary Arts](#), the Culinary Institute of America (C.I.A.)'s [Farm-to-Table](#) focus in their bachelor degree and now the University of West London's [Culinary Arts degree](#) which incorporates sustainable nutrition.

Beyond training, the [Chefs' Manifesto](#), facilitated by the SDG2 Advocacy Hub and co-created by over 130 chefs from 38 countries (today counting over 700 chefs

globally) has broken new ground in bringing together the chefs sector for a common aim. It offers a thematic framework, which outlines how chefs can contribute to the Sustainable Development Goals through simple, practical actions. Apart from hosting regular chef events and elevating chefs' voices in diverse forums globally, the Chefs' Manifesto hosts a podcast and regularly publishes case studies on how chefs are translating the action plan in their kitchens to support and inspire change. [The Menu of Change Initiative](#), a joint venture between C.I.A. and Harvard Business School - also works towards making plant-forward dining a mainstream concept in the culinary profession and food service industry. They offer a clear vision for a new way to cook and serve food to others – using a style of cooking and eating that celebrates, but is not limited to, plant-based foods.

The emergence of plant-based courses and a wider movement to champion and enable the provision of accessible, sustainable and nutritious food is to be celebrated, as they provide increased awareness and access to specific skills for those who want or need them. However, these advancements need to be taken a step forward, to be integrated into mainstream courses so that they can become part of the default skills that all chefs and culinary sector employees are equipped with. In the UK, this is especially true at college or apprenticeship level, where many courses have no available plant-based add-ons, and incorporate only a limited knowledge of sustainability concepts. Plant-based courses also only go so far. They do not provide an understanding of how to rebalance traditionally meat-heavy dishes to contain less animal-sourced protein and do not always incorporate lessons on broader sustainability questions such as food waste, animal welfare, fair trade or sustainable production that are key to shifting toward a more sustainable food system.

In some settings, offering these areas as a standalone course or optional add-on module may be the easiest option for adding new skills. But with almost 5 million people<sup>14</sup> employed by the food and beverage sector in Europe today, the question remains of how to transform culinary training now, to incorporate the core skills that will be needed for a mainstream shift towards future-fit food production and consumption.

**“Students are coming into this industry with a lot of ideas about sustainability, with a focus on plant-based food, so Cordon Bleu responded by developing a culinary programme and degree modules focused specifically on this topic. By rolling out the training internationally we’ve also drawn on lots of new ideas and ingredients”**

Elaine McCarthy, Le Cordon Bleu - “Future of Culinary Education panel” - March 2020 “Future Plates” event.



**DESTINATION: WHAT SKILLS ARE  
NEEDED? WHAT SHAPE MIGHT  
FUTURE TRAINING TAKE?**



## COURSES STRUCTURED AROUND TECHNIQUES AND THE CHEMISTRY OF COOKING

To prepare chefs to respond dynamically to different ingredients, menus and sustainable sourcing requirements, a greater focus is needed on techniques, processes and the chemistry of cooking. Culinary students need to learn skills that are transferable across animal and plant proteins and vegetables, rather than going through a course structure delineated by core animal proteins. In practice this means that rather than dividing chapters or modules into 'Red meat', 'Poultry' and 'Fish', you might have chapters or modules on techniques such as 'Poaching', 'Grilling' and 'Fermenting' instead. This approach would be closer to how pastry techniques are taught - built around the various techniques rather than the ingredients per se. This involves a shift away from learning certain "classic" recipes, to a focus on tastes, flavours and textures and how to obtain them.

**“Cooking with plant proteins requires creativity, skill and enthusiasm. Creating great tasting dishes with plant proteins uses skills in flavour pairing, cooking techniques to develop flavours and a good knowledge of herbs and spices”**

Luigi Carola, Chefmanship Manager, Unilever - Global Food Category Design



## FOCUS ON REBALANCED MEALS

One transition that has received little emphasis is the importance of understanding how to cook rebalanced meals, with less and better meat - working with a combination of animal and plant protein to create a flavoursome, well textured dish. In the university pilot, it was the practical experimentation with different proportions of animal and plant protein in dishes that really changed the mindsets of students and lecturers and opened their eyes to what is achievable when experimenting with different flavours and textures.

One key challenge recognised through the pilot was that incorporating more sustainability themes and practical lessons may mean that training courses or lessons need to be longer or include more content. The “basic” skills that chefs are expected to know may need to expand: chefs do still need to know how to cook meat and fish, but they also need to be better equipped to cook vegetarian, vegan and rebalanced dishes. This could lead to some classic, but high-end, dishes that chefs usually learn - such as souffles - becoming optional add-on courses or being seen as additional skills to be learned on the job, so that more time can be spent on more widely applicable core skills that are required for dishes with less or no animal protein.

## UNLEASHING THE POWER OF DIVERSITY AND INNOVATION

Chefs already have to be very creative – constantly refining dishes to improve the taste profile, customer satisfaction and to operate within tight budgets. This works at its best in a collaborative culture where all levels of chef are enabled with the right skills and permission to experiment. Our work highlights the need to inspire chefs to enhance and channel that innovation towards a different end goal: creating new dishes that celebrate sustainable nutrition.

A key aspect of this shift is valuing a diversity of food ingredients, cultures, flavours and techniques. In both the pilot and the wider industry conversations, many chefs talked about looking to other food cultures for inspiration around sustainable nutrition, especially those with mature vegetarian or vegan traditions, such as southern Indian and Middle Eastern cuisines. Unleashing the power of this diversity requires a focus on learning about and experimenting with lots of cuisines and ingredients to develop the skills needed.

“When I did my chef training, I was told that fusion was this niche type of cuisine that hadn’t really taken off and never would. ‘Fusion’ was ‘confusion’. Well, it’s not.

There are many techniques out there that are embedded in ancient traditions. They offer rich ground for inspiration once we look past traditional French cooking methods and break the rules to explore them, and even better to incorporate them in our classic culinary techniques.”

Amir Mousavi, Group Development Chef,  
Gather & Gather, part of CH&CO



# HOW TO BRIDGE FROM THE CURRENT MAINSTREAM TRAINING TO THIS FUTURE SKILL SET?



## LEARNINGS FROM THE PILOT - HOW TO GET STARTED

From the lessons learnt through the culinary training pilot and the wider work with chefs and the food industry, we found that:

### It is a journey, not a destination

It is clear that tearing up current courses and starting from scratch with sustainable nutrition embedded at the core, is simply not an option in most training environments. At the same time, our understanding of how to live sustainably on this planet is constantly evolving. It helped to start by trying out a few lessons, inserting some relevant knowledge and skills into existing programmes and evolving the courses and training from there. The pilot materials were designed around existing structures to be widely replicable and relevant and we encourage teachers and culinary skills professionals to try them, expand on them and continue to share your evolved materials with others.

### Tasting is believing

Taste is a great way to engage people with plant proteins, to help them understand the sustainability issues relating to food and the huge culinary potential that a more diverse set of sustainable ingredients can hold. It was more challenging to engage students in topics such as sustainable livelihoods, which have less of an obvious taste angle. One route to support this engagement could be through schemes like "Skype a farmer", which offer students an emotional connection to the issues, helping to bring the themes to life.



**“The look on the students faces when they tried different grains, their reaction to the different flavours, was great.”**

Shamin Talib, UWL Lecturer, extract from the Biodiversity - grains lesson



## We need to amplify the business case for change

The need to transition skills has received little attention up to now, with much of the energy around protein to-date focussed on new product innovation among industry players. One lever to unlock the transformation is for more culinary institutes and industry to really understand why we need a shift in culinary skills. In this report, the main reasons for transitioning to future skills are set out, based on our engagement with the hospitality industry and institutes. It is by no means an exhaustive case and we are keen to see others to both add to and amplify it.

## It is a learning process, even for trainers

Teaching these topics requires confidence which is difficult when the topics are new and the sustainability field is rapidly changing. Trainers and those around them need to be given the chance to learn and evolve their understanding of sustainability and to develop their own skills. This translates into industry too, with those in positions to influence menus, budgets, sourcing or management also benefiting from an improved understanding of sustainability challenges and the implications for the food industry and the decisions they themselves make.



## Some practical shifts are required

A shift to cooking with different ingredients and introducing more theoretical learning into culinary courses, comes with some practical considerations. Trainers may need to engage their suppliers to find more diverse ingredients at a price that works with their budgets. Classroom settings may be preferred to teach some of the more theoretical elements of sustainability, if the kitchen setting doesn't lend itself to those discussions. If sustainability topics are additional to existing course contents, then there may also be implications for lesson lengths, or the number of lessons in the course, both of which would need to be navigated with school or university authorities. Many of these practical considerations will be true for industry as well as culinary institutes, with the need for different ingredients, cooking equipment or kitchen layouts all being pertinent questions for hospitality and food businesses to consider.

**Trainers need to be given the chance to evolve their understanding of sustainability and to develop their own skills.**

## This is part of a wider skills transition

It's not just enough to transition chefs' skills. Across food business functions, from buyers to innovation, there are a number of roles that need to be equipped to make decisions based on delivering sustainable nutrition, alongside traditional taste and commercial drivers. For example, UK food service company BaxterStorey found that by exposing their operational managers to the same rebalanced meal training as their chefs, it enabled the whole business to align behind delivering sustainable nutrition, with budgets, messaging and client interaction all working towards the same end goal.

The importance of equipping those working on menu development and agreeing budgets with an understanding of key sustainability themes cannot be underestimated. When operational managers understand the potential commercial opportunities that come with transitioning to lower food waste and rebalanced dishes using more plants and less but higher-welfare meat, it is a key enabler for agreeing shifts in budgets and procurement practices.

**A wider skills transition is needed to enable the food industry to make decisions based on delivering sustainable nutrition, alongside traditional taste and commercial drivers.**

## BAXTERSTOREY CASE STUDY:

**In brief:** **BaxterStorey** is the largest independent foodservice business in the UK delivering services to the business and industry and University sectors. The business has been built by producing fresh food from local, seasonal ingredients, sourcing as much UK food as possible.

In 2018 they created Food Equilibrium (EQ). More than just a sustainability training programme, Food EQ aimed to change how their business thought about food - from chefs, right the way through to operational managers and procurement teams. The programme has helped the business to transition to deliver rebalanced menus with increased plant protein and exciting flavours - helping their clients to look after their people and the planet's health.

### What are they doing differently?

- BaxterStorey went beyond changing their culinary chefs training - they recognised the need to take their whole organisation with them too and embed the culture shift in those who work with chefs as well as among chefs themselves.
- Chefs now learn about broader sustainability topics, techniques for cooking vegetables and plant proteins as well as how to enhance flavours with different ingredients, and - importantly - why sustainable nutrition is critical to the business.
- BaxterStorey used practical cooking workshops to engage the whole business and start to shift mindsets around how increasing use of plant proteins could benefit the organisation. This involved giving operational managers the chance to taste and cook both plant and meat-based dishes, which was a great way to engage them in discussions around textures and flavours as well as wider sustainability benefits and implications for the business.

### What is the impact?

As a result, the chefs are excited about a new creative challenge and making a positive impact, the business is operating more sustainably, the customer offer is enhanced, which supports the financial bottom line, and BaxterStorey's consumers are eating great tasting and healthier food.



## THE CASE FOR CHANGE

### Culinary Institutes:

**Recruit leading talent:** The number of students choosing a career in hospitality or the culinary industry is falling<sup>15</sup> and, combined with the challenges facing the industry from COVID-19, recruiting students for culinary courses may be difficult. Research has shown that young people are more likely to value sustainability<sup>16</sup> than other generations, and often see their workplace as a key route to influencing the sustainability agenda.<sup>17</sup> By including broad sustainability themes and plant-based cooking techniques, institutes can connect to the values of their prospective students and offer a vision of a thriving future culinary sector where sustainable nutrition is at its heart.

**Adapt to industry trends:** The conversations with industry highlighted the perception that teaching institutes often lag behind industry trends, and may be less aware of the realities of what

operating in a sustainable future will entail - for instance the need to respond dynamically to ingredient availability due to climate impacts, or how to incorporate a company's sustainability policies into menu development within a strict budget. By investing in continual development of trainers, and fostering better connections with industry to understand and share resources about these new trends, institutes will be better placed to stay relevant and offer students the skills required for a successful career.

**Job conversion:** The ability to get a job after graduating or finishing their training is vital for most culinary students and a key part of how they decide where to study. By including skills in the mainstream curriculum that will increasingly be sought after and valued by the industry, institutes are setting their students up for better chances of getting a job. This is likely to be particularly relevant in the economic downturn expected from the COVID-19 crisis.

**“Graduates of such a course will be gold dust to the industry”**

Angela O'Donovan, Bidfood, UWL course validation event

## Hospitality, manufacturing and retail industry:

**Role of the hospitality sector in an economic downturn:** Downturns are bad for hospitality - consumers eat out less, cutting back on expenditure,<sup>18</sup> but especially so during the current pandemic where the downturn is accompanied by a fear amongst consumers (and staff) of being in close proximity to others. By ensuring chefs are equipped to create sustainable, nutritious and innovative meals, the sector can preempt consumers' growing demands for new ways of eating, particularly as many consumers may not yet be equipped to create these types of meals in their own homes.

**Connect with longer term food trends:** Vegetarian, vegan and flexitarian diets have all grown in popularity in the last few years, with 14% of the UK population now identifying as flexitarian.<sup>19</sup> Interest in international cuisine and more niche diets, such as [keto or raw food diets](#) has also increased. In the last few years there has been a flurry of specialist vegan and vegetarian restaurant openings, with even high end restaurants such as Gautier shifting their menus to be largely vegetarian. By structuring training around cooking techniques, flavours and textures, and

exploring how to get the best from different types of ingredients, hospitality businesses and product developers are ensuring their chefs have the ability to remain connected, experiment and satisfy evolving consumer food preferences.

**Satisfy legislation:** The EU [Farm to Fork Strategy](#) has already set expectations around [promoting and facilitating a shift to healthy sustainable diets](#) and valuing soil health in production. Food policies are also expected to evolve in other countries, including with the upcoming UK Food Strategy. [Fourteen of the C40 cities](#)<sup>20</sup> have also committed to working citizens to implement the planetary health diet by 2030, including using their procurement powers to change what kind of food cities buy, and introducing policies that make healthy, delicious and low-carbon food affordable and accessible for all. By equipping chefs to understand rapidly changing sustainability issues and the impact they may have on menus and sourcing, businesses are setting themselves up to succeed as legislation around carbon pricing, nutrition, agriculture, health and trade evolves.

**Adaptable to availability:** Crop productivity has [already fallen in some regions](#),<sup>21</sup> as temperatures rise or rains wash away crops, and this is only expected to increase as the

climate warms and extreme weather patterns affect crops in both short and longer term. The general consensus amongst experts points to an increasing unpredictability and frequency of these events. All this means availability of ingredients is likely to change - and chefs will need to be more adept at adapting recipes to use alternative ingredients and understand how to work with currently more niche ingredients, such as sea kale. By ensuring that their workforce understands how to source, budget and cook with different ingredients and to adapt quickly to any availability issues, hospitality businesses are ensuring they remain relevant and viable.

**Reputational risks:** So far the hospitality industry has come under less scrutiny for its sustainability policies and commitments than the wider food industry - but this is likely to change. Consumers increasingly expect and want their food to be sourced sustainably.<sup>22</sup> The UK in particular, post Brexit may be exposed to less regulated markets and consumers may demand more transparency about how their food has been produced. By ensuring both chefs and operational teams understand broader sustainability topics, they will be better equipped to make clear decisions around sustainable sourcing and menu development and reduce reputational risks to the business.

# ACCELERATING TRANSFORMATION OF CULINARY SKILLS EDUCATION



## 5 ACTIONS FOR TRANSFORMING CULINARY SKILLS EDUCATION

Covid-19 has highlighted the urgency of transitioning to a more sustainable and resilient food system, with diets that support both human and planetary health. A rapid evolution in culinary skills and knowledge is needed if this shift is to happen within the next decade to help avoid breaching the key limit of 1.5 degrees of global warming. It is critical that we accelerate progress, moving from pockets of plant-based courses and pioneering actions, to a mainstream shift in culinary education around sustainable nutrition.

We need to create a movement to transform training, based on taste and cooking experiences

The Future Plates initiative has identified five ways to accelerate the transformation - relevant for both culinary institutes and schools and those who work in the hospitality industry and wider food businesses. Over the next few pages we lay out specific actions that organisations can take to accelerate progress in each of the 5 areas.

### Within organisation

#### 1. Make the case internally to value and invest in training and development

Businesses and culinary institutes who want to remain viable and deliver on health and sustainability policies need to focus on building the capacity of their workforce to deliver sustainable nutrition.

#### 2. Embed sustainability into existing courses and on-the-job learning

Chefs can have a positive impact on food sustainability challenges and strengthen business resilience if they are connected to the issues. Training need to evolve to reflect the dynamic shift to a sustainable and nutritious food system, which values key environmental and social goals, biodiversity and regenerative practices.

#### 3. Harness chefs creativity to innovate and diversify towards sustainable nutrition

To harness the creativity of future chefs to develop menus which answer the need for sustainable nutrition, kitchen and teaching institute cultures need to encourage greater experimentation at all stages of chefs' careers. In particular by embracing the power of diversity, both in terms of ingredients and talent.

### Beyond organisation

#### 4. Deepen connections with others on the journey

Chefs and the wider food sector need strong connections to support learning, inspiration and change across the industry, including connections throughout the value chain, with producers and suppliers.

#### 5. Add your voice to the need for change:

To catalyse change at pace, wider momentum behind sustainable diets and greater advocacy for the importance of the evolution of culinary training is needed - including actors across the system championing and adding to the business case.

Acting both within and beyond an organisation increases the potential to influence the wider positive shift required



## 1. MAKE THE CASE INTERNALLY TO VALUE AND INVEST IN TRAINING AND DEVELOPMENT

Support managers and trainers to understand the need for training and capacity building around sustainable nutrition. This includes enabling them to develop their own skills and knowledge, as well as helping managers in the food industry to understand the need for a mainstream transition, as well as to experience for themselves the practical possibilities of rebalanced cooking.

### Call to Action:

- **Use this report and other resources** to make the case for valuing and investing in building the capacity of chefs, trainers, students and those who work around them.
- **Carry out skills and capabilities reviews** and allocate training budgets to develop the skills of those with responsibility for teaching, cooking and supporting delivery of sustainable, nutritious menus.
- **Find ways to bring business and course managers on board** with the changes, perhaps through running cross organisational workshops to bring the taste experience to life, or through refining the business case for your organisation.
- **Support lecturers and trainers** to source different ingredients and equipment more suited to plant-based cooking. Explore ways to provide classroom-based learning for theory topics as well as kitchen-based learning for practical training.

## 2. EMBED SUSTAINABILITY INTO EXISTING COURSES AND ON-THE-JOB LEARNING

Evolve culinary training to reflect the dynamic shift to a sustainable and nutritious food system, that values key environmental and social goals, biodiversity and regenerative practices which broadly put more back into the soil than they take out.

This evolved training will unleash the positive impact that chefs can have on food sustainability challenges and their ability to strengthen business resilience in the face of changing food production practices and consumer trends.



### Call to Action:

- **Adapt and experiment with the available resources**, building confidence by trialling lessons that fit within existing course or training structures. You are encouraged to download the culinary skills toolkit which includes teaching resources for eight lessons on different sustainability themes, incorporating theory and practical elements and linking the two together, as well as tips on how to teach each lesson. Please do try it out, adapt it to suit your needs and share your expanded / adapted versions widely.
- If possible, skills providers are encouraged to **redesign courses more fundamentally** - with future skills at the heart of them. The Future Plates initiative would like to hear from anyone who takes this step - we would be keen to support or amplify your materials and experiences.
- **Get in touch to explore how Forum for the Future** can support you in integrating more sustainable nutrition content within your courses and training or how we can help you to embed sustainability across your business strategy and value chain.

### 3. HARNESS CHEFS CREATIVITY TO INNOVATE AND DIVERSIFY TOWARDS SUSTAINABLE NUTRITION

Harness the creativity of future chefs to develop menus which answer the need for sustainable nutrition, by encouraging experimentation and learning at all stages of chefs' careers. In particular through using a broader variety of ingredients and cuisines, and unleashing the diversity of talent within the industry.

#### Call to Action:

- **Inspire your team** by introducing them to great-tasting, sustainable/healthy ingredients; and ensure they have the basic skills to use them.
- **Encourage your team to be creative**, to experiment with new approaches, ingredients and wider food cultures for sustainable nutrition. For example, you could challenge them to create a zero-waste, bin-free kitchen, or to work with a new flavour each week.
- **Empower junior members of your team** to develop their skills, put forward ideas around sustainable nutrition and to have opportunities to challenge menu or sourcing decisions.
- **Make sure job roles reflect a sustainable hospitality and food sector**, with those future skills embedded into job descriptions and recruitment. For example, are there other kitchen stations, beyond just the meat or fish stations, where you need to have highly skilled staff? And what other skills do you expect from applicants, such as flexible and seasonal use of ingredients, sustainable sourcing or ability to develop exciting flavours in plant-based cooking?
- **In culinary competition briefs, incorporate sustainability** and use of more diverse, sustainable and healthy ingredients and techniques.
- **Embed sustainable nutrition into innovation** of new products or dishes, with an active focus on skills development.

## 4. DEEPEN CONNECTIONS WITH OTHERS ON THE SAME JOURNEY

Develop strong connections to support learning, inspiration and change across the industry. These include connections throughout the value chain, with producer, suppliers and culinary institutes. These connections can foster a sense of shared direction, to help signal where demand is heading and what implications that may have for ingredients, training, sourcing, menus and jobs. And, through crowd-sourcing solutions to common challenges, providing practical examples of actions to take and taking inspiration from shared recipes, the transition can be made easier for all.

### Call to Action:

- **Work with existing networks** such as the Chefs' Manifesto or Menus of Change to strengthen and deepen connections across culinary institutes and the hospitality industry to develop pioneering action, innovative training courses and cross fertilise resources.
- **Work with suppliers to voice your demand** for different ingredients and to understand the challenges and opportunities around sustainable sourcing.
- **Communicate what you are doing** to evolve culinary education; what you have seen or where you think things need to go next and how to build the right conditions for that to happen.



“Chefs have a great platform to inspire and influence what and how we eat. However, to come up with innovative ways to address some of the greatest challenges of today, such as malnutrition, health and climate, chefs need to be equipped with the right tools.

The only way we can do this is through collaboration and advocacy, through learning across borders and sectors. Therefore, it is crucial to bring chefs together through projects like the Future Plates initiative, in order for them to share their knowledge and achieve greater impact in championing a sustainable food future.”

Paul Newnham, Chefs' Manifesto

## 5. ADD YOUR VOICE TO THE NEED FOR CHANGE

Advocate for the need to evolve culinary training and champion the business case for shifting towards sustainable diets; in order to create urgent momentum behind a transition to sustainable nutrition.

### Call to Action:

- **Amplify the business case for change** in mainstream culinary training and the shared agenda around creating sustainable future for the food industry.
- **Advocate for sustainability to be incorporated** into more competition briefs, qualifications and public procurement briefs. Talk to your students, trainers, clients and consumers about sustainable nutrition and help shift their mindsets in relation to plant-based protein.
- **Get in touch to find out how you can be part of the Protein Challenge collaboration**, working alongside a diverse range of food sector partners to create positive shifts in the food system.



# CONCLUSIONS



## IT IS TIME TO UNLEASH THE TALENT OF TOMORROW

It's an exciting time to start a food industry career.

Chefs and other culinary professionals have huge potential to contribute to changing how everybody eats, for the better. Preparing chefs for these future careers is urgent and critical. To be ready and equipped for successful and fulfilling careers in a fast-changing food industry, they need a sound understanding of the sustainability challenges and opportunities food businesses face today and will do in the coming years. And they need the skills and knowledge to create great-tasting, sustainable, healthy and nutritious meals and food products.

By creating a movement in culinary training that centres around these skills and a culture of experimentation, there is potential to reorient the huge creativity of chefs towards the urgent sustainable dietary shift as soon as possible, in order to gear the best of existing culinary culture towards creating a better future around food.

**“We have ten years to go on the SDGs. In order to achieve a sustainable food future, culinary training is absolutely critical. We need to think about what the future is going to require in terms of the types of foods we are to eat and what should make up our plates.”**

Paul Newnham, Chefs' Manifesto

Everyone has a role to play; from guest chefs running master classes in culinary institutes; to food manufacturers highlighting the demand for sustainability skills; and trainers trialling and sharing new approaches to lessons; or those who are in a position to influence the criteria in culinary assessments or competition briefs ensuring sustainability is fully incorporated. Young people going into culinary careers have great expectations of sustainability and are keen to rise to the challenge of creating menus that reflect a sustainable food future. That talent just needs to be unleashed.





## ACKNOWLEDGEMENTS AND FURTHER INFORMATION

### Acknowledgements

We would like to thank all the Future Plate initiative partners, the attendees and speakers from the roundtable and UWL events and specifically to the following individuals and wider organisations for their input:

#### University of West London:

Ben Christopherson, Peter Cross, Tarik Ramjaun, Shamin Talib, Nathan Vasanthan

#### BaxterStorey:

Mike Hanson

#### Bidfood:

Lucy Pedrick, Angela O'Donovan

#### Chefs' Manifesto:

Paul Newnham

#### Le Cordon Bleu:

Elaine McCarthy

#### The Humane Society:

Sean Mackenney

#### Nestlé Professional:

Christophe Schmitt

#### Sustainable Restaurant Association:

Rosie Rayner-Law

#### Unilever Chefmanship team:

Igor Zago - Global R&D Manager and Innovation Chef

Luigi Carola - Chefmanship Manager, Global Food Category Design

Ozgun Ozenen - Global Innovation Chef R&D

#### World Resources Institute:

Sophie Attwood

#### WWF UK:

Sarah Halevy

**Skills survey contributors:** Amir Mousavi (Gather and Gather, part of CH&CO), Mark Breen, Nicholas Wilkinson, Peter Lack (Nomad Foods)

#### Report authors at Forum for the Future:

Sophie Robins, Geraldine Gilbert, Roberta Iley, Lesley Mitchell, Joanie Koh

#### Further information

Further information on transforming culinary training and harnessing the power of chefs to transform the food system is available at:

[Chefs' Manifesto](#)

[Menus of Change](#)

[Ingredients for a Sustainable World: the chefs good food handbook](#)

[Food Forever, Lars Charas](#)

[Future 50 Foods - WWF and Knorr](#)

## REFERENCES

- 1 People 1st (2017) The chef shortage: A solvable crisis? Available at: <https://www.people1st.co.uk/chef-shortage/>
- 2 Guardian (2019), Goodbye beans on toast as families turn to recipe kits. Available at: <https://www.theguardian.com/food/2019/mar/16/british-home-cooks-order-five-million-recipe-kits-a-month-goodbye-beans-on-toast>
- 3 Food Navigator (2020), Ready-meals: Success – and struggle – amid coronavirus pandemic fuelled by retail channels. Available at: <https://www.foodnavigator.com/Article/2020/04/07/Coronavirus-Ready-meal-sector-hit-by-fluctuating-demand>
- 4 NPD Group (2018), 5 eating out trends to watch in 2019. Available at: <https://www.npdgroup.co.uk/wps/portal/npd/uk/news/press-releases/npd-group-five-eating-out-trends-to-watch-in-2019/>
- 5 IRI (2017), 1 in 5 meals eaten out of home as European consumers favour service over home cooking. Available at: <https://www.iriworldwide.com/gr-gr/insights/news/1-in-5-meals-eaten-out-of-home-as-european-consumers-favour-service-over-home-cooking-el>
- 6 FoodDrinkEurope (2019), Data & Trends 2019 report. Available at: [https://www.fooddrinkeurope.eu/uploads/publications\\_documents/FoodDrinkEurope\\_-\\_Data\\_Trends\\_2019.pdf](https://www.fooddrinkeurope.eu/uploads/publications_documents/FoodDrinkEurope_-_Data_Trends_2019.pdf)
- 7 People 1st (2017) The chef shortage: A solvable crisis? Available at: <https://www.people1st.co.uk/chef-shortage/>
- 8 Wilson, B. (2019), Protein mania: the rich world's new diet obsession. The Guardian, 4th January 2019. Available at: <https://www.theguardian.com/news/2019/jan/04/protein-mania-the-rich-worlds-new-diet-obsession>
- 9 YouGov (2019), Whitepaper: Is the future of food flexitarian? p.4. Available at: <https://yougov.co.uk/topics/resources/articlesreports/2019/03/18/future-food-flexitarian>
- 10 World Health Organisation, Global and regional food consumption patterns and trends. Available at: [https://www.who.int/nutrition/topics/3\\_foodconsumption/en/index4.html](https://www.who.int/nutrition/topics/3_foodconsumption/en/index4.html)
- 11 Eat Lancet Commission (2019), Food Plant health: Healthy Diets from Sustainable Food Systems. Available at: <https://eatforum.org/eat-lancetcommission/eat-lancet-commission-summary-report/>
- 12 Forum for the Future (2020), The Future of Food: are food businesses on track to deliver a sustainable protein system by 2040?. Available at: <https://www.forumforthefuture.org/the-future-of-food>
- 13 People 1st (2017) The chef shortage: A solvable crisis? Available at: <https://www.people1st.co.uk/chef-shortage/>
- 14 FoodDrinkEurope (2019), Data & Trends 2019 report. Available at: <https://www.fooddrinkeurope.eu/news/press-release/fooddrinkeurope-releases-data-trends-2019/>
- 15 The Caterer (2018)R, New data suggests 17% fall in the number of chefs. Available at: <https://www.thecaterer.com/news/restaurant/new-data-suggests-17-fall-in-number-of-uk-chefs> and Finedining Lovers (2019), Restaurant Staffing Crisis in Free Fall. Available at: <https://www.finedininglovers.com/article/restaurant-staffing-crisis-free-fall>
- 16 World Benchmarking Alliance (2018), Young people and the sustainability agenda: Three avenues for impact. Available at: <https://www.worldbenchmarkingalliance.org/young-people-and-the-sustainability-agenda-three-avenues-for-impact/>
- 17 Deloitte (2020), The Deloitte Global Millennial Survey 2020. Available at: <https://www2.deloitte.com/global/en/pages/about-deloitte/articles/millennialsurvey.html>
- 18 Hotel News Now (2018), Hoteliers around the globe reflect on the Great Recession. Available at: <https://hotelnewsnow.com/articles/290408/Hoteliers-around-the-globe-reflect-on-Great-Recession>
- 19 See reference 9.
- 20 C40 Cities (2019), 14 Cities Commit to Sustainable Food Policies That Will Address the Global Climate Emergency. Available at: [https://www.c40.org/press\\_releases/good-food-cities](https://www.c40.org/press_releases/good-food-cities)
- 21 The Conversation (2019), Climate change is affecting crop yields and reducing global food supplies. Available at: <https://theconversation.com/climate-change-is-affecting-crop-yields-and-reducing-global-food-supplies-118897>
- 22 Nielsen (2018), Unpacking the Sustainability Landscape. Available at: <https://www.nielsen.com/us/en/insights/report/2018/unpacking-the-sustainability-landscape/>



# ABOUT THE PROTEIN CHALLENGE 2040

## **Accelerating action on sustainable protein**

The Protein Challenge 2040 is a forward looking, international, multi-sector collaboration across industry and NGOs working to accelerate action on sustainable protein. It is facilitated by the international sustainability non-profit Forum for the Future, bringing 20 years of expertise in running multi-stakeholder collaborations to solve complex sustainability problems.

In 2015 this international collaboration undertook an exhaustive diagnosis process to understand the key sustainability challenges that the food system faces around protein. Through this process we identified six key points of change and developed and tested collaborative responses to unlock barriers, prioritising those where interventions were perceived to have the greatest impact potential.

In Phase 2 of the collaboration we focused on two of these priorities and developed pilots for each area. These are designed to test what it takes to shift the whole system: in practice, this means combining several solutions, working collaboratively and looking to the long-term.

## **Feed Compass collaboration: Sustainable animal feed**

Addressing challenges associated with protein production with a particular focus on how to scale up use of sustainable animal feed for fish and livestock

## **Future Plates initiative: Rebalancing protein consumption**

Reducing the total quantities of protein consumed in Europe and the US in line with individual country dietary guidelines; improving the sustainability of the meat, fish and dairy that's consumed; and increasing the proportion of non-animal protein in the average diet by 50%.



## JOIN US

**The window for us to solve this huge challenge is shrinking fast. Get involved today and join our dynamic collaboration - The Protein Challenge 2040 - to benefit from being part of a network that shares collective expertise and influence on the future of sustainable protein.**

Partners that have been involved in this phase of the Protein Challenge include:



**CALYSTA**



To find out more about the Protein Challenge 2040 visit: <https://www.forumforthefuture.org/protein-challenge>



**FORUM  
FOR THE  
FUTURE**