

# The Edible Fats and Oils Challenge

Creating a Powerful  
Collaboration for Change



# Acknowledgements

This report has been produced by international sustainability non-profit Forum for the Future, in collaboration with M&S, Volac-Wilmar and WWF.

The content draws on interviews with experts across the supply chain, together with desk-based research and input from a multi-stakeholder workshop in June 2018.



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## FURTHER READING

### **Insights and Trends**

Our background report outlines the key trends shaping the future of edible fats and oils.

[Available separately for download here.](#)

# Forewords



**Andy Richardson**

Head of Corporate Affairs  
Volac-Wilmar

The world is heading towards a perfect storm. Rising population, global warming, the erosion of natural capital and human health challenges are all playing their part in what many believe to be an inevitably bad outcome for our planet earth.

But is this outcome really inevitable? Shall we simply sleepwalk towards the inevitable or is it in our power to influence the future? Some of us believe that collaboration between business, governments, NGOs, academia and investors is now more important than ever, and I believe that we can influence the future.

Following on from the collaborative success of [The Protein Challenge 2040](#), we now want to look at edible fats and oils globally and holistically. We want to examine the supply chain from production to consumption and understand what collaborative interventions can be made to achieve a positive outcome for consumers, business and the world. This new collaboration offers a huge opportunity for organisations to step up and take bolder action. Please join us on our journey.



**Hazel Culley**

Senior Sustainability Manager  
Marks & Spencer

M&S has been working on the sustainability challenges surrounding palm oil for many years but over recent years we have seen increased use of other oils whether that be for reasons of health, diet, or functionality. This is both driven by product formulation and by customers wanting to cook with different oils such as coconut oil.

Many of these oils have equally complex supply chains, sometimes with little to no regulations or sustainability focus. We want to ensure that there are no unintended consequences of switching or developing new formulations and are therefore supporting the Edible Fats and Oils Collaboration as we cannot address these issues on our own and would like to work with others to do so.

# Introduction

**Edible fats and oils are often invisible to us: they add texture, flavour and shelf life to baked products, give chocolate bars a smooth, shiny appearance and provide vital nutrition, such as the omega-3s found in nuts, plants and fish.**

Fats and oils are an essential part of a healthy and nutritionally balanced diet for both humans and livestock. But the way we're currently producing and consuming them is clearly unsustainable.

Declining biodiversity, competition for land, climate change, water stress, and human rights abuses in the supply chain are some of the many challenges surrounding the production of edible fats and oils. There are also consumption and nutritional challenges: Poor diets have resulted in a double burden of malnutrition and obesity. People eating the right fats and oils, in the right quantities, is a critical part of responding to this public health challenge.

The public narrative around these sustainability challenges is often binary and simplistic, with much of the debate and information focusing on palm oil, and specifically on deforestation and its environmental impacts. There is little widespread understanding about how the different industrial fats and oils stack up against each other in environmental, social but also nutritional terms.

For instance, a wholesale shift away from palm oil could result in a move to more land-hungry oils with less efficient yields. Accelerating the uptake of more sustainable palm oil production and certification is a critical priority for ensuring future supply, as is driving and scaling innovation in alternative fats and oils.

**For this reason, we are convening a collaborative, open innovation initiative focused on developing a more systemic narrative about the value derived from sustainable production methods for edible fats and oils, and using that understanding to shift the practices of key influencers: investors, policy influencers and makers, buyers and producers. Please join us!**



# Fats and oils: a complex systems challenge

**Fats and oils are an essential part of a healthy and nutritionally balanced diet for humans and livestock. However, the way we're currently producing and consuming them is widely agreed to be unsustainable.**

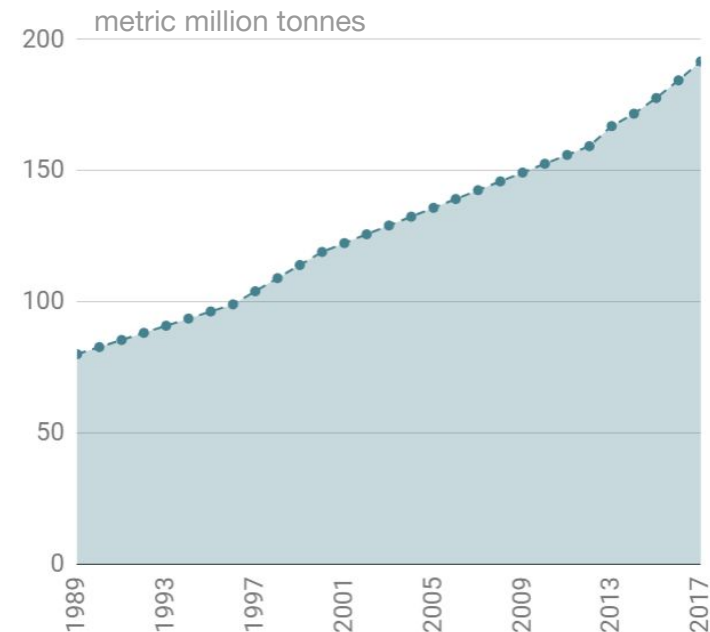
Current food production, including fats and oils, faces many complex social and environmental challenges, ranging from deforestation, declining biodiversity, competition for land and climate change, to water stress, and human rights abuses in the supply chain.

Consumption-related challenges include today's global double burden of malnutrition and obesity, linked to poor diets. One critical response to this public health challenge will be to get people eating the right mix of fats and oils, in the right quantities.

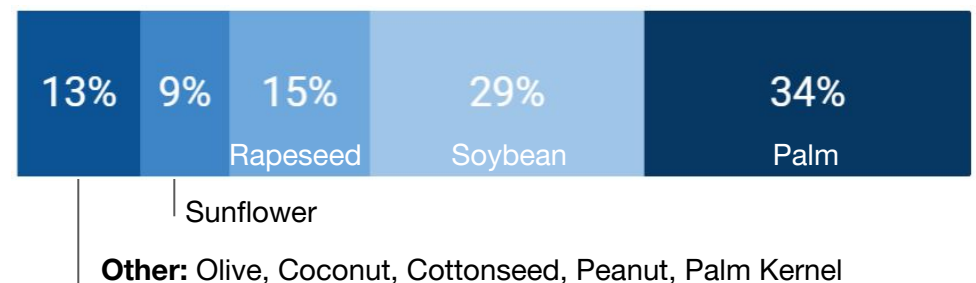
Global consumption of major vegetable oils for food has more than tripled in the last 30 years, with palm and soybean oil accounting for nearly two thirds of volumes produced and sold. Both are under increasing scrutiny for their association with environmentally damaging practices and human rights abuses. Alternative oil crops such as rapeseed do exist, but these often require more land, and experiments with lab-based alternatives such as algae are promising but not yet at scale.

The future success of businesses that use large volumes of edible fats and oils will depend on secure access to supply chains that are low-carbon, free from deforestation and that respect biodiversity and human rights. Understanding the interconnected, complex nature of the challenges facing the edible fats and oils sector is a vital starting point for actors from across the value chain to get this system onto a sustainable footing.

Global consumption of major vegetable oils for food (Oil World, 2018)



2017/18 global consumption of top 9 vegetable oils for food (USDA, 2018)





# Spotlight on: palm oil

**Palm oil has rightly attracted special attention as an oil crop.**

In the media, palm has often been demonised for its association with deforestation and poor labour rights. At the same time, some view palm as a miracle crop. Its growth over the last 30 years has been phenomenal. Beyond food, palm is found in products ranging from cosmetics and laundry detergent to toothpaste and biodiesel.

**19%**  
of world production  
of palm oil is RSPO  
certified

Why is palm oil so ubiquitous? Firstly, its high versatility makes it unique. Palm can be fractionated and processed into a large number of derivatives with useful physical and chemical properties. Secondly, it's a high-yielding crop that can be harvested every ten days, with low fertiliser and pesticide requirement compared with other oil crops, giving it a cost advantage.

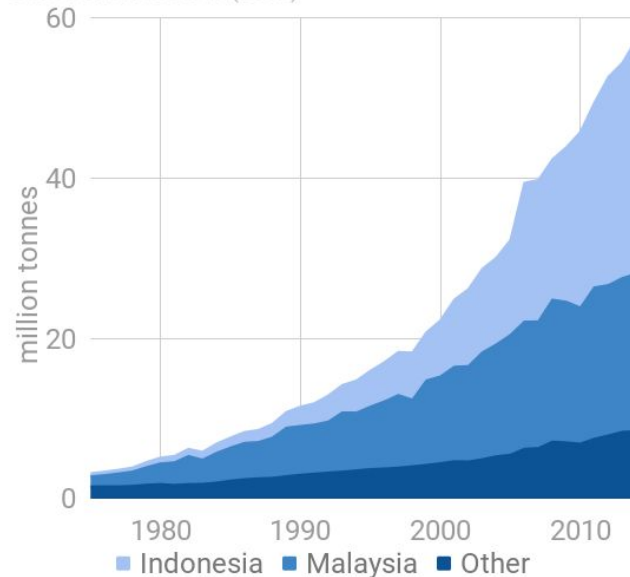
Yet there are a number of serious issues in the supply chain. As a tropical plant, much of its expansion has come at the expense of valuable forests, impacting precious wildlife. Around 40% of palm oil is grown by smallholders, many receiving low wages and living on the poverty line. There are also other recent challenges, such as lower than expected yields, an aging profile of crops and a lack of replanting, together with labour shortages in Malaysia.

In response to these issues, the Roundtable for Sustainable Palm Oil (RSPO) was launched in 2004. Today, 19% of the world's production is certified. While this is progress, RSPO has faced criticism for being below standard and many companies are not willing to pay a premium. Because of this, it is estimated that only half of certified sustainable palm is actually sold as such.

A joined-up global effort will be required to increase and strengthen RSPO certification and improve traceability in the supply chain. How palm oil fits into the future balance of fats and oils remains a critical question - and we need to be crystal clear and forge agreement on what good palm looks like.

## Global Palm Oil Production

Data from FAOSTAT (2019)



**6.6%** of the global land area for oilseed crops is growing palm oil

**38.7%** palm oil's share of the total output of vegetable oils

Data from Oil World, 2016

# Spotlight on: soybean oil

**Soybean is one of the world's largest crops, valued for its high oil and protein content.**

Soybean production has grown rapidly in recent decades, particularly in the Cerrado region that straddles Brazil, Argentina, Paraguay and Bolivia. Its expansion has driven extensive deforestation, severely impacting wildlife and biodiversity. Today, soybean oil is the world's second largest oil crop, so what's driving its popularity?

Soybeans are an excellent crop for both oil and protein. As a legume, it economises on nitrogen and fits well into the rotation of corn or wheat. Most notably, the production of soybean oil is closely intertwined with the production of animal feed. In composition, soybeans are about 20% oil and 80% soybean meal. In a tonne of soybeans, the commercial value of the soybean meal is usually higher than the oil.

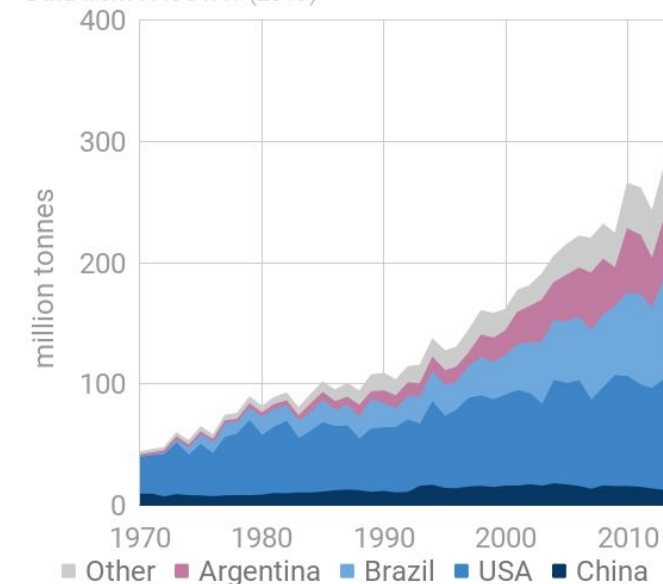
The rapid growth in livestock production charts a similar trajectory as the increase in soybean production. It's such an important animal feed source that 70-75% of global supply goes to animal feed, particularly poultry and pork. Only 6% is turned directly into food products for human consumption.

Soybean oil is mild in flavour and versatile in food processing, so it's often found in baked goods and other foods. There are many non-food uses for soybean oil such as biodiesel, lubricants, crayons, adhesives and solvents, and more.

Soybean oil yields far less oil per hectare than palm oil, and it requires more fertilisers, pesticides and energy input per hectare. NGO pressure has helped curb only some of the deforestation related to soy. To encourage more responsible soy production, the [Round Table for Responsible Soy](#) is one forum promoting a sustainability standard. However traction is limited. While certified 'sustainable' soy is increasing, only 1-2% of annual production is certified as sustainable.

## Global Soybean Production

Data from FAOSTAT (2019)







## Rapeseed oil

Also known as canola oil, it is the third largest oil crop after palm and soy. Versatile and low in saturated fat, it is a lighter alternative to other vegetable oils. Similarly to soy, it fits well into a crop rotation with wheat and produces a high protein co-product used in animal feed. In Europe, rapeseed oil is a popular palm oil substitute. Like any commodity crop, when grown in vast monocultures it negatively impacts biodiversity. To maximise yields and profitability, farmers often use high applications of nitrogen fertiliser and pesticides in production.



## Olive oil

Produced mainly in the Mediterranean with high amounts of regulation from the International Olive Oil Council, olive oil is high in monounsaturated fat and often considered a healthier alternative. The intensity of production systems vary, with farmers increasingly incentivised to be more intensive. In 2018, Italy saw a 57% plunge in the country's olive harvest - the worst in 25 years - due to extreme weather events linked to climate change.



## Sunflower oil

Another major oil crop, grown across Russia, Ukraine, Europe, Argentina and the USA, sunflower oil is a common frying oil, high in levels of polyunsaturated and monounsaturated fat. In production, it is adaptive to a range of soils with good drought resistance. It also requires a limited amount of fertiliser and pesticides compared to rapeseed oil. Recently, new varieties have been developed to improve yields as well as stability, quality, and functionality, helping make it more a competitive alternative to palm oil.



## Coconut oil

Similarly to palm, coconut oil is produced in tropical climates, has a very high saturated fat level and is semi-solid at room temperature. It's commonly used in baked goods and has a well-established supply chain. Poverty is common in coconut farmers and issues of exploitation have been reported.

# Creating a fresh narrative

**The narrative around edible oils has often been simplified and polarised into “good vs bad” fats and oils. But it’s not that simple.**

We’ve witnessed responses ranging from cross-sector roundtables and shared commitments, to campaigns, boycotts and the pursuit of ingredient substitutions - with very mixed results. While some responses have led to positive outcomes, others risk creating unintended consequences.

There are multiple challenges facing this sector and no single crop holds all the answers. Paying attention to the whole system of edible fats and oils is therefore critical to responding adequately to the complex global challenges we face. A systemic approach can also help us to identify and map the right types of solutions and innovations that can tilt the whole edible fats and oils sector onto a sustainable footing.

What we mean by this is working collaboratively with players from across the value chain to examine all of the key fats and oils as part of a holistic sustainability analysis. This includes an impact assessment covering risks and opportunities across the value chain, from production to consumption.

This will enable organisations to identify a shared roadmap for the future, rather than designing solutions in isolation and running the risk of creating another set of problems.



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[Read more](#) about our strategy for creating change in the edible fats and oils system



# Join the **Edible Fats and Oils** Collaboration

Forum for the Future, together with M&S, Volac-Wilmar and WWF are inviting organisations to join the Edible Fats and Oils Collaboration.

This three-year, global multi-stakeholder initiative is focused on accelerating the sustainable production and use of edible fats and oils.

This collaboration is open to food and agricultural companies from across the supply chain, together with NGOs, investors and policymakers. Together we will:

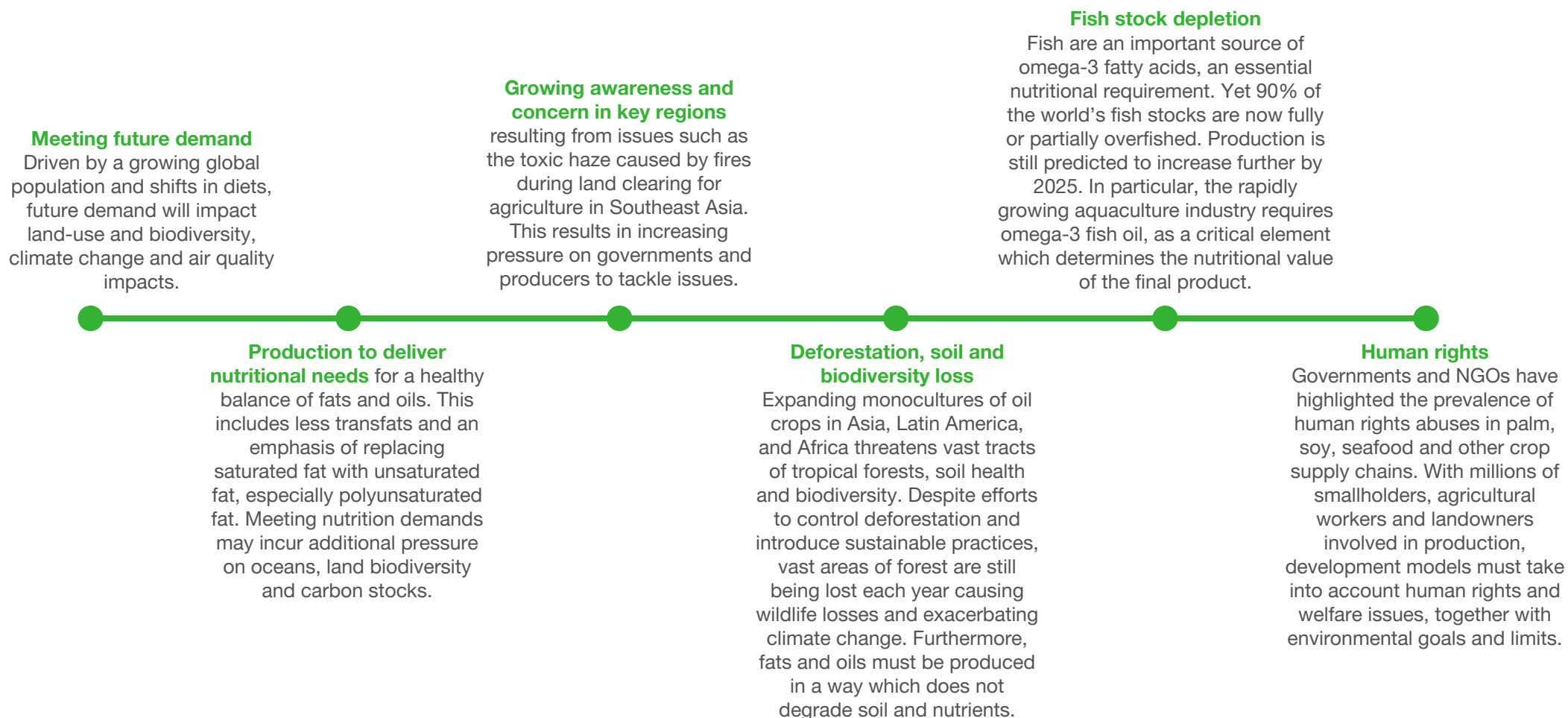
- 1. Reframe the debate:** supporting organisations to take sustainability and health into account concurrently when making decisions.
- 2. Create greater alignment around the direction of innovation in edible fats and oils.**
- 3. Drive change across key influencer groups:** including key companies in the value chain, investors and policy-influencers.

The collaboration is facilitated by Forum for the Future. To enquire about getting involved, please contact Ivana Gazibara:

[I.Gazibara@forumforthefuture.org](mailto:I.Gazibara@forumforthefuture.org)

# Sustainability Challenges: Production

There are many challenges across the value chain of the edible fats and oils sector, and many of these will intensify as demand grows. The Edible Fats and Oils collaboration will seek to develop holistic profiles of these challenges across the different fats and oils to enable better decision making.



# Sustainability Challenges: Consumption

**Fats and oils are an essential part of a healthy and nutritionally balanced diet for both humans and livestock. However, we are currently facing a number of consumption and nutritional challenges including the double burden of malnutrition and obesity.**

## **People consuming unhealthy quantities and varieties of fats and oils**

Globally, some people need to eat a healthier balance of fats and oils, some need to reduce their overall intake, and some need to increase consumption to improve their nutritional intake.

## **Improving categorisations**

The World Health Organisation acknowledges that the common categorisation of fats into saturated and polyunsaturated does not accurately capture the nuances of nutritional qualities of fats and oils, yet it is the basis for most policy, consumer information and research.

## **Understanding what influences consumer choice**

People are influenced by price, taste, convenience, perceived health benefits – all of which are in turn influenced by their cultural and economic context. Even when consumers are strongly motivated to adopt healthier eating patterns for fats and oils, it is not straightforward. This is a complex nutritional area, with different health implications relating to different raw, cooked and processed fats and oils.

## **Which oils are the best nutritionally?**

Our understanding of the nutritional value of different fats and oils is constantly evolving. Achieving a sustainable, secure supply of the right fats and oils for growing populations in different regions will become even more critical as this understanding evolves.

## **Balancing functions in processed foods**

Creating industrially processed foods such as pastries and confectionery requires manufacturers to select and modify fats and oils, balancing functions such as stability, taste, texture, shelf life, fat content and nutritional value. Prioritising nutrition and the environment will impact the quantities and types of processed foods created.

## **The role of sustainability certifications**

Certifications aim to influence consumer choices and shape industry behaviour. However, existing certifications of different fats and oils are inconsistent, hard to communicate to consumers, and lack trust. Furthermore, demand for certified sustainable products is not well established in regions with the highest growth in demand.

# Shifting the System

A three-year plan for industry to collaborate to build a more sustainable fats and oils system

# Ambition

**Our ambition is to accelerate the sustainable production and use of edible fats and oils, so that the system:**

## Respects environmental limits

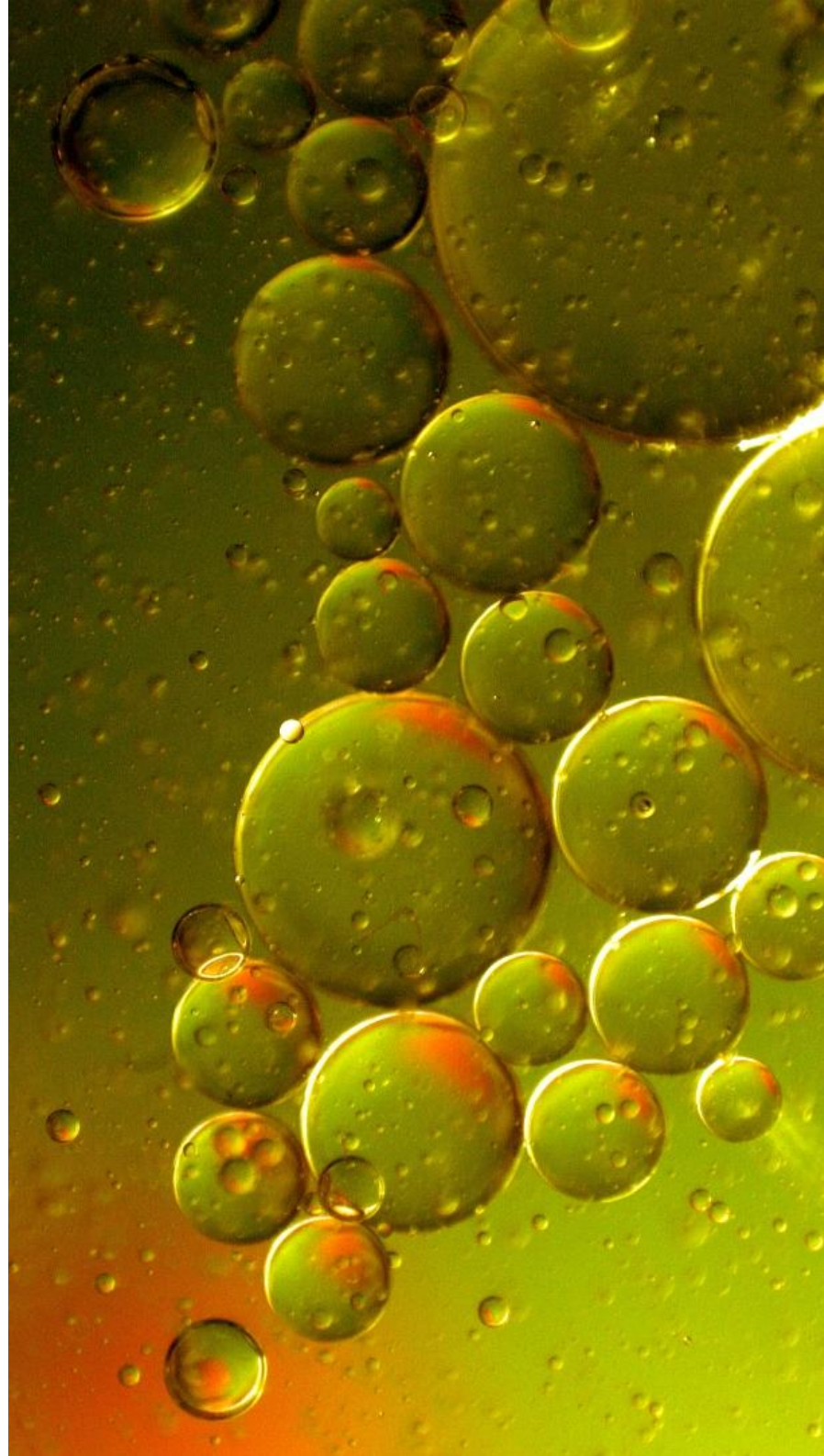
- ✓ Ensures zero net deforestation
- ✓ Supports rapid decarbonisation
- ✓ Protects high carbon stocks, peatlands and biodiversity
- ✓ Sustainable freshwater use

## Supports positive social outcomes

- ✓ Equitable distribution of value across the supply chain
- ✓ Decent wages for producers
- ✓ Respect for customary land rights
- ✓ Protects ecosystem services that communities depend on
- ✓ Upholds labour rights and eradicates child labour

## Delivers high quality nutrition

- ✓ Supports a healthy consumption of fats and oils
- ✓ Supports the elimination of industrially-produced trans-fatty acids



# Strategy for change

To achieve our ambition, we must:

1

## Reframe the debate

So that organisations take sustainability and health into account concurrently when making decisions about product formulation, sourcing, investing and policies.

2

## Create greater alignment around the direction of innovation in edible fats and oils

Help to unlock innovation in alternative oils, more sustainable production methods, and accelerating the scale-up of key innovations.

3

## Drive change across key influencer groups

This includes:

- Shifting **food and agricultural companies** towards more sustainable growing, purchasing and product formulation policies and practices
- Supporting the uptake of rigorous lending and investment policies amongst key **investors** in the industry
- Influencing the development of exemplar procurement, government **policies** and trade legislation at the national level.



# What we propose to do

We propose a three-year programme of work in two phases.

**Phase I** brings together a founding coalition that will lead the sector in building tools that holistically profile the different edible fats and oils to enable better decision making, and also map the alternative innovation space for fats and oils.

Drawing on these insights, **Phase II** involves a deeper engagement with key influencers to drive change across the system.

## PHASE I FOUNDING COALITION

### Profile edible fats and oils

New combined datasets and tools that provide an enhanced understanding of the edible fats and oils system.

### Mapping alternative innovations

Identify the innovations and market mechanisms to support scale.



Phase I insights will inform and guide influential stakeholders in working groups:



## PHASE II WORKING GROUPS

### Policy

to influence policies that are more ambitious, robust and consistent for sustainable fats and oils production and use. Covering procurement, trade legislation, investment, research and development.

### Investors

to support the investor community to have stricter, more impactful lending criteria and policies.

### Food and agricultural companies

to influence purchasing and formulation policies to have sustainable, future-proof criteria related to sustainable fats and oils

# Phase I: Founding coalition

We will build a coalition of leading organisations, including food companies, NGOs, investors and public sector organisations, focused on:

- Raising awareness of the environmental, social, and nutritional profile of key edible fats and oils amongst industry influencers.
- Identifying and widely communicating guidance for scaling up sustainable innovations.
- Creating a platform to enable key industry stakeholders to use these insights as part of Phase II workstreams - influencing key organisations to take sustainability and health into account concurrently when making decisions about product formulation, sourcing, investing and policy development.

## PROFILING EDIBLE FATS & OILS



Mapping and profiling the key industrial fats and oils currently in use, to gain insight into where the biggest risks to the current system are, and the biggest opportunities for systemic interventions. This profiling will provide a tool, together with industry briefings and insights which can then be translated into on-the-ground action with key influencer groups (covered in Phase II of the work).

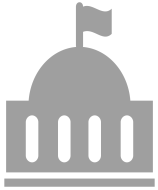
## MAPPING ALTERNATIVE INNOVATIONS



Identify and promote the business case for action in supporting innovation for edible fats and oils. Identify novel, alternative edible fats and oil innovations that hold the best potential to scale and create a positive sustainability impact. Support alternative innovation by identifying a range of solutions that can overcome barriers to scale. Establish a platform for working with key industry stakeholders to disseminate key insights to wider audiences to support the scaling activities identified.

# Phase II: Workstreams

In Phase II we will use the Phase I insights to develop three follow-on workstreams. In this phase, we expect to convene a larger group of influential stakeholders that will enter working groups relevant to their interests.



## POLICY



Review key national policies related to fats and oils, identify options for national level policy interventions, and engage policymakers to develop exemplar policies, trade rules and innovation mechanisms.



## INVESTORS



Establish a coalition of investors to design and run a series of investor-backed dialogues with other key stakeholders across the industry. The aim will be to identify and commit to a set of actions and policies which will ensure capital flows support the acceleration of sustainable fats and oils production, including novel alternatives.



## FOOD & AGRICULTURAL COMPANIES



Support companies to develop better purchasing and formulation policies and practices for edible fats and oils. This will include the development of buying tools and knowledge exchange mechanisms, as well as pilot projects designed to bring more alternative fats and oils into the mainstream market.

# A Collaborative Approach

One thing we've learnt over the years is that complex, interconnected challenges like the ones faced by the edible fats and oils sector, must be tackled systemically – and that's only possible when organisations work together.

The purpose of this collaboration is to:

- Identify strategies required to shift the edible fats and oils system onto a more sustainable footing;
- Develop and run workstreams within those strategic areas;
- Share information and learning widely;
- Build awareness and capacity of others across the system to create the necessary change.

**Forum for the Future** has a long experience of identifying and assembling stakeholders across the value chain to collaborate. In this collaboration, Forum will act as an independent non-profit designer, facilitator and project manager.

## Design principles of the collaboration

Focus on addressing root cause of problems

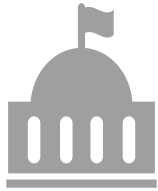
Provide a joint space for learning and experimentation

Be open to challenge and dissent from within the collaboration and outside

Deliver an intensive set of interventions focused on achieving systemic change

# Key Benefits

Organisations participating in the Edible Fats and Oils collaboration will be better positioned to realise new business opportunities and mitigate risks.



## POLICY INFLUENCERS



- Better collaboration and engagement, that shapes more impactful, future-proofed policy and legislation around fats and oils sourcing and use.
- Develop new relationships with key stakeholders in the supply chain, across geographies.



## INVESTORS



- Smarter investments, by developing deeper insights that shape lending policies, reducing risk and ensuring capital flows to the right companies and activities.
- Develop a leadership position, for creating greater resilience and driving sustainability, impacting the wider investment community.
- Build relationships and gain insights into nascent products and technologies in the edible fats and oils system.



## FOOD & AGRICULTURAL COMPANIES



- Benefit from risk mitigation and increased resilience, through improved policies and company strategy.
- Access deeper insights and build stronger relationships around sustainable fats and oils, helping develop a leadership position.
- Foster innovation across own portfolio of products and services, realising new business opportunities.
- A more engaged and motivated workforce, proud to be contributing to a more sustainable system.

# With thanks

The Edible Fats and Oils initiative was designed in collaboration through a series of interviews with industry experts and a design workshop in 2018.

We wish to thank Hazel Culley, Emily Fripp, Ivana Gazibara, Judith Murdoch, Jonathon Porritt, Andy Richardson, Samuel Smith and Ulrike Stein for their insights and contributions to the research and shaping of this collaboration.

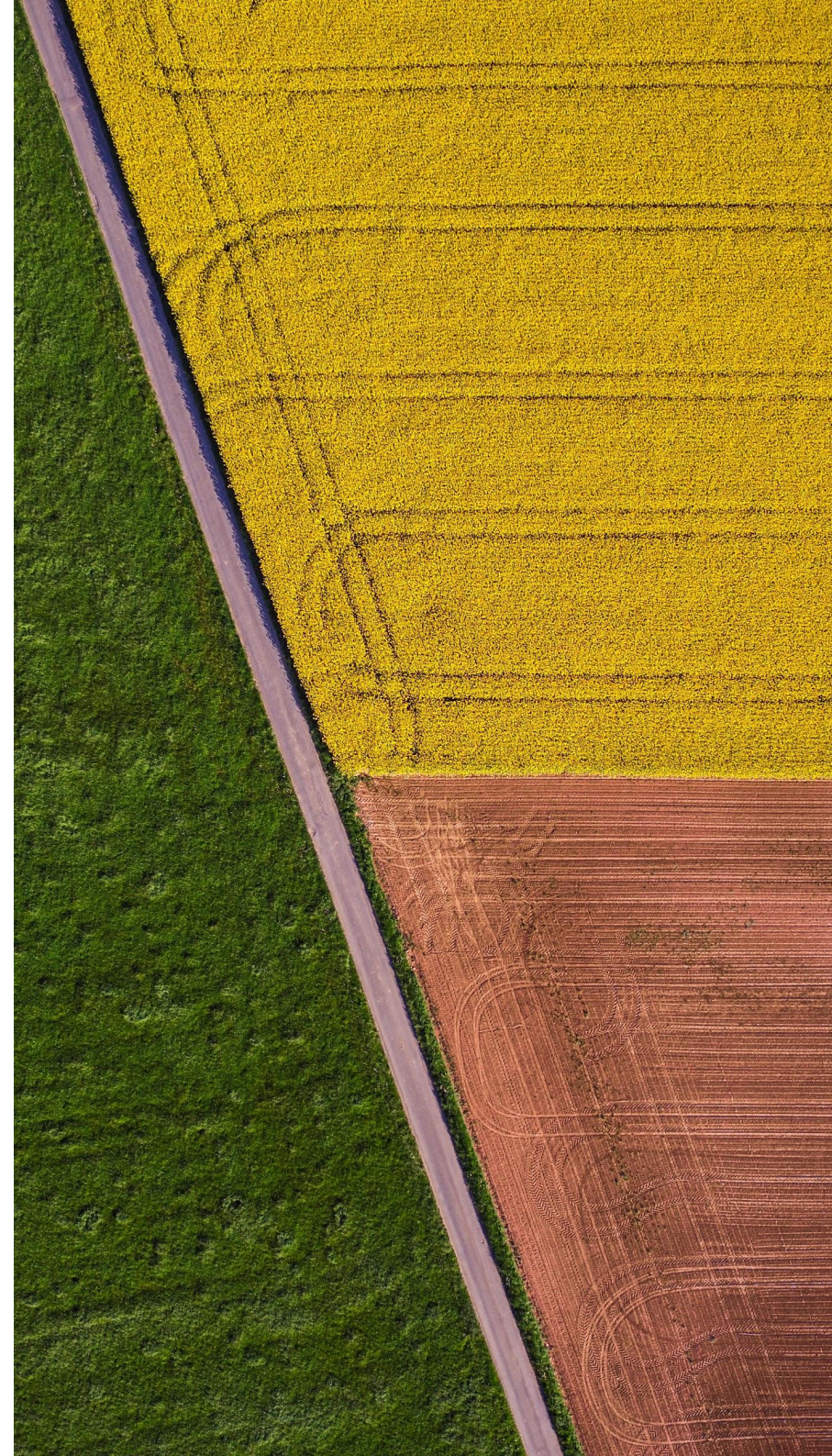
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**Forum for the Future** is a leading international sustainability non-profit with offices in London, New York, Singapore and Mumbai. We specialise in addressing critical global challenges by catalysing change in key systems. For over 20 years, we've 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.

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