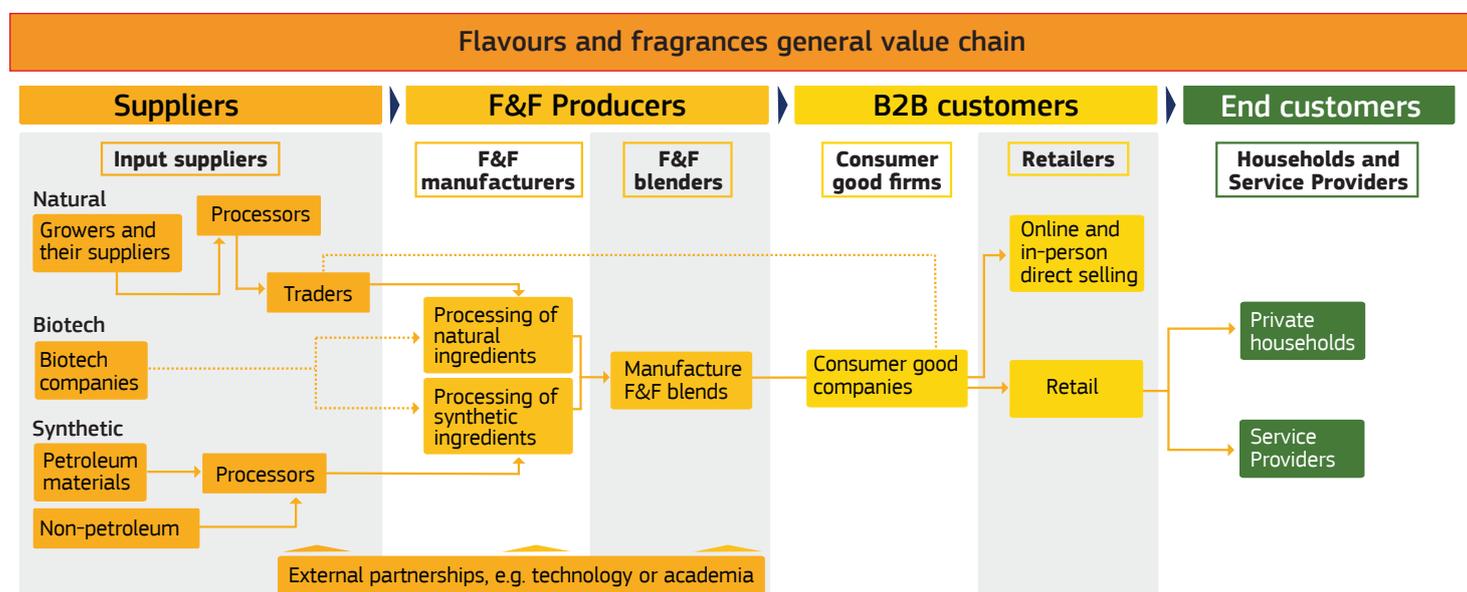


The EU biotech Flavours and Fragrances industry plays a key role in the global value chain

Product Watch: Bio-based flavours and fragrances

Flavours and fragrances (F&F) are chemical substances that trigger the senses of tasting and/or smelling, and are conventionally produced through **extraction from natural sources** or through **chemical synthesis**. **Biotechnology** is a new and **innovative production option** to produce F&F.

The F&F **value chain** represents high value, low volume products with a **broad application potential**, where biotechnological production may be a **competitive advantage**.



Source: Fraunhofer ISI, adapted from PwC 2019; Wydra et al. 2016

Understanding the F&F value chain and its key players is the first step in analysing the EU competitive positioning with respect to biotech F&F



The F&F market is **highly competitive** and **rather concentrated** with major firms usually covering several steps of the value chain.



Large consumer goods companies may influence **developments within F&F** as they interface between end consumption and the F&F value chain.

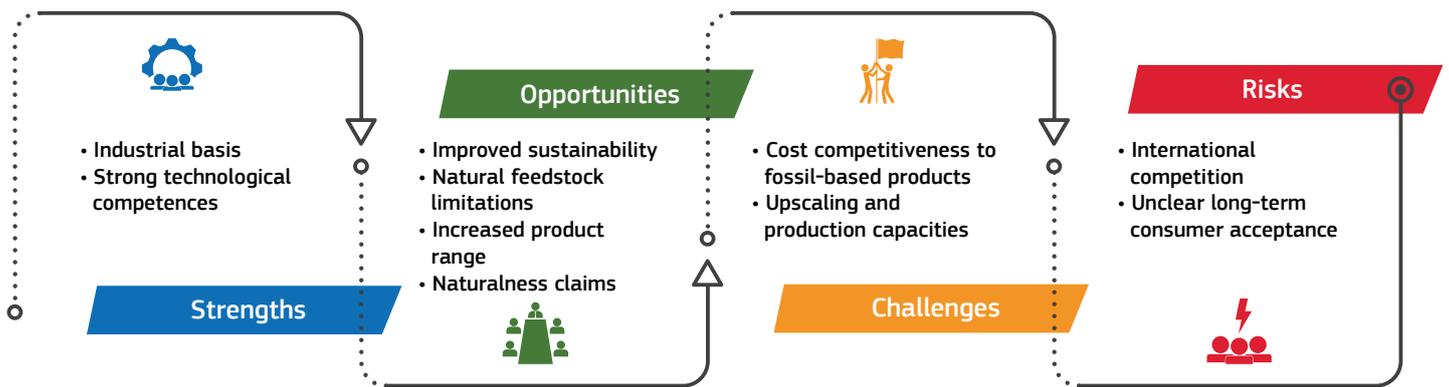


Input suppliers provide the necessary technological know-how for biotech F&F. **Large F&F manufacturers** hold prime resources like money and customer insights.



Cooperation often runs **transcontinental** between the US and Europe, but European companies **collaborate with each other** as well.

The EU has strong technological competences and can claim naturalness, but faces challenges in terms of upscaling and production capacities



Source: Fraunhofer ISI

Policies can support the EU's F&F industry in different ways

On the supply-side, policies can support the **development of the biotech F&F sector** by supporting research and upscaling activities.



On the demand-side, policies can support in gaining or maintaining **consumer trust and acceptance** of biotechnologically produced F&F.

About the Advanced Technologies for Industry (ATI) project

The ATI project – funded by the European Commission – supports the **implementation** of Europe's new growth strategy with a systematic monitoring of **technological trends** and reliable, **up-to-date data** on advanced technologies.



The **Product Watch** analyses novel products that are based on advanced technologies for the development of goods and services - enhancing their overall commercial and social value. It supports cluster organisations and S3 partnerships, providing intelligence on innovation areas where European regions could team up and invest together.

For more information, read the full Product Watch on Bio-based flavours and fragrances here:

<https://ati.ec.europa.eu/reports/product-watch/bio-based-flavours-and-fragrances>



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