

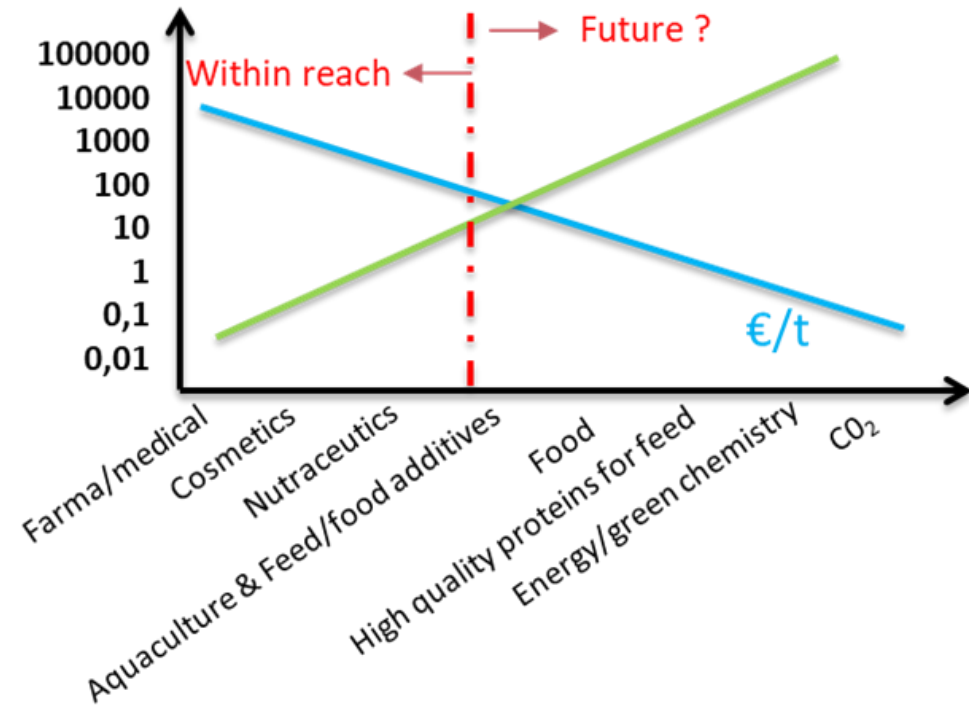
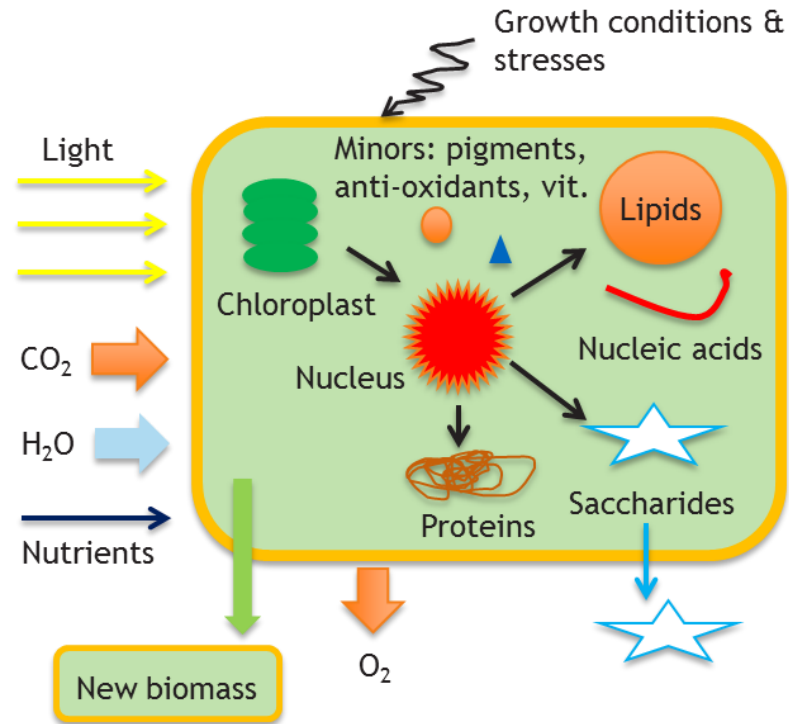
# Conclusions

Final IDEA+ event, September 2023

Leen Bastiaens

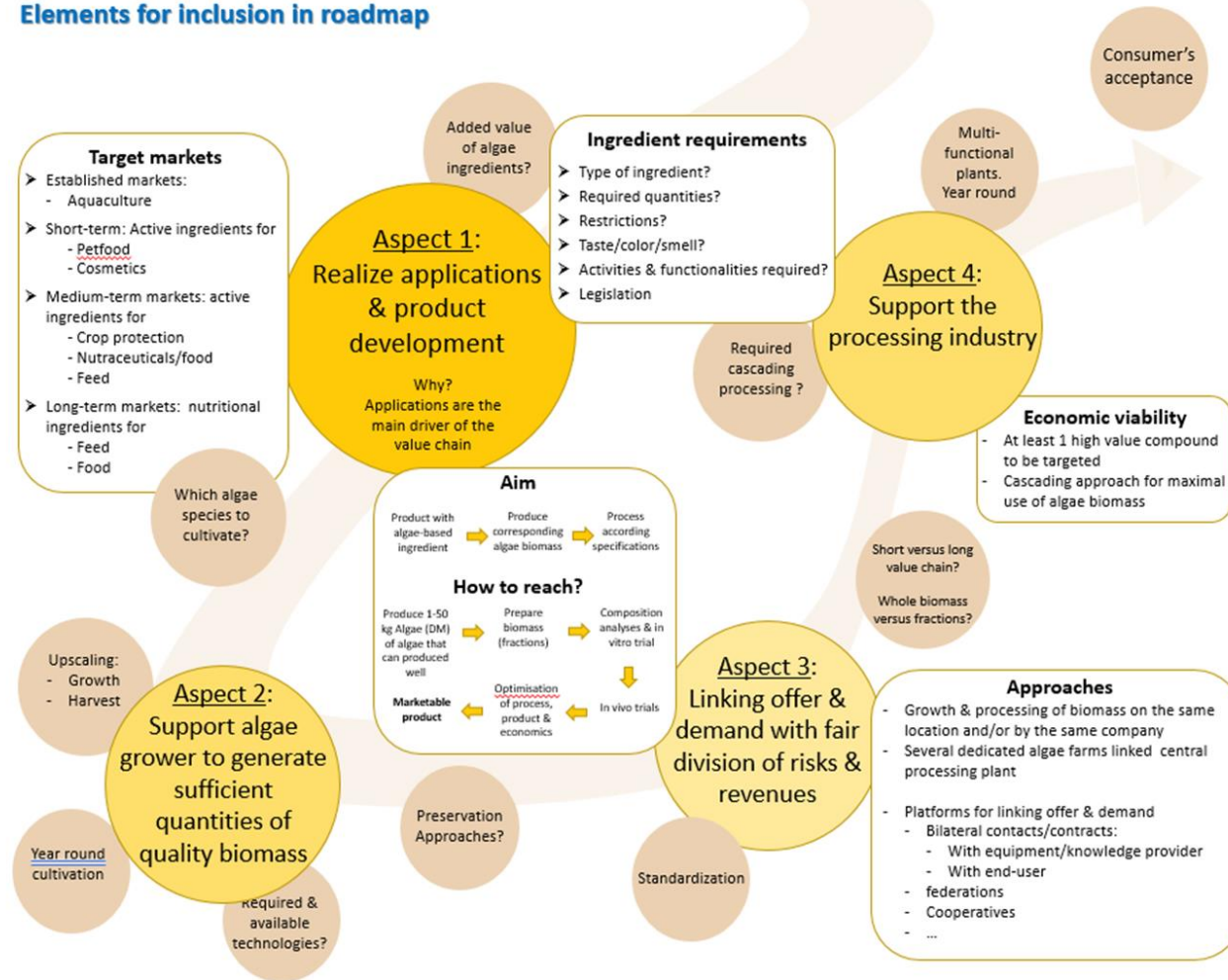
Coordinator IDEA project

# Microalgae



# Roadmap toward enrolment of algae value chain

## Elements for inclusion in roadmap



# Impact side-stream use

Side-stream category	Side-stream	Technical feasible	Safe	Legislation	Point of attention
Process water (low organic matters)	Regeneration water of demineralization unit (N-containing)	Open pond with mixed algae: Yes	To be verified case by case	Restricted use in case of mixed algae culture	Seasonal changes Available space
		Unialgal growth: Yes	Yes (normal checks)	Yes - for unialgal cultures (if safe & species allowed for application)	- Strains to be selected in function of salt content. - Stresses --> change in composition
Digester (manure)	Burned biogas (CO <sub>2</sub> )	yes	Yes (normal checks)	Yes (if safe & species allowed for application)	Technical adaptations to integrate CO <sub>2</sub> in reactor.
	CO <sub>2</sub> enriched from biogas	Yes, (technology elaborated on small scale)	Yes? (normal checks)	Restricted applications (waste?)	Algae biomass still considered as waste?
	Digestate (N, P, ...)	yes, But aspects to take into account	? (microbial load) To be verified case by case	Restricted applications (waste? & safety)	- Variation in digestate composition during storage - Pretreatment required! - Organic matter → mixotrophic growth & contamination - Re-dosing when applying medium recycling?
Digester (plant)		Yes	To be verified case by case	Less restrictions	

# Impact side-stream use

- **Requirements for algae value chain development:**

- **Reproducible** and cheap algae biomass available in sufficient quantities
  - Good product, with proven activities & functionalities
- = challenging → standardization can help

- **Use of side-streams**

- Technically feasible – some development possible for optimization
- Positive in terms of circularity
- Adds complexity to algae value chain - reproducibility, safety, legislation, purity

- **Timing algae value chain enrollment:**

1. Without side-stream use (short-term): well controlled growth > less controlled growth
2. Use of recycled CO<sub>2</sub> (interest of companies) – source dependent: biogenic (breweries, ...) > Biogas > off-gas factories
3. Process water (low organic matter, N/P-containing)
4. Digestate: plants > manure

# Policy recommendations

- For enrolment of new value chains support is needed
  - Discouraging current less-sustainable products
  - Support for new value chain to overcome investments, risks, legal aspects, permissions, ...
- Can algae growers get financial support?
  - Is algae cultivation an agricultural activity?
    - Algae cultivation not on the list of supported activities
  - Other support?
  - Clarity needed
- CO<sub>2</sub> credit system ?
- ...

# Status in Europe?



## A collaborative European stakeholders' forum

*The ultimate objective is to accelerate the scale up of a regenerative, resilient, fair and climate friendly algae industry in Europe.*

**Algae value chains in (NW) Europe - Final IDEA+ Event**  
28 September 2023

# Status in Europe?

## About EU4Algae

EU4Algae Forum is aimed at gathering **algae interested parties**, from all relevant public and private organizations, **to jointly implement the EU Algae Initiative**, while offering a **forum to openly speak and discuss** market driven breakthroughs for the sector.





# Status in Europe?

## EU4Algae Working Groups



**WG 1**  
Adrien Vincent



**WG 2**  
Jean Paul Cadoret



**WG 3**  
Vitor Verdelho



**WG 4**  
Kim Anderle



**WG 5**  
Efthalia Arvaniti



**WG 6**  
Gabriel Acien



**WG 7**  
Frederick Bruce



# Working groups – Action Plans

- ✓ Constraints and challenges
- ✓ Objectives
- ✓ Actions
- ✓ Outcomes
- ✓ Next steps



## Policy recommendations



# Status in Europe?

## Focus of the presentation

- 1) the importance of algae for Europe & the current EU-vision (including calls)
- 2) to share EU4algae conclusions/activities related to start-ups & valorisation trajectories”

# Importance of algae for Europe

*“Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030 (Strategic guidelines for EU aquaculture) stress the **need to promote the farming of algae – both macroalgae (seaweed) and microalgae – as a way of contributing to achieving several objectives of the European Green Deal.***

*The farming of algae can **contribute to achieving the EU’s objectives in terms of decarbonisation, zero pollution, circularity, the preservation and restoration of biodiversity, the protection of ecosystems and the development of environmental services.** Algae can replace fossil-base products, and serve as raw material for plant biostimulants, bio-based chemicals and other materials, and biofuels. The Sustainable Carbon Cycles Communication<sup>8</sup> recognises the potential of algae for the blue carbon economy.”*

# The EU algae initiative was announced mid-November 2022



Brussels, 15.11.2022  
COM(2022) 592 final

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL  
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Towards a Strong and Sustainable EU Algae Sector**

{SWD(2022) 361 final}



**Virginijus Sinkevičius** • 1er

European Commissioner for Environment, Oceans and Fisheries at European ...

1 sem. • 

Pioneering EU initiative just out!

We present 23 actions to boost the Algae sector in Europe.

***"EU4Algae already played an important role during the preparation of the EU Algae Initiative, and I am very thankful for that!***

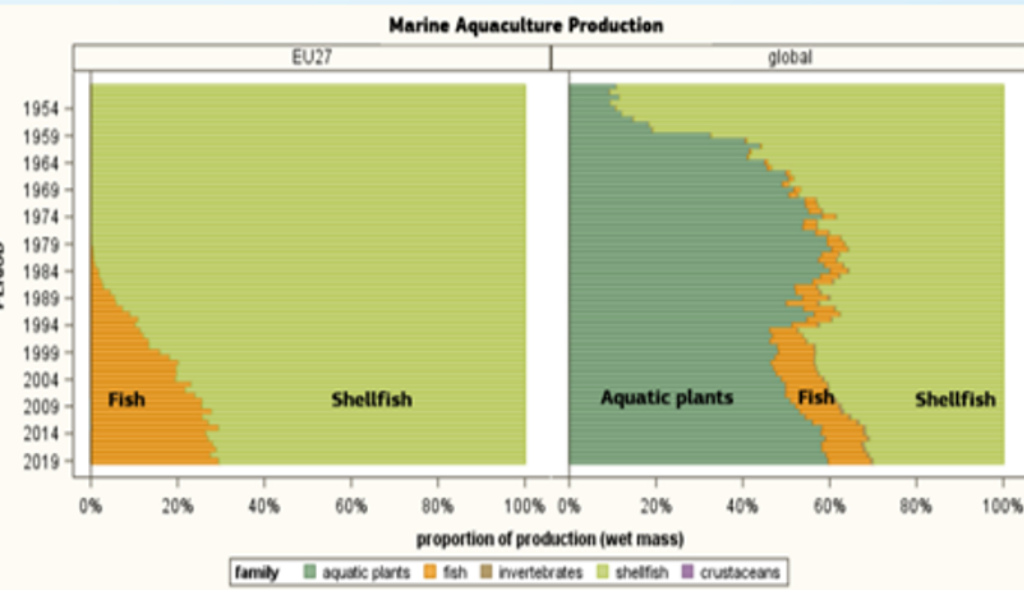
***Moreover, I trust that EU4Algae will play an active role in making the EU Algae Initiative a success story. Such a collaboration is crucial as ultimate goal of the initiative is to support algae sector that at the end of the day will create the added market value.***

***So, the Commission will continue to work hand in hand with the EU4Algae and other relevant stakeholders to let the EU Algae sector to thrive."***

*Delilah AL KHUDHAIRY  
Director of MARE Directorate A: Maritime Policy and Blue Economy  
EU4Algae meeting 12 December 2022*

# The EU Algae Initiative – How did we get there?

## Current algae cultivation



## Problems

High costs

Low scale production

Limited market and consumers knowledge

Limited knowledge on risks

Governance

## Objectives

Increase production, consumption, use of algae products

Upscale cultivation and production process

Mainstream markets

## Action areas (actions)









Governance and legislation (5)

Business support (6)

Knowledge, data, research (9)

Awareness and acceptance (3)

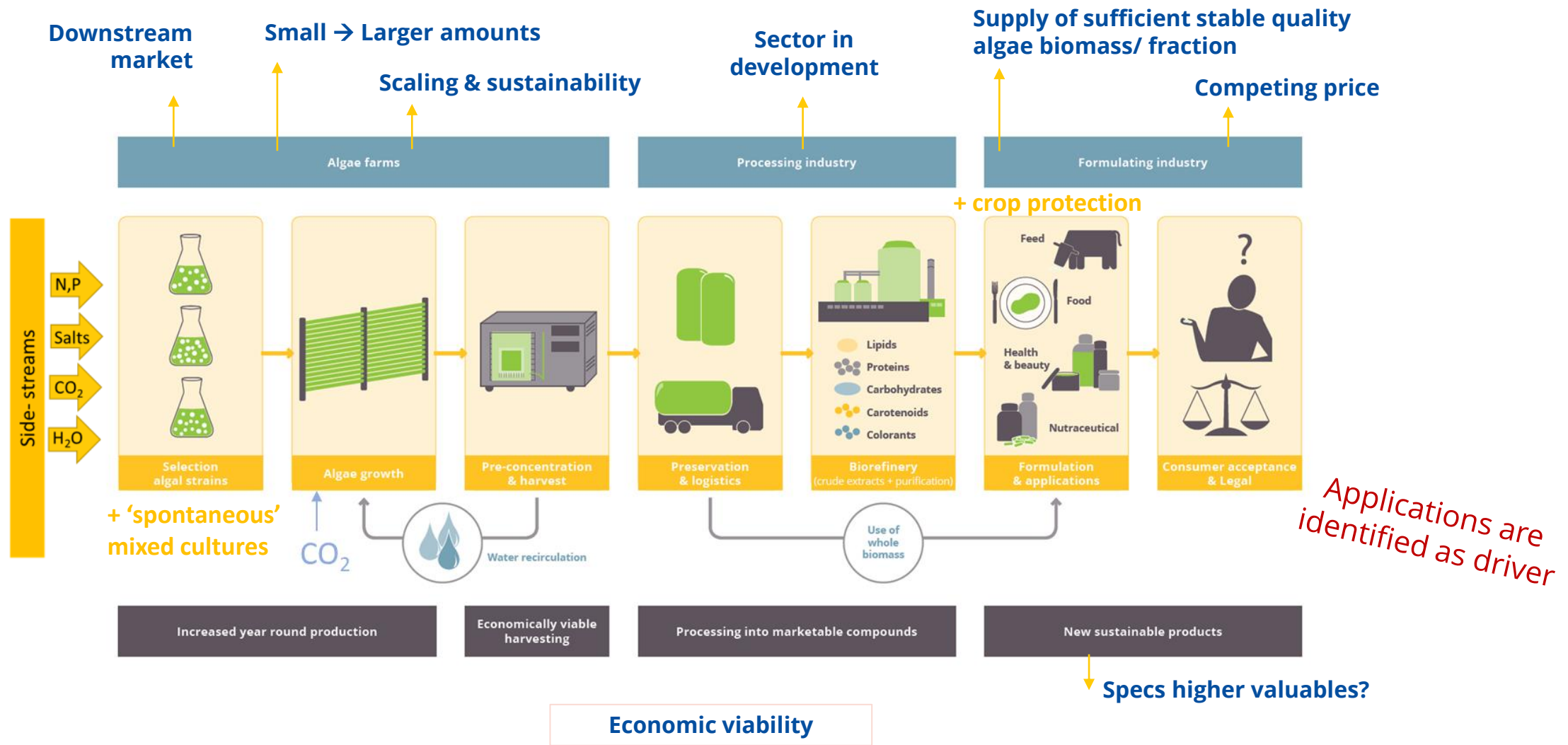
# The EU Algae Initiative – a cross-DG initiative

- Algae testing and extraction as well as algae biofuel standards (ENER) 
- Algae-based materials in fertilising products (GROW) 
- Use of nutrients and CO2 for microalgae cultivation and certification (AGRI) 
- Iodine and contaminants in algae (SANTE, EFSA)  
- Algae biofuel-specific technological and systemic challenges, processing and cultivation systems development (RTD) 
- Harmonize algae-related data (JRC, ESTAT)  



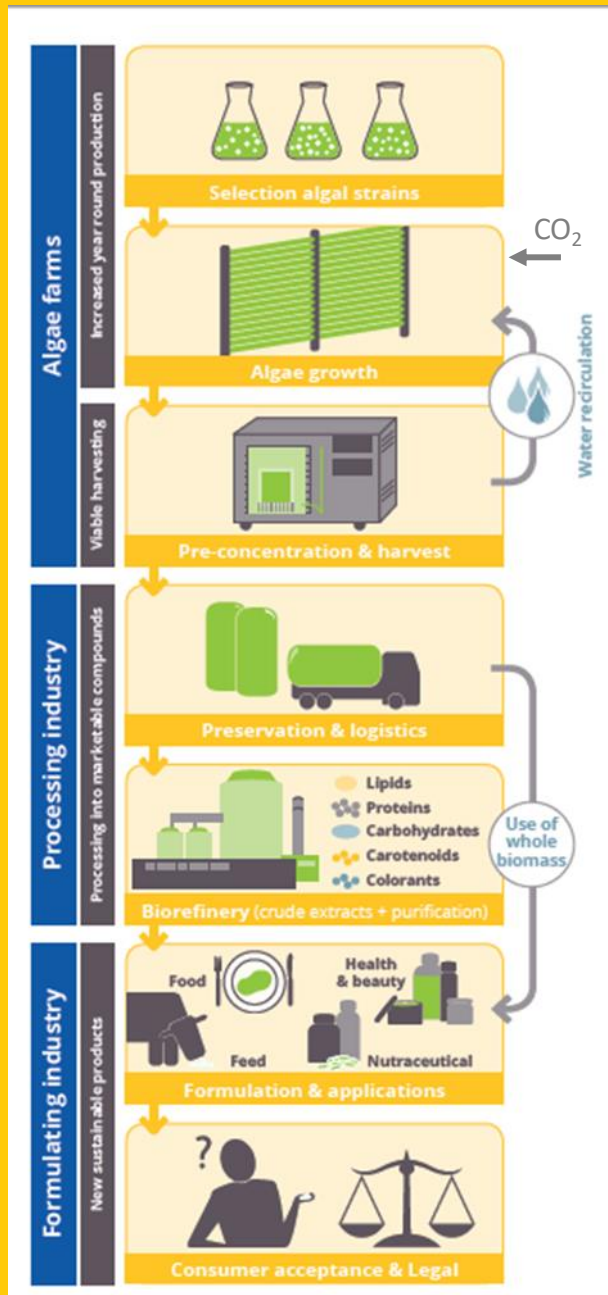


# Microalgae value chain - stakeholder's needs

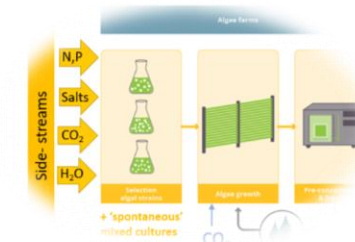


# Conclusions

- Development of new value requires time !
- For algae value chains: important steps towards market introduction are being made
- Products exist – mostly niche markets
- EU supports the algae sector.



# Acknowledgements



Thank you all !!

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Website: [www.nweurope.eu/idea](http://www.nweurope.eu/idea)

Full partners:

