WORKING GROUP -

SME PLATFORM

LEADER

Ioannis TZOVENIS (Microphykos, GR),

RATIONAL AND OBJECTIVES

Rational: The Action includes universities, R&D institutes, SMEs, large companies, NGOs and government departments which run public services. The SMEs partners involved belong to the aquaculture sector (fish and seaweed) and seaweed-related industries (food, feed, bioactive products) and marketing. Throughout the COST Action timeline, stakeholders, will have active roles in conferences, workshops, STSMs and TS. These activities will bring together academic and industry sectors for knowledge exchange and its rapid transfer to industrial end-users. Direct interaction with industrialists will be guaranteed by setting up an SME platform. The SME platform will be used to introduce ECIs to the industries and foster possible careers. This will be achieved by organising a 'SME day', so SME partners related to seaweed industries can present their activities to the future scientists and leaders of relevant sectors.

Objectives:
In the Cadiz Conference (SEP 2022) the objectives of the SME Platform were finalised and were: To bring together all the main players of the *Ulva* industries to:

- Identify the scientific bottlenecks and regulatory issues facing the industry
- Facilitate the transfer of knowledge from the Research entities to the industry
- Promote the creation of a network with other companies and research institutes to establish a consortium for future EU projects
- Promote ECI and connect Ph.D. and young scientists to industry

As SME Leader was approved after volunteering Dr Paul Kleidal (Denmark). However, he stepped down in late 2022 as he left his organisation. Dr Ioannis Tzovenis was approved in February 2023 after volunteering to take up the position.

ACTIVITIES AND KEY FINDINGS

ACTIVITIES

Meetings

1. At the Cadiz Conference (Sep 2022), objectives for the SME Platform were established.
2. The main issues were outlined at the Brussels SME meeting (Feb 2023).
3. In Riga (Sep 2023), topics included public perception, an animated clip presentation, licensing issues, sustainable seaweed cultivation, collaborations, R&D opportunities, the creation of a private LinkedIn channel, marketing strategies, and insights from a US professional.

- In Brussels (Apr 2024), SMEs presented, with participation from representatives across several countries. A cookbook was published with an introduction by Prof. Dr. Shpigel.
- In Galway (Sep 2024), knowledge gaps in industrial applications were identified, and the LinkedIn and WhatsApp group "Seawheat SMEs" was launched.
- In Cagliari (Jun 2025), a questionnaire on SME Platform performance and a detailed Ulva industry survey were presented.
- The Final Conference in Bremerhaven (Sep 2025) featured a session on the Ulva industry, keynote addresses on aquaculture trends, EU sector lessons, Danish seaweed efforts, support for algaepreneurs, and a review of the SeaWheat SME Platform, followed by a panel discussion on the industry's future.

Training Schools

- April 25-28, 2023: Training School for 14 ECIs (including industry participants) at Fisheries Research Institute, Kavala, Greece.
- June 26-29, 2023: Training School for 17 ECIs (9 from industry) at Grice Hutchinson Experimental Station, Malaga, Spain.
- May 14-17, 2024: Training School for 16 ECIs (3 from industry) at Koiguste Marine Field Station, Saarema, Estonia.
- June 26-28, 2024: Training School for 16 ECIs (2 from industry) at University of Aveiro, Portugal.
- April 1-4, 2025: Training School for 15 ECIs (with industry representation) at Fisheries Research Institute, Kavala, Greece.

KEY FINDINGS

Key issues include consumer acceptance, production challenges, negative public perception of seaweed in Europe, high production costsc and regulatory hurdles.
Ulva industry structure:

- 64 companies (17 in SeaWheat)
- 21 aquaculture producers (9 sea-based, 13 land-based, 6 IMTA)
- 33 harvesters (wild collection, blooms)
- 5 engage in both aquaculture & harvesting
- 32 processors (extracts, food preparations)
- 39 B2B sellers (raw & processed)
- 29 B2C retailers (mainly processed)
- 12 other roles (tech, R&D, platforms)

Challenges:

- Immature European sector: small size, limited collaboration, low awareness and demand, complex regulations, negative image
- Scale-up difficulties: high costs, fragmented value chain, stringent regulations
- Environmental risks: invasive species, nutrient depletion, monoculture vulnerabilities
- Climate change: increased Ulva blooms, risk of anoxia, worsened perceptions
- Socio-economic conflicts with fisheries and tourism, requiring multidisciplinary approaches

ACHIEVEMENTS

At the start of the Action, there was minimal communication between academia and the Ulva industry. Through the SeaWheat COST Action, we identified value chain stakeholders, facilitated meetings and training, and created tools like the SEEK search engine and online groups (LinkedIn, WhatsApp) to support collaboration. Large conferences further connected academia and industry, driving new ideas and projects. Ongoing engagement through surveys and discussions mapped industry needs and opportunities, leading to collaborative initiatives such as Novafoodies at the EU level and multiple national projects, with more proposals underway.

FUTURE DIRECTIONS & RECOMMENDATIONS

The thorough discussions and surveys between the industrial, academic and policy making stakeholders highlighted the following points for future progress:

- Selective breeding,
- Biotechnology,
- Microbiome engineering, quorum quenching,

- Circular economy practices,
- IMTA,
- Enable year-round production

Despite that the EU goal for 2030, i.e. to reach 8 M tonnes of seaweed, develop 85,000 jobs and bring in € 9 B in value, seems highly optimistic and challenging, the industry and the other stakeholders truly believe in the goal of ***Ulva*** **spp., to be the tomorrows Wheat of the Sea.**