

Workshop

European algae production, with major focus on needs assessment and strategies to bridge the knowledge gaps in production, processing and economic statistics

Where: Brussels, COST Association facilities

When: 5th and 6th of October 2017

Organization: JRC, FAO, COST Actions Phycomorph and Eualgae

Rationale:

The latest available FAO global statistics shows that the world production of algae, including mostly the marine macroalgae and some microalgae, has tripled in the first 15 years of the new millennium, reaching 30.5 million tonnes (wet weight) in 2015. World algae production is overwhelmingly dominated by aquaculture (96.4%), with most farmed algae (99.2%) originating from East and Southeast Asian countries.

The European production of algae was 228000 tonnes, contributing solely 0.7% to the world total algae production in 2015, a drop experienced gradually from around 4% in the late 1990s. The European seaweed production is mainly based on harvesting the wild stocks and has retained its share just above 20% of the world capture production of marine macroalgae for the past decade. While this practice might not sustainably supply the increasing market demand for algae biomass at the European and global scales, aquaculture production represents an alternative pathway to increase the European production capability and mobilize the algae biomass related market. In Europe, macroalgae aquaculture is still at an early developmental phase with an annual output at around 3000 tonnes in recent years. Increased algae production through aquaculture, including macro and microalgae, is gaining widespread recognition in Europe as an important resource that can be used as raw material for a wide range of established utilization and potential uses in the context of the European Blue Economy. However, reliable and comprehensive data characterizing the current situation are needed to evaluate the potential for the sustainable use of these resources, support the development of the production and processing sectors, and provide robust projections on the sustainable growth of the algae related economic activities. Recent reports on biomass production at the European level do not adequately reflect the contribution of this production method to the global production. While at the global scale the data available are of reasonable quality, for Europe serious knowledge gaps exist mainly related with lack of data reporting for several years and regions, underreporting of data from Member States, and lack of detailed information at the species uses and market level.

This situation seriously prevents comprehensive and reliable analysis on the European algae sector to be performed, and to effectively inform stakeholders and sectorial policies with relevant input.

The Joint Research Centre's institutional project BIOMASS (<https://biobs.jrc.ec.europa.eu/page/biomass-assessment-study-jrc>), mandated by several Directorate-Generals (DGs) of the European Commission, has as main objective to estimate the supply, demand and flow of biomass sources at the European and Global level for diverse sectors (including marine) and forecast the sustainability of the activities based on these

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resources. This assessment is aimed at supporting sectorial policy measures, and at developing and analyzing scenarios for biomass supply and demand with short-term (2020), medium-term (2030) and long-term (2050) perspectives. This is in line with the EU long-term Blue Growth strategy recognizing the potential for innovation and growth of the maritime sectors while simultaneously assuring the protection of the marine ecosystems and the services they provide, and with the Europe 2020 strategy for smart, sustainable and inclusive growth.

Objectives:

This workshop aims at bringing together relevant players from the algae data management, production and processing sectors in Europe to discuss effective responses to the previously identified lack of baseline quality data on algae biomass at the European level. This initiative is foreseen to i) target the main knowledge gaps and needs regarding data on algae biomass supply, demands and flows at the European level; ii) discuss the reasons driving the identified gaps and iii) provide recommendations on the ways forward to solve the identified problems. The workshop is also aimed at launching alternative effective tools to integrate reliable knowledge on the sector at the short-term.

Outcomes and deliverables:

The workshop expected outcomes are:

- an expert network to provide technical support to requests related with algae European biomass;
- an algae industry directory where ready to use basic updated information may be obtained by any users in a timely and dynamic way;
- a report where the priorities and current constraints on data collection and reporting of algae biomass in Europe are identified.

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Programme

Day 1:

9.00: Registration

9.10: Welcome: **Ronald de Bruin** (President COST Association)

9.20: Opening of the workshop: **Nicolas Hoepffner** (EC, DG JRC)

9.30 – 13.00: Session 1: Knowledge needs and data reporting

Aim of the session: to describe the current situation regarding needs, data availability and reporting constraints on algae biomass production at the European level.

9.30 Overview

Chair: Nicolas Hoepffner (EC, DG JRC)

Knowledge needs on algae biomass to support EU policies for the Maritime Environment (**Eoin Mac Aoidh** - EC, DG MARE);

EU Research and Innovation of algal biomass to support evidence based policy making (**Paola Reale** - EC, DG RTD);

The JRC BIOMASS assessment study: main results and knowledge gaps on the algae biomass sector (**Rita Araujo** - EC, DG JRC);

Brief overview of algae production - species, farming systems and uses (**Xiaowei Zhou** - FAO).

10.30 *Coffee break*

10.45 Data reporting

Chair: Benedicte Charrier (Station Biologique de Roscoff)

Statistics on algae biomass in Europe (**Friderike Oehler** - Eurostat) (videoconference);

Fishstat database: What is the status of algae biomass supply, flows and economic value data at the global and European level: which gaps and needs? (**Xiaowei Zhou** - FAO);

Data reporting: the reporting flows on algae biomass at the Member States level (**Teresa Taborda** - DGRM).

11.30 – 13.00: Group discussion

13.00 *Lunch*

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14.00 – 17.30: Session 2: Data on Biomass supply, demand and flows

Aim of the session: to describe the production sector in Europe regarding the methods used to supply biomass, the market demands and the trade flows as well as the current constraints to the sector from the industry perspective.

14.00 Macroalgae

Chair: Rita Araujo (EC, DG JRC)

The Danish algae biomass production and processing sector (**Susan Holdt** – *Technical University of Denmark*);

The Norwegian algae biomass production and processing sector (**Celine Rebours** -*Moreforsk*);
Biomass demand and data availability in aquaculture based seaweed producing companies (**Helena Abreu** - *Algaplus*);

Biomass demand and data availability in harvesting based seaweed producing companies (**Micheal MacMonagail** - *Arramara Teo*);

Biomass demand and data availability in harvesting and aquaculture based seaweed producing companies (**Frank Neumann** - *Seaweed Energy Solutions*);

The COST Action Phycomorph role in filling the knowledge gaps in the macroalgae sector in Europe (**Benedicte Charrier** - *Station Biologique de Roscoff*);

The conclusions of the Phycomorph workshop on the development of guidelines on seaweed aquaculture (**Michele Barbier** – *Institut de Science et Ethique*).

15.30 *Coffee break*

15.45 Microalgae

Chair: Xiaowei Zhou (FAO)

Microalgal biotechnology in Europe (**Giuseppe Torzillo** - *Instituto per lo studio degli ecosistemi del CNR*);

Microalgae biomass harvesting technologies: current status and main constraints (**Koemraad Muylaert** - *KU Leuven University*);

Production and commercialization of microalgae related products (**John Dodd** - *AlgaeCytes*);

Production of microalgae and biomass application paths (**João Navalho** – *Necton*);

The French algae biomass production and processing sector (**Bertrand Jacquemin** - *CEVA*).

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17.00 – 17.30: Presentation of the results of the questionnaire sent to industry and group discussion

Day 2:

9.00 – 13.00: Session 3: Tools to gather knowledge on algae biomass production in Europe

Chair: Eoin Mac Aoidh (EC, DG MARE)

Aim of the session: to present and discuss different approaches and initiatives to improve the availability and quality of knowledge on algae biomass production in Europe.

Presentation of the EMODnet interface (**Alessandro Pititto** - *Cogea Srl*);

The Irish algae biomass production and processing sector and the experience of the Netalgae project with the organization of an industry directory (**Mairtin Walsh** - *BIM*) (videoconference);

The Bioeconomy Knowledge Centre (**Michael Klinkenberg** - *DG JRC*);

Expert networks in practice: the experience of the KNEU and EKLIPSE knowledge platforms (**Estelle Balian** – *Belgian Biodiversity Platform*);

Knowledge constraints and needs to foster the development of the algae production sector (**Aleksander Handa** - *SINTEF*);

Lessons learned from seaweed management practices worldwide (**Celine Rebours** - *Moreforsk*).

10.30 *Coffee break*

10.45 – 12.30: Group discussion

12.30: Wrap up and conclusions