

Workshop 12-13 December 2019, GEOMAR, Kiel-Germany
“Interest in algae farms for the marine environment”



CONTEXT

The interactions of algae monocultures with their environment and their use in integrated marine aquaculture are **increasingly attracting scientific interest** because of their key roles in marine biodiversity, ecological processes and biogeochemical cycles. Algae aquaculture, besides providing income, can be a tool for carbon fixation, reducing nutrient loads in coastal waters, and for conservation/ restoration of biodiversity and ecosystem services in disturbed environments. The socio-economic and environmental effects need to be considered.

THE WORKSHOP

Twenty experts from eight EU countries, Israel and Senegal participated in the workshop **“RECOVER: Seaweed aquaculture: A promising tool for the restoration and sustainable development of coastal environments or an expensive end-of-pipe technology?”**; supported by the European Marine Research Network EUROMARINE and jointly organized by Dr. Birgit Quack (Chemical Oceanography) and Dr. Florian Weinberger (Marine Ecology) from GEOMAR, Helmholtz Centre for Ocean Research Kiel.



DISCUSSION AND CASE STUDIES

The lively discussion revolved around the **potential, benefits, drawbacks and obstacles of algae aquaculture** in Europe and Africa, especially for coastal restoration and recovery in demonstration regions with different oceanographic, biogeochemical and ecological conditions.

These demonstration regions included the Bay of Dakar (a heavily polluted environment with direct sewage disposal), Madeira (coastal waters described as a disturbed environment in nutrient-poor water), and the southern Baltic Sea (habitat over-fertilized by nutrient-rich surface runoff).



Scientific Consensus

After intensive open discussions of the pros and cons from different perspectives, the participants agreed that algal aquaculture can be a good measure to improve the status of disturbed or polluted coastal habitats and even restore them towards good status. However, as each region is unique and has various ecological and socio-economic constraints, algae aquaculture must be planned according to the specific local goals and challenges. Topographic, environmental conditions and stressors influence the ecological effect as well as the species used, the spatial extent of facilities and the timing of the work to be carried out.

During the workshop days a network of researchers and environmentalists was established, which is now preparing a position paper and is collecting information for pilot experiments in the three demonstration regions.