## ANNEX

## PROJECTS IN THE THEMATIC SESSION ON AQUACULTURE

**BIO-TIDE** – The role of microbial biodiversity in the functioning of marine tidal flat sediments

The overarching objective of the BIO-Tide project is to identify and quantify the relation between microbial biodiversity and carbon cycle related ecosystem functions in contrasting tidal flat environments (sand vs silt) in the explicit context of biotic interactions. Focus will thus be on the carbon cycle and ecosystem functions which are directly implicated in the carbon cycle (e.g. primary and secondary production, extracellular polymer substance production) or indirectly dependent on this cycle (sediment stability). BIO-Tide will in particular assess and quantify the effect of benthic microalgae diversity on the productivity of a commercial suspension feeder (the oyster Crassostrea gigas). The project will draw conclusions on the role of tidal flats in trophic chains (e.g. invertebrates, oysters, etc.) and for coastal management (e.g. where to install aquaculture farms, development of remote sensing techniques).

Study sites: Bay of Bourgneuf (France) and the Paulina tidal flat system (The Netherlands)

**MARFOR** – Functional Variability and Dynamics of Responses of Marine Forests to Global Change

Project MARFOR aims to understand the critical features (adaptive, eco-physiological, genetic biodiversity and connectivity) that support the functioning of blue green infrastructures created by habitats of marine forests of large brown algae along the European coastlines, and incorporate the knowledge of seascape biodiversity dynamics and critical features to model and forecast consequences of global change drivers under future scenarios. In particular, MARFOR will work towards the improvement of genetics in breeding programs for algal aquaculture. The project will contribute to strain selection for cultivation under predicted changing climatic conditions, in addition to providing a first assessment of the risks of gene flow between cultivated and natural populations.

Study sites: European seaweed dominated ecosystem stretching along the European coastlines from the Arctic southwards, including the North Sea and Baltic sea, central N Atlantic (Azores) and eastwards from the Atlantic/Mediterranean transition zone into the western and eastern Mediterranean Sea.

**PERCEBES** – Tools for the transition to spatial management of coastal resources: the stalked barnacle fishery in SW Europe.

PERCEBES will deliver a scientific and practical demonstration of the effects of stalked barnacle (SB) harvesting on biodiversity, productivity and connectivity of SB stands. This will be done by a continental-scale, Human Exclusion Experiment and by construction of regional, spatially explicit Bioeconomic Models covering the latitudinal range where SB are exploited in the EU. The experiment will simulate the effects of harvest halts and test the effect on the biodiversity, productivity and economic value of the SB and on their potential to produce larvae. In addition, the project will deliver bio-economic models and tools to forecast spatial co-management implications on productivity at a continental scale, and expects to draw conclusions transferable other cultivated species.

Study sites: coastal strips in Alentejo (SW Portugal), Atlantic Galicia (NW Spain), West Coast of Asturias (N Spain), South Brittany (North of the Bay of Biscay, France)