



netalgae

INTER-REGIONAL NETWORK TO PROMOTE SUSTAINABLE
DEVELOPMENT IN THE MARINE ALGAL INDUSTRY

SEAWEED INDUSTRY IN FRANCE

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ATLANTIC AREA Transnational Programme
ESPACIO ATLÁNTICO Programa Transnacional
ESPACE ATLANTIQUE Programme Transnational
ESPAÇO ATLÂNTICO Programa Transnacional



INNOVATION NETWORKS
REDES DE INNOVACIÓN
RÉSEAUX D'INNOVATION
REDES DE INOVAÇÃO



European Union
European Regional
Development Fund

AGRO
CAMPUS
OUEST

pôle halieutique

1. SEAWEED PRODUCTION

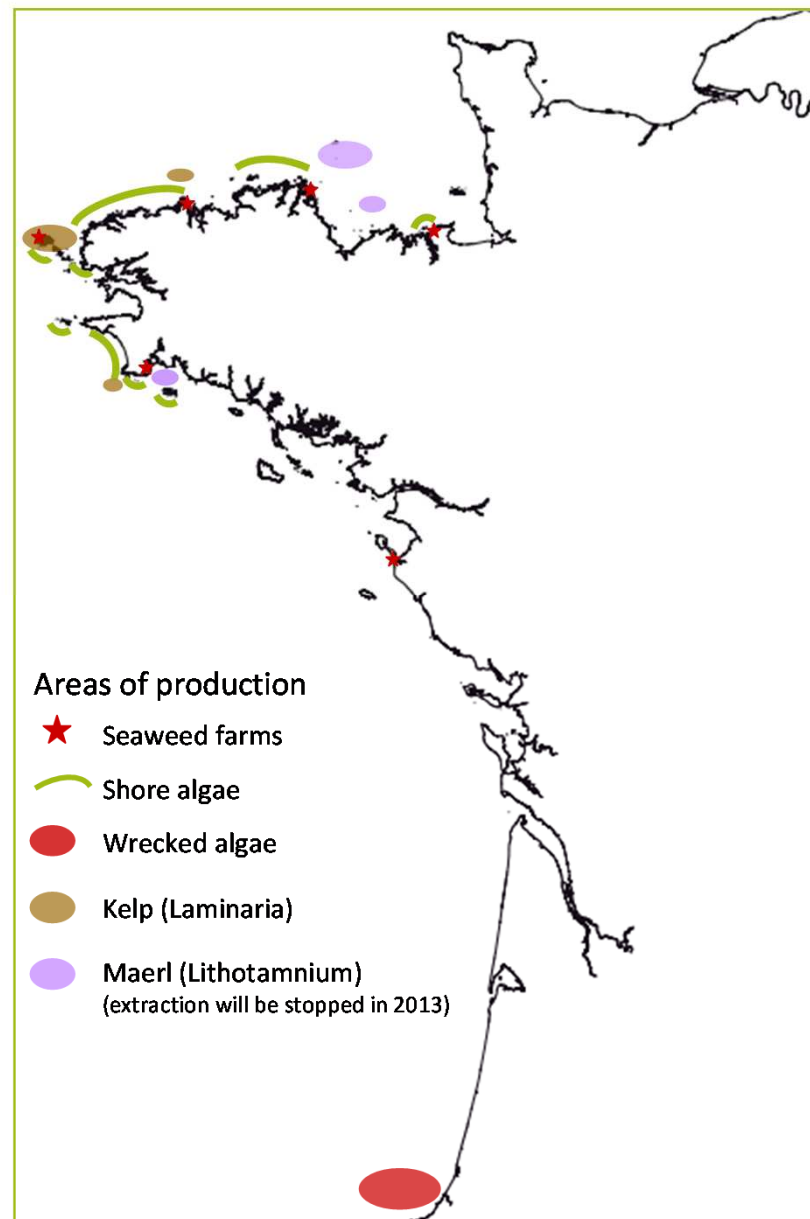
- *Harvesting techniques*
- *Management and regulation*

2. SEAWEED USES

3. PERSPECTIVES OF FRENCH SEAWEED INDUSTRY

Seaweed production

- Main producing area in Brittany
- Almost 70 000 tons of raw materials coming from the harvesting of wild resources
- 50 tons from seaweed aquaculture



Administrative and management functioning in France Ex.: Brittany



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Harvesters working on board seaweed boats



- considered as fishers
- legal status => access to health insurance, retirement pensions and other social benefits.
- French fishers have their own social security fund, the ENIM, to which they contribute monthly.

Regulation of mechanical harvesting

- Annual licenses to the harvester and his boat delivered by regional authorities
- How to get a license?
 - To be affiliate to the maritime social welfare (ENIM)
 - Boats must not exceed 12 meters
 - Payment of fees to fisheries organizations (100 €)
 - Justification of statistical declaration from previous year

Seaweed harvested by boat

- *Laminaria digitata*
 - with a scoubidou
- *Laminaria hyperborea*
 - with a trawl
- *Gelidium sesquipedale*
 - with a net near the foreshore



Regulation of mechanical harvesting

- *Laminaria digitata*
 - 35 licenses
 - Total landings dictated by the processing industries ($\approx 47\,000$ tons)
 - Divided among the boats
 - Contract between an industry and a fisher
 - May to October
- *Laminaria hyperborea*
 - Quotas: 26 000 tons / Production: 11 000 tons
 - April to December
 - Each area is closed for 5 years
 - Fishers have to collaborate with scientists (harvesting areas, yield, impact...) so that scientists can monitor the activity

(D'après la réglementation en vigueur en novembre 2010)



Limites administratives
 — Limite régionale
 — Limite des 12 milles

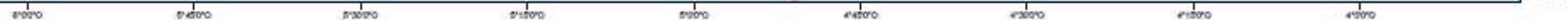
 Cantonnement

 Chenal d'accès au port

Arrêté n°1253 du 26/05/2010
Délibération "ALGUE-NF-2010-B2" du 02/04/2010

Zone d'exploitation de *Laminaria hyperborea* (licence spéciale *Laminaria digitata*)

Zone d'exploitation de *Laminaria hyperborea* (licence spéciale *Laminaria digitata*)



Seaweed gatherers on shore

Professional gatherers

Independent workers

56 authorisations in 2010

Social security system
(agricultural or fishers
system)

Temporary gatherers

Temporary employed by
industries

About 300

General system social security
TESA : system used in agriculture
to employ people for short
periods only 3 times a year

Professional foot gatherers

Every year



Professional gatherer

- produce a certificate detailing to whom he is selling the production
- species, quantities, location and period of the harvesting of previous year



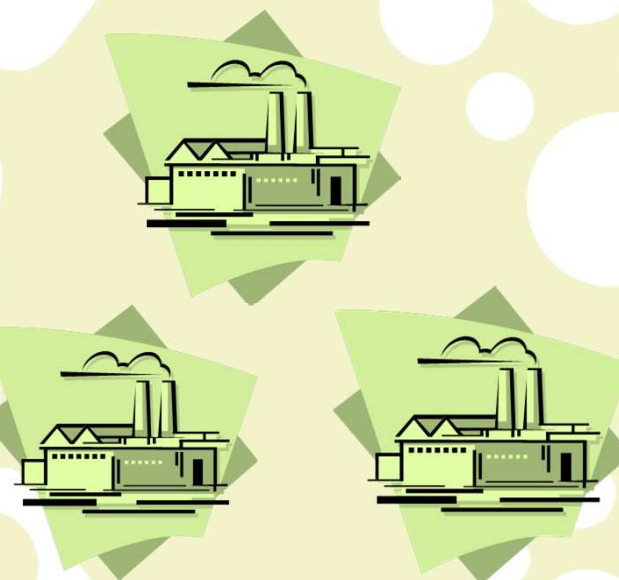
administrative
authorisation



Temporary foot gatherers employed by industries



Temporary worker



Seaweed industries (trade and/or processing)



Salary based on the quantity
harvested



Temporary foot gatherers employed by industries



Seaweed industries (trade and/or processing)

- Number of temporary workers TESA
- species, quantities, location and period of the harvesting



administrative
authorisation



Gathering on shore : regulation

- Some species can't be uprooted
- Some species must be cut above the holdfast using a sickle to allow the regrowth
- Some species must have a minimum legal size to be harvested
- Some species must be harvested during a specific harvesting period
- There are quotas for *Ascophyllum* in a specific harvesting zone



Chondrus crispus

© IFREMER



Ascophyllum nodosum

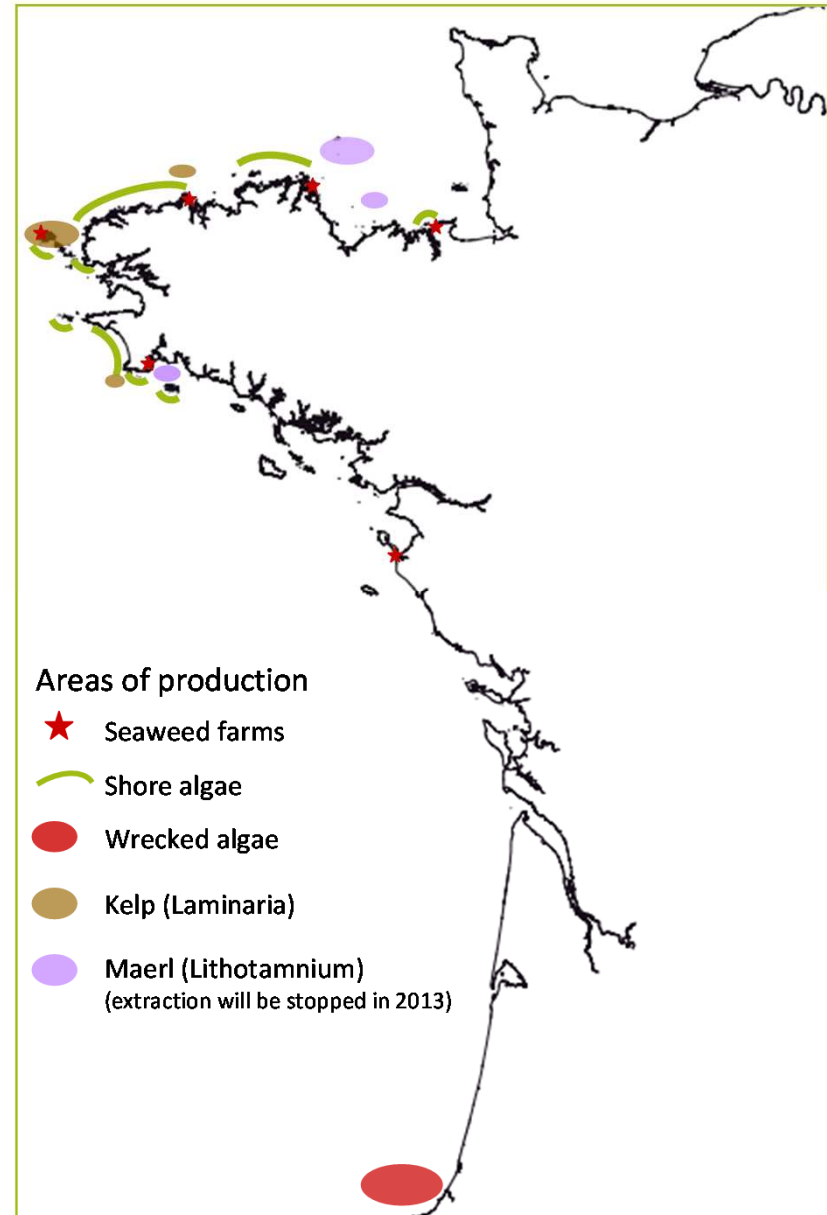
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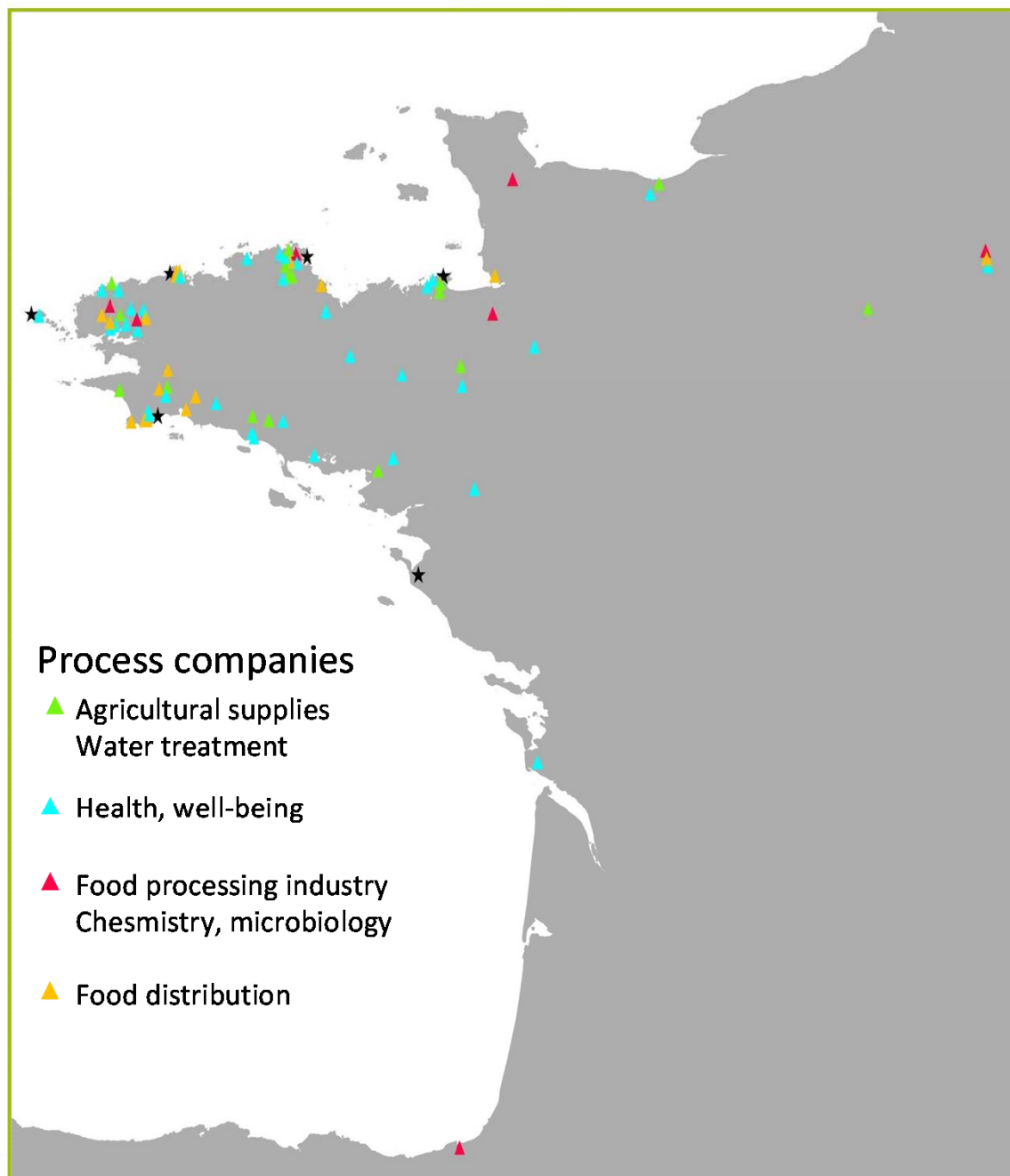
Fucus spiralis

© AGROCAMPUS OUEST

Seaweed production



Seaweed uses



Uses of seaweed

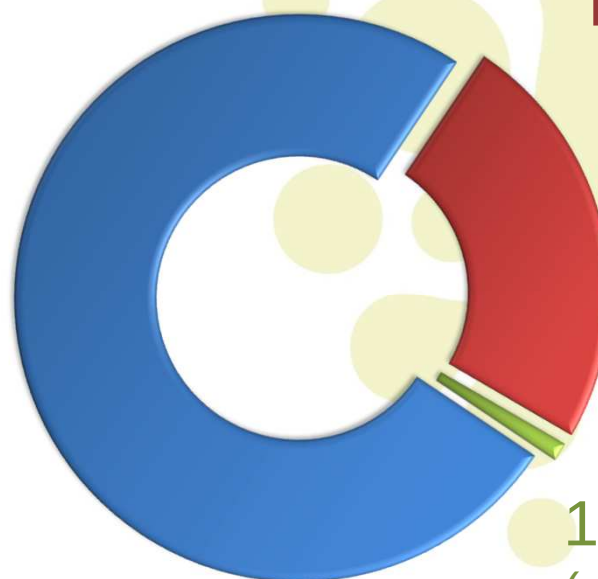
75% FOOD PROCESSING INDUSTRY,
 CHEMISTRY, MICROBIOLOGY

*alginate,
 agar-agar,
 carrageenans*

24% AGRICULTURAL SUPPLIES,
 WATER TREATMENT,
 HEALTH, WELL-BEING

*Fucus spp., Ascophylum,
 Lithothamnium*

=> *Cattle food, fertilizers,
 etc.*



1% FOOD DISTRIBUTION
 (seaweed vegetable)

*Palmaria palmata,
 Porphyra umbilicalis ,
 Undaria pinnatifida*

Perspectives of development of French seaweed industry



Organic seaweed

European regulation CE n°710 / 2009



Application of European regulation depends on national interpretation.
INAO (National Institute of Origin and Quality)

Seaweed can be certified as organic only if produced in :

- waterbodies with " good ecological state " or " very good ecological state " and good chemical state according to the water framework directive

and

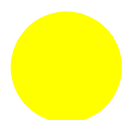
- Shellfish areas, quality A or B

Organic seaweed

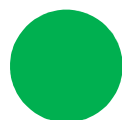
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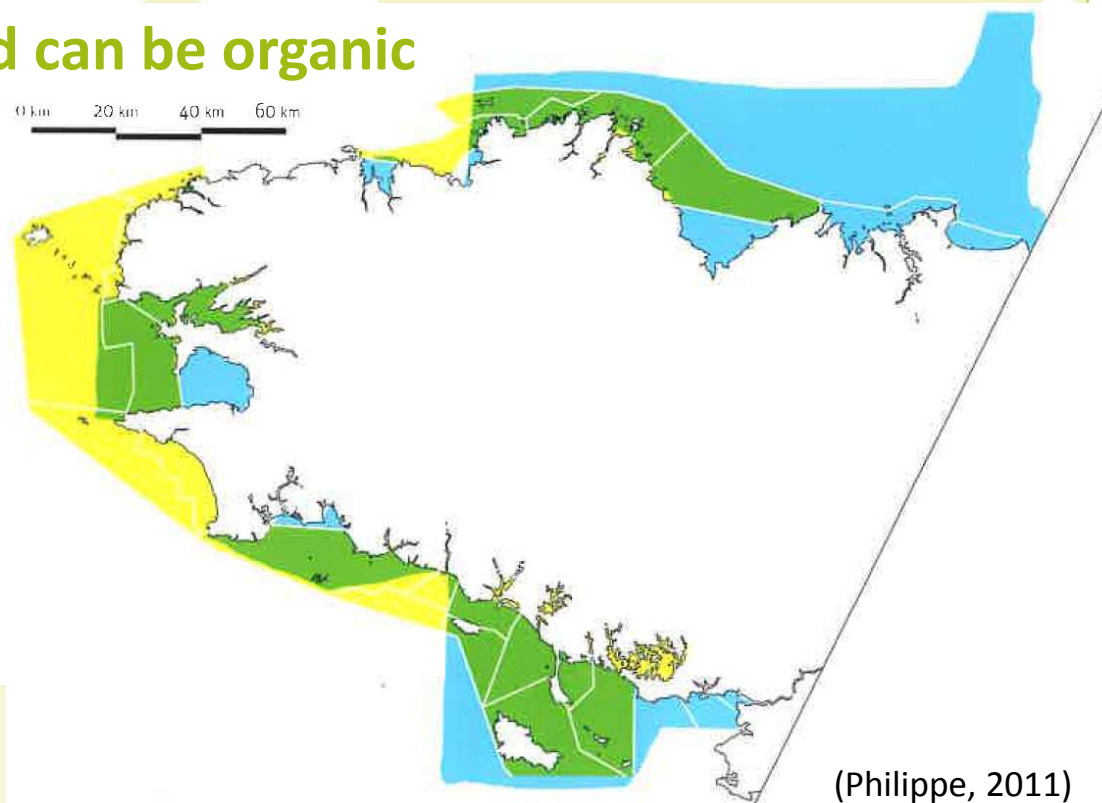
waterbodies with " good ecological state " or " very good ecological state " and good chemical state according to the water framework directive



Areas where seaweed can be organic



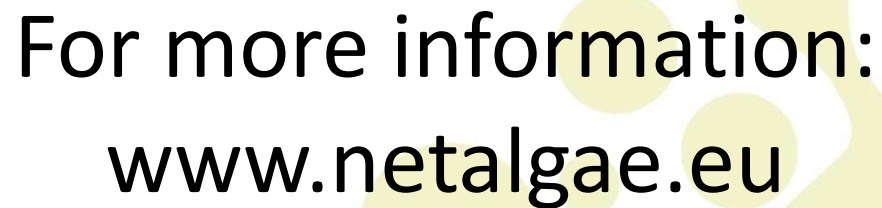
Shellfish areas, quality A or B



(Philippe, 2011)

Seaweed aquaculture

- Only 6 seaweed producers (*Undaria pinnatifida*, *Saccharina latissima*)
- But lots of projects aim at developing seaweed aquaculture in France
- The objective is to diversify the activity of oysters' farmers facing economic difficulties due to the over-mortality of oysters.

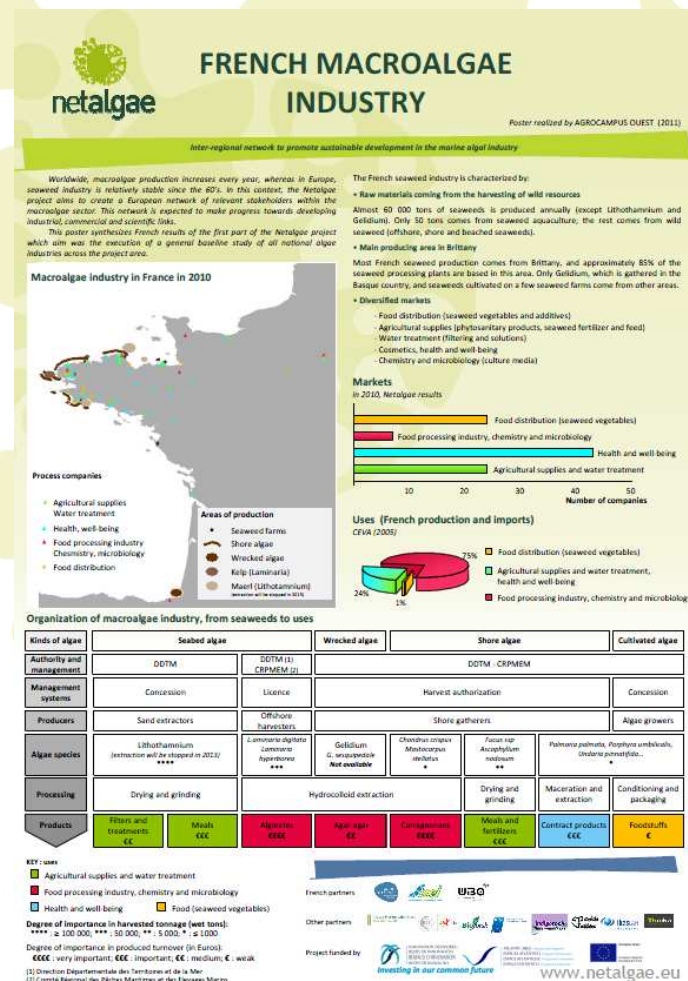


Seaweed industry in France

NETALGAE project • Interreg IVb
WP1 and 2 report



2012



Thank you for your attention

- French partners of Netalgae

