

More than fish in the ocean
Or: Seaweed as an answer to almost everything

TANGO Seaweed – 3 years and going strong

Lise Chapman, TANGO Seaweed
SIG Seaweed Meeting, Trondheim, 27. 11. 2019





**Our journey towards...
...a successful business and a healthy planet**

TANGO Seaweed AS (since 2016)

2 Founders

- Annelise Chapman, Bjørn Otterlei
- Other investors, shareholders, partners, staff*, volunteers, funders

*currently (2019): 2 permanent 100% staff, 1 technical manager (50%), 8 seasonal staff (app. 3-4 full appointments in total)

Goal

- **Production and sales of seaweeds and related products according to nature's models and principles**
- **R & D and communication / education on commercial seaweed production, incl. natural and resource cycles**

Status

- Two cultivation licenses in Herøy, Western Norway (43ha), pilot-scale operation (2ha) since 2017
- Two production cycles completed, product development and sales ongoing



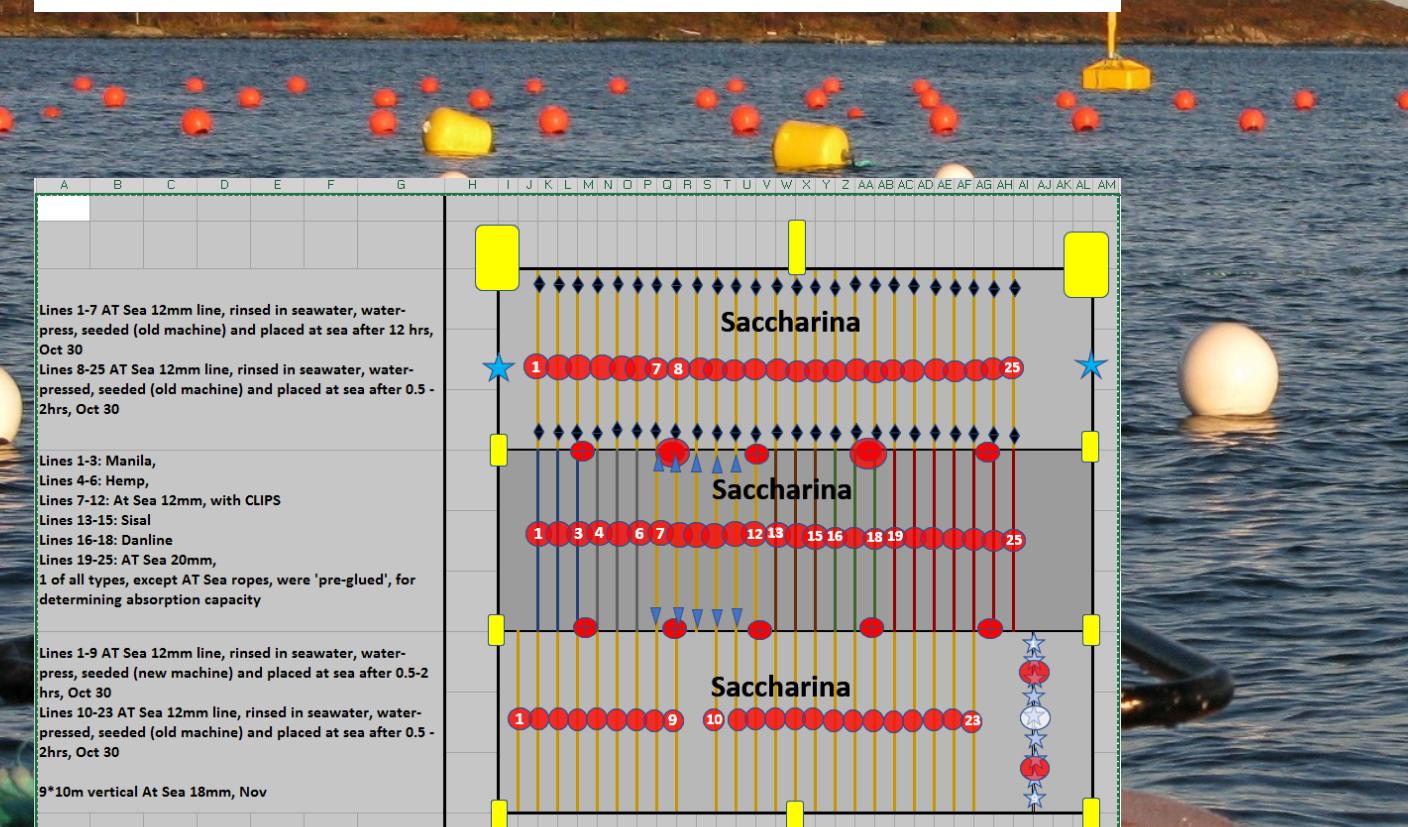
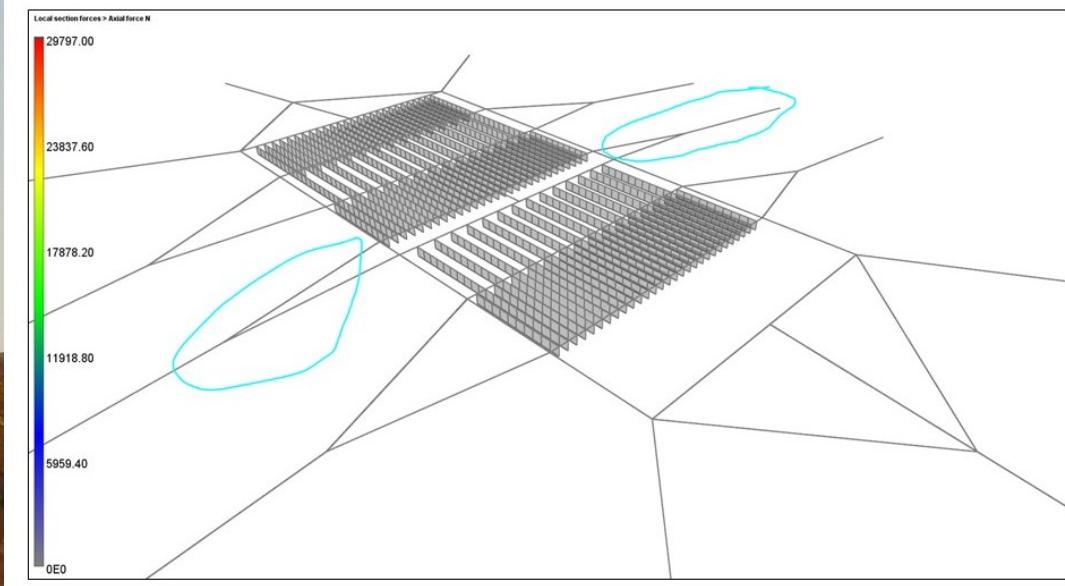
Strong team and network:



BLUE LEGASEA

Norwegian Biomarine Resources



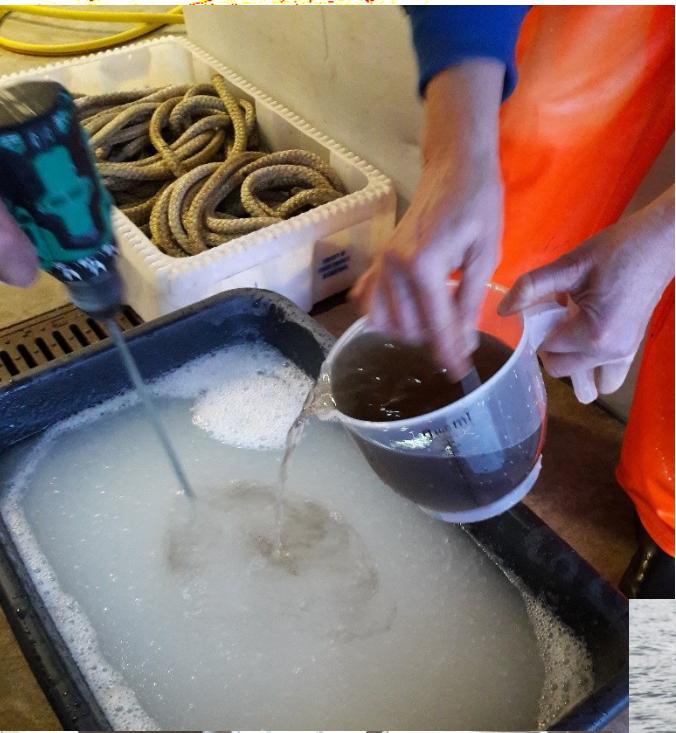


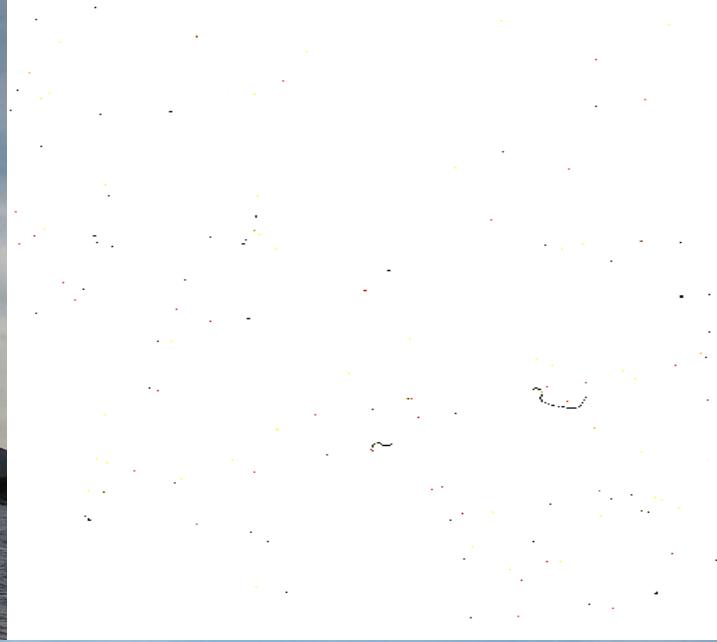
How do we do it?



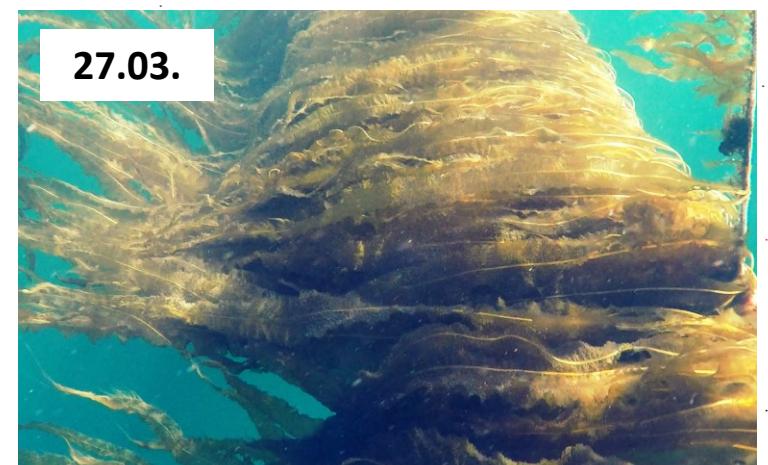
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Direct Seeding (*Saccharina latissima* & *Alaria esculenta*) & Deployment





Growth from November to April/May



Harvesting – manually, taking up entire lines





Air Drying

A wide-angle photograph of a large industrial or agricultural facility where tobacco leaves are being processed. The room is filled with thousands of long, thin, yellowish-green tobacco leaves hanging from the ceiling in dense, vertical clusters. The lighting is dim, with bright overhead lights reflecting off the leaves. In the background, there are some industrial structures and equipment. The word "Drying" is overlaid in white text at the top center.

Drying



Stabilised Raw Material

Business segments

Stabilised Raw Material - Bulk



SALES

Consumer – Retail – Products

First regional, now national markets (organic labelling)



Education, R&D, Communication

Education, R&D, Communication



Business segments

Stabilised Raw Material - Bulk



SALES

Consumer – Retail – Products

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Education, R&D, Communication

Ecosystem Services – CO₂-uptake, nutrient-cycling (water quality improvement), provision of habitat

Business segments

SALES

Stabilised Raw Material - Bulk



Economic viability depends on larger volumes and lower production costs

Main challenge: Reliable and efficient production at sea (quality & quantity):

- Seed quality
- Factors of **uncertainty and variation** include:
 - Physical parameters (temperature, light, nutrients, currents, etc)
 - Biological parameters (species interactions, fouling, competition, overgrowth, parasites, disease)
- Technical challenges (mechanisation etc)

→ Scalability not yet possible
(economically viable and ecologically safe)

Business segments

SALES

Consumer – Retail - Product



Main challenge: Logistics & Distribution

Advantages:

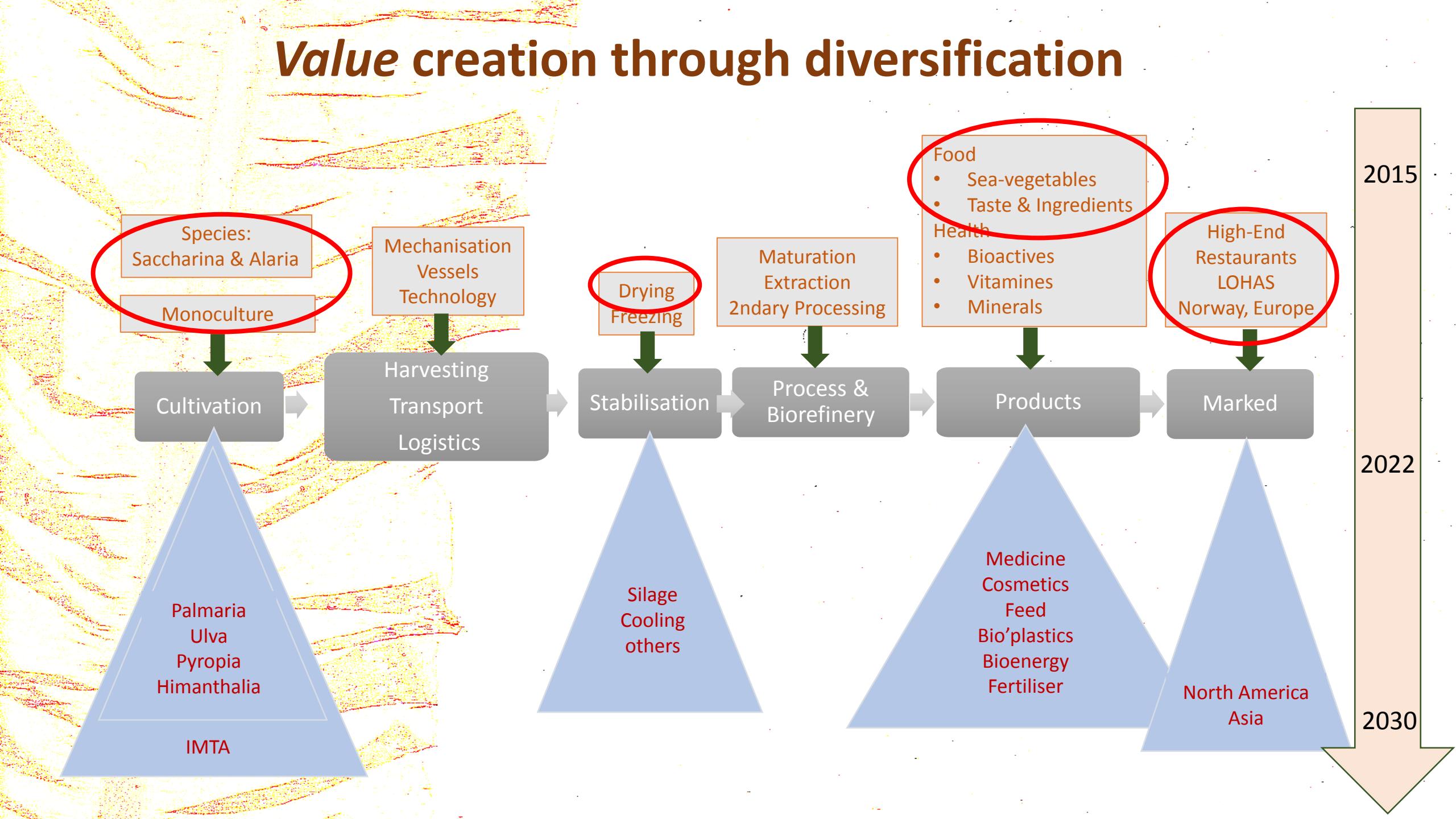
- Little raw material necessary to achieve value creation / margins
- Promoting diversity and opportunities
- Tool for communication
- Preparation of bulk market
- Communication and Brand Development – telling our story

Economic viability is (almost) independent of raw material production volumes



Scalability is possible

Value creation through diversification



A close-up photograph of a large, healthy kelp frond. The frond is a vibrant yellowish-brown color, with many long, thin, serrated leaves branching off from a central stem. It is set against a dark, almost black, background which makes the bright color of the kelp stand out.

Thank you for your attention
www.tangoseaweed.no