

A27342- Unrestricted

Report

Seminar: Aquaculture in Brazil

August 2015

Author(s)

Gunvor Øie

Roger Richardsen, Pål Myhre and Kjell Inge Reitan



Report

Seminar: Aquaculture in Brazil

August 2015

KEYWORDS:

Keywords

VERSION

Version

DATE

2015-11-25

AUTHOR(S)

Gunvor Øie

Roger Richardsen, Pål Myhre and Kjell Inge Reitan

CLIENT(S)

NFR Havbruk and NorLARNet

CLIENT'S REF.

Kjell Naas

PROJECT NO.

6020883

NUMBER OF PAGES/APPENDICES:

9

ABSTRACT**Abstract heading**

In August 2015 the seminar "Aquaculture in Brazil" was arranged in Trondheim with participation from industry, research, government and funding institutions both from Brazil and Norway. The Minister of Fisheries and Aquaculture in Brazil (Helder Barbalho) did open the seminar. The seminar covered presentations of the status and potential of Brazilian Aquaculture and presentation of the Norwegian aquaculture sector. The presentations from Norway covered both the history of salmon aquaculture, success factors when building new industry, and how to develop marine aquaculture activities in new countries.

The financial support from both NFR and NorLARNet to arrange the seminar has been crucial. This support did enable invitation of several experts from universities, research institution and government as speakers. The seminar was a success, and new projects and more cooperation will be possible in the future.

PREPARED BY

Gunvor Øie

SIGNATURE**CHECKED BY**

Kjell Inge Reitan

SIGNATURE**APPROVED BY**

Gunvor Øie

SIGNATURE**REPORT NO.**

A27342

ISBN

978-82-14-06017-1

CLASSIFICATION

Unrestricted

CLASSIFICATION THIS PAGE

Unrestricted

Document history

VERSION	DATE	VERSION DESCRIPTION
Version No.	Date	"[Version description.Use TAB for new line]"

Table of contents

1	Objective.....	3
2	Invited experts from Brazil to the seminar.....	4
3	Program	5
4	List of participants	6
5.	Seaweed workshop	7
6.	Dissemination	8
7	Budget	9

APPENDICES

[List appendices here]

1 Objective

The project *Marine aquaculture as a sustainable green industry in Brazil (SUSAQUA-BRAZIL)* was granted from the Norwegian Research Council, Latin America Program, in 2014. The overall objective of the project is to study and recommend different sustainable technologies for large scale macroalgae and marine aquaculture that can be applied at the Brazilian coast. The activity of the project will focus on competence building on aquaculture production in Brazil and understanding of the research possibilities for developing this activity in Brazil. The specified sub-goals of the project will increase the knowledge of the bio-marine sector in Brazil in addition to strengthen high quality research within targeted areas.

The project has 4 work packages:

1. Compare different strategies for large scale cultivation of macroalgae in Brazil to cultivation status in Western Europe. Potential for Integrated Multitrophic Aquaculture.
2. Describe the feasibility of marine aquaculture sector in Brazil.
3. Evaluate the market and techno-economic performance of marine aquaculture in Brazil.
4. Describe the adaptive capacity of developing marine aquaculture

After a start-up meeting in November 2014 during the FENACAM conference in Fortaleza, Brazil, the project group decided to arrange a seminar in Trondheim during the Aqua-Nor Aquaculture

Exposition (August 18. - 21. 2015). The seminar covered presentations of the status and potential of Brazilian Aquaculture to stakeholders in the Norwegian aquaculture industry.

The SUSQUA BRAZIL project is a joint cooperation between Brazilian partners, Marine Design (Norway) and SINTEF Fisheries and Aquaculture, Trondheim.

The financial support from the NorLARNet and NFR to arrange the seminar has been crucial. Invitation of several experts both from universities, research institution and government was important. The seminar was a success, and will be important in developing future new projects and more cooperation between Norwegian stakeholders and Brazilian aquaculture research institutions, government and industry.

2 Invited experts from Brazil to the seminar

The seminar was planned as an open arena additional to projects meetings in the group of cooperation partners in the SUSQUA- project. All the members in the cooperation group from Brazil that attended to the workshop were:

Dr. Joao Felipe Matias: Vice Minister of Aquaculture in Ministry of Fisheries and Aquaculture. He presented the "Brazilian Aquaculture National Plan (2016/ 2020)" in the seminar.

Eric Routledge, Head, Research and Development, EMBRAPA (Brazilian Agricultural Research Cooperation). Embrapa, as a national body for innovation and development within agriculture, also make substantial contribution for fresh water aquaculture in Brazil. Mr. Routledge was previously working in the Ministerio da Pesca e Aquicultura (MPA) with the responsibility to the research department of the Ministry.

Dr. Alborto Nunes, Professor at LABOMAR Institute, Fortaleza. He is an expert in shrimp nutrition and has long experience from national and international applied projects to several fish species of relevance to Brazilian waters.

Dr. Leila Hayashi, Federal University of Santa Catarina, Florianopolis. She is an expert on macroalgae production.

Dr. Erica Vidal, Federal University of Parana. She is an expert on cultivation of octopus. Erica Vidal was not able to come to the seminar, and her group participated with **Dr. Jose Guilherme Filho Bersano**

Dr. Rodrigo Carvalho, Federal University of Rio Grande do Norte, Natal

3 Program

The Minister Helder Barbalho (Ministry of Fisheries and Aquaculture, Brazil) opened the seminar.

Place: NTNU SeaLab, Brattørkaia 17B, Trondheim (20. August, 16.00-19.00)

- 16.00-16.05 Welcome**
Roger Richardsen, SINTEF
- 16.05-16.25 Opening by Minister Helder Barbalho, Ministry of Fisheries and Aquaculture, Brazil**
- 16.25-16.35 Norway Cooperation Agreement in Fisheries and Aquaculture by J. Williams, Ministry of Trade, Industry and Fisheries, Norway**
- 16.35-16.45 The SUSQUA-Project:**
Gunvor Øie, Research Director Marine Resources Technology, SINTEF
- 16.45-17.05 Brazilian Aquaculture National Plan (2016/ 2020)**
Joao Felipe Matias, Vice Minister of Aquaculture in Ministry of Fisheries and Aquaculture, Brazil
- 17.05-17.25 Research and aquaculture development in Brazil**
Eric Routledge, Head, Research and Development, EMBRAPA (Brazilian Agricultural Research Cooperation)
- 17.25-17.45 The shrimp industry and marine fish farming in Brazil**
Alberto Nunes, Professor LABOMAR institute, Brazil
Development of new aquaculture cooperation Norway – Brazil
- 17.45-17.55 Brasil-Norge OIE twinning project: cooperation in aquaculture health and diagnostics. Senior scientist Carlos Gonçalo das Neves, Norwegian Veterinary institute**
- 17.55-18.10 Salmon-a success story in Norway**
Karl Almås, special advisor SINTEF, Norway
- 18.10-18.25 Experience of starting international aquaculture business**
Bjørn Myrseth, Vitamar AS
- 18.25-18.40 Cooperation between Norway and Brazil**
Helle Moen, Innovation Norway
- 18.40-19.00 Follow up – discussion and status for Brazil**
Pål Myhre, Marine Design

All the presentations are available on SINTEF web:

<http://www.sintef.no/prosjekter/susaqua-barekraftig-gronn-industri-i-brasil/presentations-from-seminar-2015/>

4 List of participants

The seminar got a preregistration of 40 participants as the participation had to be limited to 40 due to the size of the seminar room. The list of participation below shows these participants. However, due to the decision of open entrance to the seminar we got in total 53 persons in the seminar.

Last Name	First Name	Title	Company
Bersano	Jose Guilherme Filho		Federal University of Paraná - BR
Burgos	José Miguel		Sernapesca
Carvalho	Rodrigo		EAJ / UFRN
Carvalho Filho	Jomar		Panorama da Aquicultura Magazine
Das Neves	Carlos		Norwegian Veterinary Institute
Echaurren	Gregorio		FAV
Fjalestad	Kjersti		Norges forskningsråd
Forbord	Silje		Sintef
Forno	Pablo		Private Senior Consultant
Gallardo	Alicia		Sernapesca
Gong	Yangyang		University of Nordland
Grønlie	Nils Arne		Pharmaq AS
Hayashi	Leila		Federal University of Santa Catarina
Ito	Thais		Seafood Brazil Magazine
Kauer	Alvaro		FAV
Lara	Marcela		Sernapesca
Lien	Linda		Utviklingscenteret AS
Markovic	Milan		SENSOMAR AS
Markovic	Oscar		SENSOMAR AS
Matias	Felipe		Brazilian Ministry of Fisheries and Aquaculture
Morten	Laake		Sigtun Innovation AS
Mortensen	Atle		Nofima
Neves	Luiza		Seaweed Energy Solutions
Neves	Pilar		Innovation Norway IN Rio
Nguyen	Kim		Kunsthøgskolen i Oslo
Norderhus	Edel Anne		Pharmaq AS
Nunes	Alberto		LABOMAR
Naas	Kjell Emil		The Research Council of Norway
Prado	Renata		Innovation Norway IN Rio
Rodger	Hamish		Fish Vet Group

Routledge	Eric	Embrapa
Skjermo	Jorunn	SINTEF Fisheries and Aquaculture
Tiller	Rachel	SINTEF Fiskeri og Havbruk
Toset	Cathrine	GIEK
Tørrisen	Vasco	Norges Sjømatråd
Vigstad	Hege	Utviklingscenteret AS
Wojciechowski	Esteban	FAV
Zamorano	Eugenio	Undersecretariat for fisheries and aquaculture
Zimmermann	Sergio	Zimmermann Aqua Solutions
Aas	Nils Einar	Aker BioMarine AS

5. Seaweed workshop

In addition to the “Aquaculture in Brazil” seminar a Norway – Brazil seaweed workshop was arranged in the morning the same day.

Workshop on macroalgae aquaculture: Synergies between Brazil and Norway

The global cultivation of aquatic plants is around 27 mill tons. While Norway only harvest from wild populations and has no commercial cultivation of macroalgae, Brazil cultivates about 700 tons per year. It is expected an increased need for sustainable macroalgae biomass in near future, suggesting that innovative cultivation methods and technology must be developed. Scientists and industry working with macroalgae cultivation in Brazil and Norway are invited to exchange knowledge and strengthen the synergies between the countries.

Program

09.00-09.05: Welcome - Prof. Kjell Inge Reitan, NTNU

09.05-09.20: The project SUSAAQUA-Project - Research Director Gunvor Øie, SINTEF

09.20-09.50: Macroalgae cultivation and processing in Brazil - Dr. Leila Hayashi, UFSC

09.50-10.10: Seedling production- Researcher Silje Forbord, SINTEF

10.10-10.30: Coffee break

10.30-10.50: Seaweed modelling - Dr. Ole Jacob Broch, SINTEF

10.50-11.10: Integrated Multi-Trophic Aquaculture - Dr. Aleksander Handå, SINTEF

11.10-11.30: Seaweed Energy Solutions - Hatchery manager Kaia Kjølbo Rød, SES

11.30-11.50: Processing of cultivated macroalgae- Prof. Turid Rustad, NTNU

11.50-12.00: Summary and closing - Prof. Kjell Inge Reitan, NTNU

12.00-13.00: Lunch



Registration before August 10th to:
Kjell Inge Reitan (kjell.i.reitan@ntnu.no)
or
Silje Forbord (silje.forbord@sintef.no)

When: August 20th 2015, 9.00-13.00 (incl. lunch)
Place: SINTEF Sealab, Brattørkaia 17C



In this workshop about 20-30 scientists participated.

6. Dissemination

The seminar and the visit has been published in media both in Norway and international News channels

Below are listed several dissemination activities from the seminars:

A summary of the presentation by Bjørn Myrseth, from the seminar, can be found in The Fish Site: <http://www.thefishsite.com/articles/2120/aqua-nor-2015-what-to-think-about-when-setting-up-a-fish-farm-in-a-foreign-country/>

In addition to the seminar the Minister Helder Barbalho, Ministry of Fisheries and Aquaculture, Brazil published a video from the visit in Trøndelag:



90962364bcaa6b25a
0389b8eac675280.m

3. A newsletter from ACE show a picture of Leila Hayashi, Eric Routledge, Rodrigo Carvalho, Alberto Nunes, Jose Guilherme Filho Bersano.

[Publisert på kyst.no 11. september 2015](#)

Internasjonale gjester imponert over norsk havbruk

AquaCulture Engineering (ACE) oppsummerer årets Aqua Nor som spennende og innholdsrikt. Der fikk de vist frem det beste av norsk havbruk og norsk natur under sine omvisninger av blant annet et fullskala forskningsanlegg på sjø, skriver de på sine nettsider.

Enda et AquaNor er over og vel gjennomført. Denne gang med et Trøndelag som viste seg fra sin beste side med temperaturer som minnet mer om sør enn nord Europa. Dette fikk også flere av våre utenlandske besøkende oppleve da de besøkte Frøya og ACE under oppholdet i Trondheim for noen uker siden, skriver AquaCulture Engineering på sine nettsider i dag.



ACE hadde under messedagene mange besøkende som ønsket å se et fullskala forskningsanlegg på sjø. Det var fire delegasjoner med til sammen 30 personer som gjestet lakseanlegget og FoU-fasilitetene på Rataren disse dagene.

Mange fikk også med seg en omvisning på Marine Harvest sitt smoltanlegg i Slørdal, slakteanlegget Innovamar og Aqualine på Frøya. Gjestene satte stor pris på besøkene som ga et godt inntrykk av hvor sammensatt, effektiv og teknologisk havbruksnæringen er, skriver de.

På en av turene hadde vi gleden av å få besøk av den Brasilianske fiskeriministeren, vise-fiskeriministeren og deres følge samt representanter fra Nærings- og fiskeridepartementet og Innovation Norway i Brasil. De var alle svært imponert over det de fikk se. Kvelden ble avsluttet med middag og baccalao i solnedgang på Supen Pøbb på Bogøyvær.

Videre ble ACE gjestet av besøkende fra Indonesia, internasjonale partnere fra SFI Exposed og ytterligere en gruppe fra Brasil med forskere.

- For oss i ACE har dette vært en utrolig spennende og innholdsrik Aqua Nor-uke. Og i tillegg få anledning til å vise

7 Costs

The project from NorLARNet and NFR did cover meeting costs and parts of the travel and hotel cost for:

Laila Hayashi

Eric Routledge

Alberto Nunes

Rodrigo Calharvo

Jose Guilherme Filho Bersano



Technology for a better society

www.sintef.no