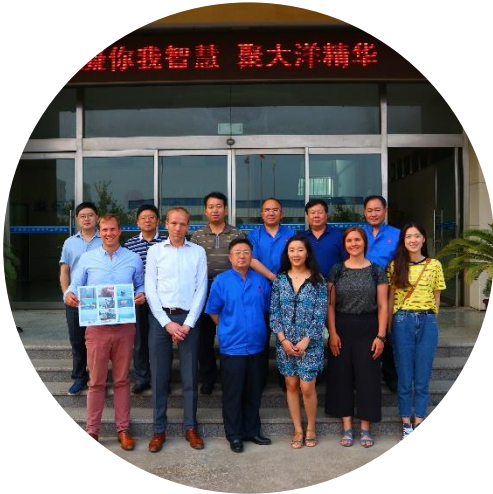


# Prospects for cooperation between Dutch and Chinese seaweed sector

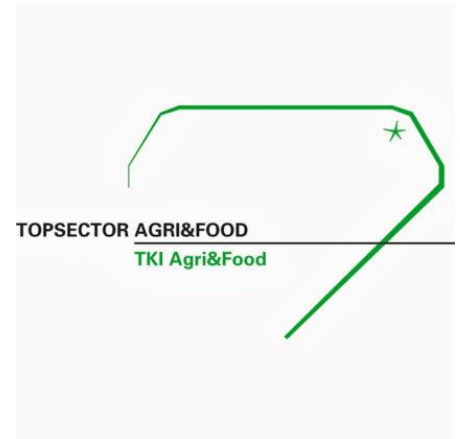
December 12, 2019

*Sander van den Burg, Maggie Skirtun, Miriam Bernard & Koen van Swam*



# Objective of the project

- Seed Money Project funded by Topsector Agri&Food
- Identify challenges and opportunities for cooperation, and areas for positive joint Dutch-Sino business ventures
- Methods
  - Stakeholder consultation in NL (May 2019)
  - Visit to China (July 2019)
  - Present results to NL sector (October 2019)

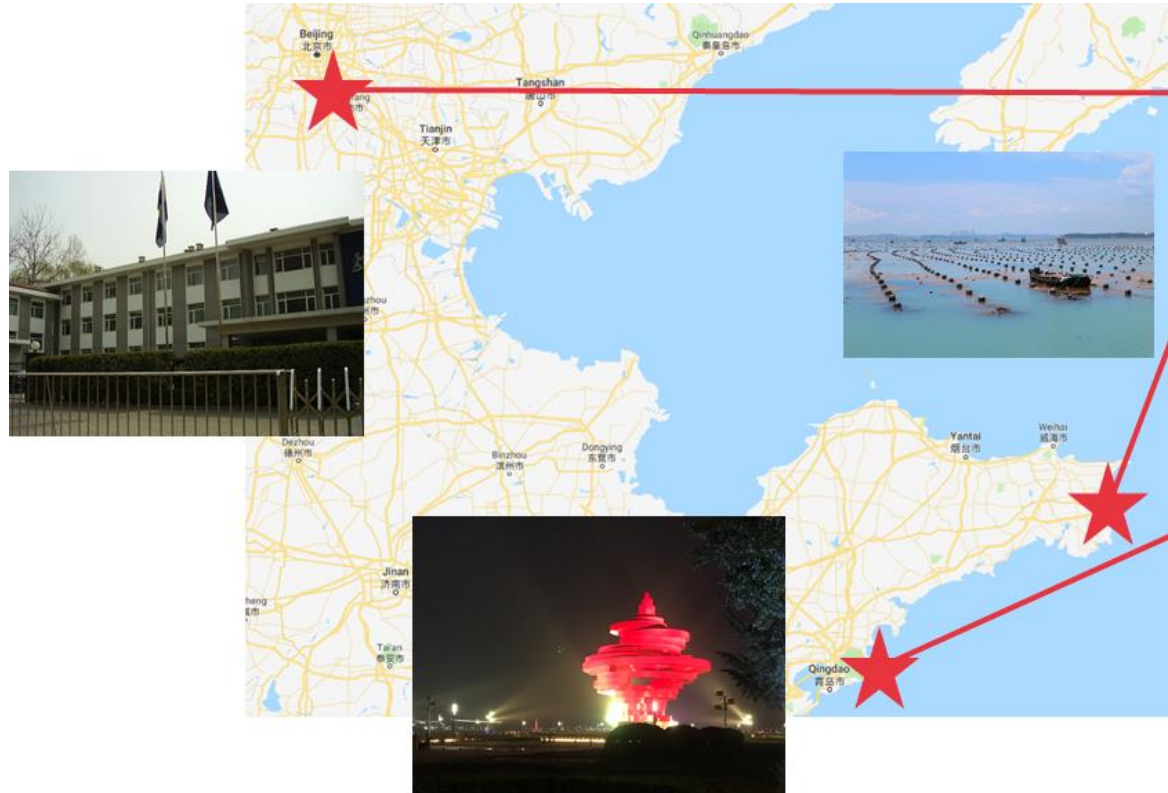


# Key opportunities for collaboration from the Dutch perspective

- Opinions gathered by phone interviews and a workshop session
- Main interests of the Dutch seaweed sector:
  - Seaweed products and applications
  - Seaweed processing
  - Breeding
- Future collaboration desired in form of knowledge exchange and trade



# Locations and visits



## Beijing:

1. NL Embassy


## Rongcheng:

1. Lidao Town government
2. Haizhibao cultivation branch
3. Haizhibao processing branch
4. RongCheng Jingyi Marine Technology
5. Century Biocom – *pilot site*
6. Lidao Ocean Technology hatchery branch
7. Luen Thai – *building site*

## Qingdao:

1. Bright Moon Seaweed Group
2. JuDaYang Greater Gather Ocean
3. Yellow Sea Fisheries Research Institute
4. Qingdao NL Business Support Office
5. Ocean University China

# Seaweed cultivation in China

- 
- To provide sufficient food for a growing population
  - Large scale production with high density yields  $\sim 40\text{kg/m}$ , tendency to go further offshore
  - Labour from immigrants from country-side, aging workforce
  - Production is low-tech



# Producing spores

A large industrial facility, likely a mushroom cultivation farm, with a green translucent roof and rows of white-covered trays. The structure is supported by a complex metal framework. The trays are arranged in long, parallel rows, extending into the distance. The lighting is dim, with light coming from the translucent roof and windows along the sides.

- Use of natural resources – wild seeds, sea water etc.
- Interactions with the natural environment

# Seaweed processing





# Food innovation



# High value products

The seaweed is plant nutrition porter between the land and th  
rich in seaweed active ing  
fucoxanthin, polyphenol, trace  
value, but also plant's stress enhanc  
increase, crops yield and quality  
fertilizer is good for soil and  
protections for Ch



## 海藻酸盐医



- Active research and medical advancement (e.g. use in heart tissue growth)
- Collaboration with German universities, JVs in Austria
- Large number of patents, >120 patents



# Cooperation with research institutes



# Challenges for the Chinese sector

- Density of production (moving offshore to minimise competition of nutrients, need seed improvements for different environments)
- Recognize there is a need for further mechanisation / automation
- Bringing Chinese products to the European market, not directly selling their products but:
  - Produce products according to required specifications
  - Non-branded final products for own branding
  - Semi-fabricates, to be processed into final product
- Insight into consumer acceptance and standardisation in EU is lacking

# European producers

- Small scale
- Explore high value applications
- Close connection to research
- High level of cooperation

# Are China and Europe really two distinct worlds?

## Differences

Scale of production and processing  
(a lot of vertical integration within value chain)

Labour intensity

Less regulation, particularly for breeding

Perception of the product by European consumer

## Similarities

Need for mechanization  
(reduce manual labour)

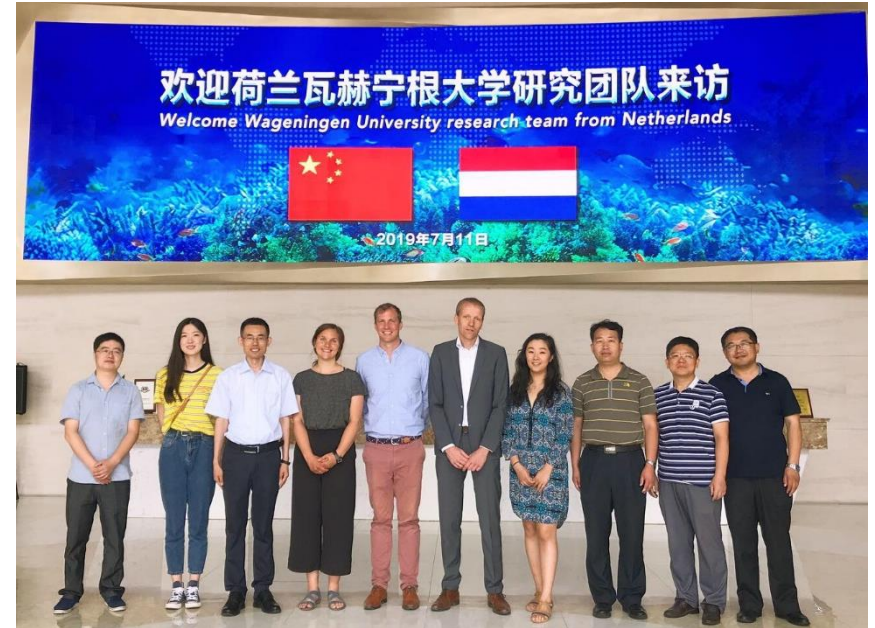
Development of new high value applications

Cooperation with research institutes

# Three ways to move forward

1. Trade with Chinese companies
2. Jointly develop mechanisation (of harvesting, seeding)
3. Joint research

*IP issues as a major concern among Dutch companies*



# 1. Trade with Chinese companies

- Distribute products from China: samples of products available
- What products are of interest for Dutch companies?
- Expression of interested from JuDaYang in importing seaweed from NL, samples of *Fucus* and *Ascophyllum* requested
- Processing and re-exports





## 2. Jointly develop mechanisation

- Shared interest in harvesting and seed breeding
- Dutch harvesting technologies are of interest
- Assistance offered in developing processing techniques for higher valued fresh products
- Co-investments (e.g. JVs), technology transfer from China



# 3. Joint research

- Make use of experience and knowledge in China - good research institutes and universities in China
- Collaboration between universities already taking place (not focused on seaweed)
- What are the shared research interests – with applications for business? E.g. develop a PPS proposal
- Chinese govt. encourages joint projects between China and Europe – there's a list of funding available each year for research
- Options: exchange students, project-based work, symposia etc.

# Concerns over IP issues

IPKey | CHINA

CHINA LATIN AMERICA SOUTH-EAST ASIA English

NEWS ACTIVITIES PARTNERS IP TOOLS IP RESOURCES ABOUT IP KEY MEDIA

CHINA

IP Key China is directed by the European Commission and implemented by the European Union Intellectual Property Office (EUIPO).

- ✓ IP Key China aims to support and facilitate market access to international firms and innovators, especially taking into account concerns expressed by European businesses.
- ✓ To ensure market access the European Union works cooperatively with the Chinese authorities to increase transparency and improve the implementation of the intellectual property and IP enforcement system.
- ✓ IP Key China also supports the EU-China IP Dialogue Mechanism and works to raise awareness on the importance of IP in the region.

See more: [YouTube](#) [youku](#) 优酷

31 October 2019



# Next steps

- Involved Ocean University in project proposal
- Exchange of students

But also:

- Opportunities for joint proposals with Dutch and Chinese seaweed sectors
- Which programs are suitable?



# Thank you!

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