

## Stakeholder Survey

# “Recirculation Aquaculture Systems – Positions of the Organic Food Sector”

- RAS: an Issue for Organic
- The Survey
- The Law, the Natural Sciences, and the Philosophy
- The Stakeholders' Views
- Discussion:  
**Ways towards a Win-Win?**



# [www.naturland.de](http://www.naturland.de)



- Association for organic farming
- Founded in 1982
- One of the largest international organic associations
- Diverse areas of activity:
  - agriculture
  - processing
  - forestry
  - **aquaculture**
  - textiles
  - cosmetics
  - fair partnerships
  - **capture fishery**



**www.bluesensus.com**

bluesensus sustainability & seafood consulting is specialized in the organic and sustainable seafood business - aquaculture and fisheries.

**bluesensus**

sustainability & seafood consulting

The company was established by founder Udo Censkowsky in 2015.

Consulting services are

- Seafood Sustainability Check
- Project Management (AIP/FIP)
- Market Insight
- Business Development
- Impact Assessment (EIA/SIA)
- Biodiversity projects

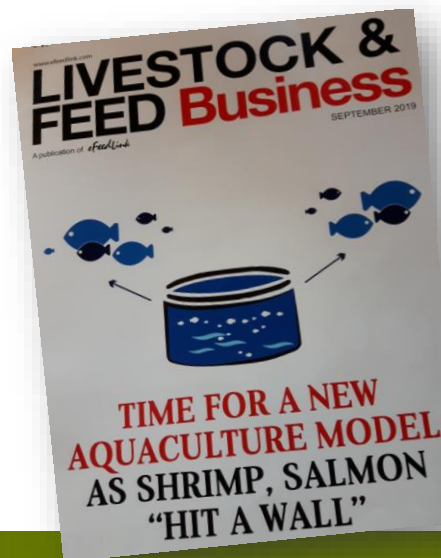


# RAS – an Issue for Organic



- ❖ RAS startups considering themselves as very sustainable and „natural candidates“ for organic certification, seeking ways **to communicate this** to the public
- ❖ Options to compensate elevated production costs in RAS through **the organic market**, well sensitised for sustainability attributes
- ❖ The EU Organic Regulation currently not permitting RAS, but signalling interest to revise this position **according to future findings**

*“[...] Due to the principle that organic production should be as close as possible to nature the use of such systems **should not be allowed for organic production until further knowledge is available.** [...]”*
- ❖ The **general direction of aquaculture development**, particularly in Europe (e.g. NASDAQ)



**Having failed to transcend tight natural resource limitations, shrimp and salmon are preparing to make massive investments in recirculating aquaculture systems .**

# The EU Organic Regulation as Starting Point of the Survey



## EU Organic Regulation:

*“Recent technical development has led to increasing use of closed recirculation systems for aquaculture production, such systems depend on external input and high energy but **permit reduction of waste discharges and prevention of escapes.***

*Due to the principle that **organic production should be as close as possible to nature** the use of such systems should not be allowed for organic production until further knowledge is available.”*

## The Objectives

Our stakeholder survey aimed to clarify

- ❖ RAS' conflict with the principle of „**close to nature**“ farming,
- ❖ the possible compensation of RAS' minus in “naturalness” by a plus in “**public goods**”
- ❖ favored future scenarios (e.g. inclusion of RAS into organic regulation, private standard without reference to “organic”, rejection...).

## The Team

- ❖ GMA Marine Aquakultur mbH
- ❖ International Center for Ethics in the Sciences and Humanities (IZEW), University Tübingen
- ❖ Seafood Advisory GmbH
- ❖ bluesensus
- ❖ Naturland

## The Project

Full report at:  
<http://orgprints.org/32165/>

Projektnummer: 2815OE026

Gefördert durch:



Bundesministerium  
für Ernährung  
und Landwirtschaft

BÖLN

Bundesprogramm Ökologischer Landbau  
und andere Formen nachhaltiger  
Landwirtschaft

aufgrund eines Beschlusses  
des Deutschen Bundestages

# Some Key Conclusions from the Natural Sciences:



## Regarding fish welfare (mortalities, diseases) in RAS versus other aquaculture systems

- ❖ Mortalities of hatchlings are, obviously, **in nature** far higher than in the controlled RAS environment. The same (but lack of data) might apply to **very extensive** aquaculture systems.
- ❖ Incidents of bacterial diseases of trout in pond farms and in RAS are, however, comparable.
- ❖ Technopathies are mostly density-, not system-dependant.
- ❖ Even if RAS theoretically offer the possibility of a „total control“ of any pathogens, this is hard to transfer into management reality (e.g. because of all fish living in the same volume of water, economic pressure, lack of trained personell).

## Regarding RAS ecological footprint

- ❖ Pro's in RAS: No escapees, no problems with predators, no transformation of valuable ecosystems, control of effluents, no impact on natural bodies of water, less energy consumption due to shorter distances to markets (reduction of carbon emission)
- ❖ Con's: Higher energy consumption due to construction, heating and filtering (increase of carbon emission)

## Unsolved issues in RAS and other aquaculture systems

- ❖ Feed (marine ingredients as a limited resource and agricultural ingredients as the major source of aquaculture carbon emissions)

**>>> RAS and other (also organic) aquaculture share important issues with fish welfare. There are clear benefits of RAS, and there are clear benefits of the organic concept.**

# Key Conclusions from the Human Sciences:



- ❖ Consumers may accept the fact that there are **possible conflicts between „close to nature“ and „sustainable“** that cannot be solved completely, thus considering RAS a potential solution.
- ❖ A recent poll („Ökobarometer“) showed **“animal husbandry conditions“** to be the most important motive for organic purchase decision, closely followed by **“regionality“** and **“sustainability“**, both significantly more important than **“food additives and noxious residues“**.
- ❖ Since regionality is so important to consumers, a concept of an „organic RAS“ should - given it is seriously aiming towards a maximum of „naturalness“ and general sustainability - be **linked to the various ongoing regionality discourses**.
- ❖ Remarkably, the current EU Organic Regulation stays rather vague regarding its own central normative criterion of „naturalness“. This holds particularly true since aquaculture is always „artificial“ compared to capture fishery. The wording „as close as possible to nature“, however, permits to further elaborate on the **level** of „close to nature“ and on the question which level is considered sufficient.

# EU regulation for organic aquaculture



## RAS systems stay banned beyond 2021

- RAS Systems banned for grow out purposes in organic aquaculture
- But permitted for hatcheries, nurseries and organic feed organisms used for organic aquafeed (e.g. algae/micro-algae)

## REGULATIONS

**REGULATION (EU) 2018/848 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**of 30 May 2018**

**on organic production and labelling of organic products and repealing Council Regulation (EC)  
No 834/2007**

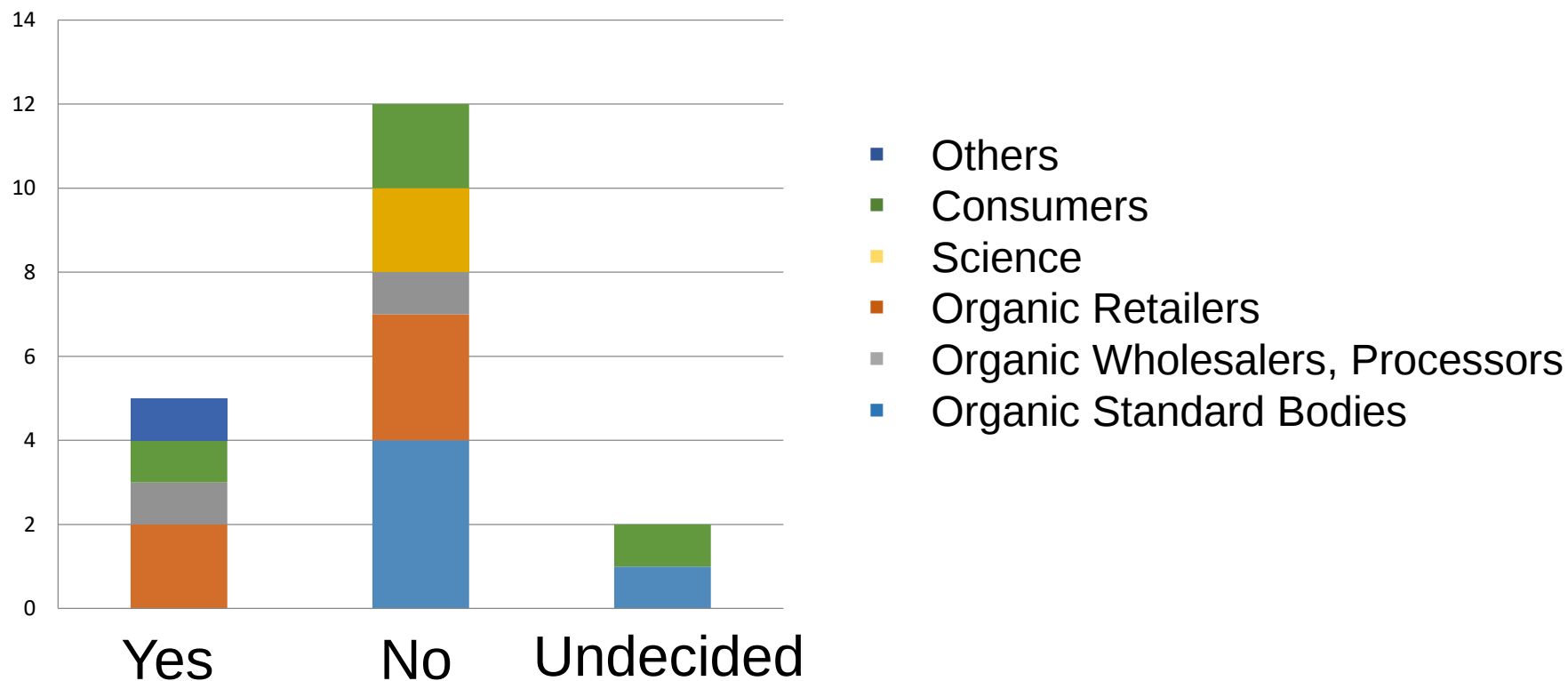
3.1.5. Housing and husbandry practices

3.1.5.1. Closed **recirculation** aquaculture animal production facilities shall be prohibited, with the exception of hatcheries and nurseries or facilities for the production of species used for organic feed organisms.

# Interviews with key organic stakeholders



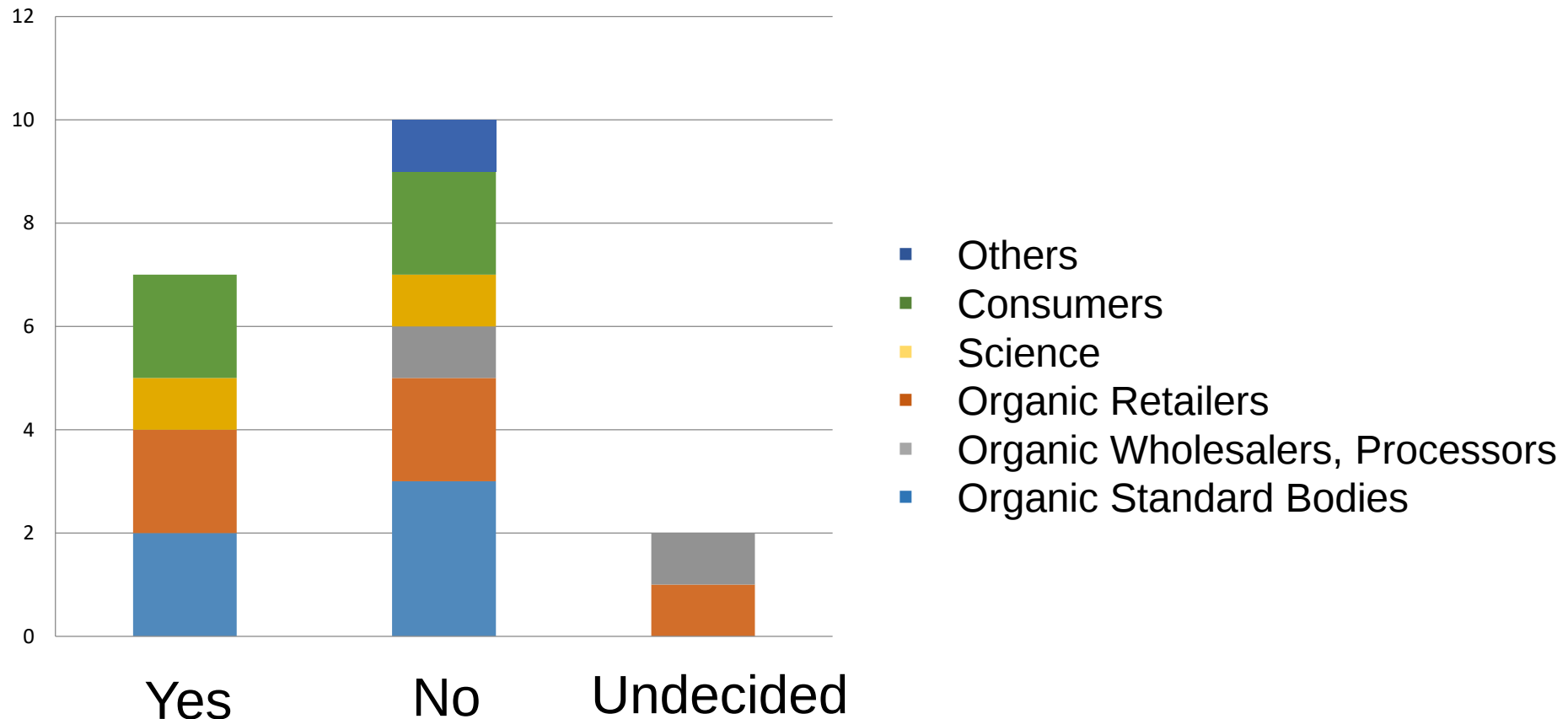
**Do you think RAS systems should be certifiable for organic food production?**



# Interviews with key organic stakeholders



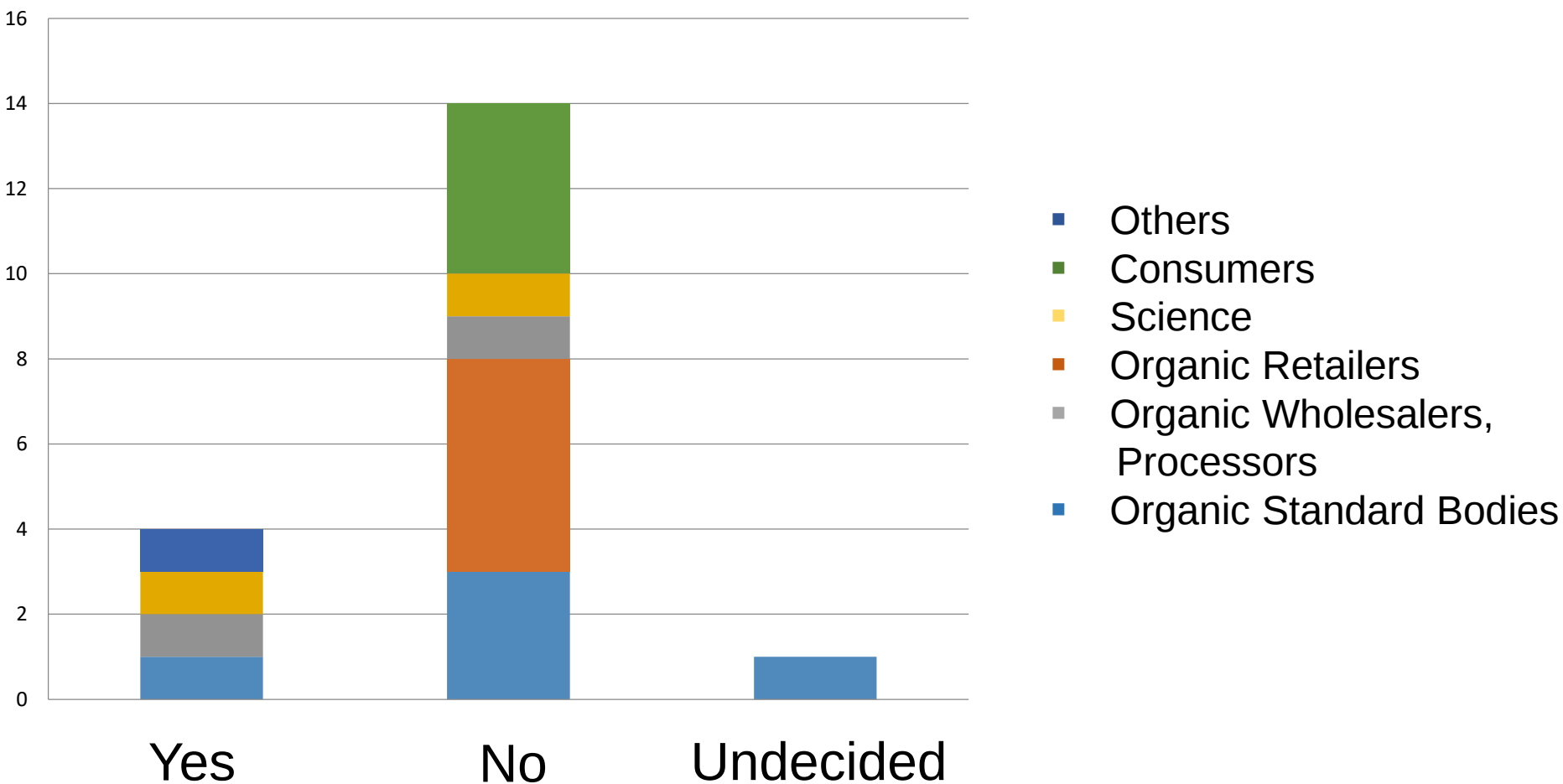
Do you see a difference between **aquaponic production** (e.g. fish & tomatoes) and aquaculture (only fish and/or crustacean) in RAS systems?



# Interviews with key organic stakeholders



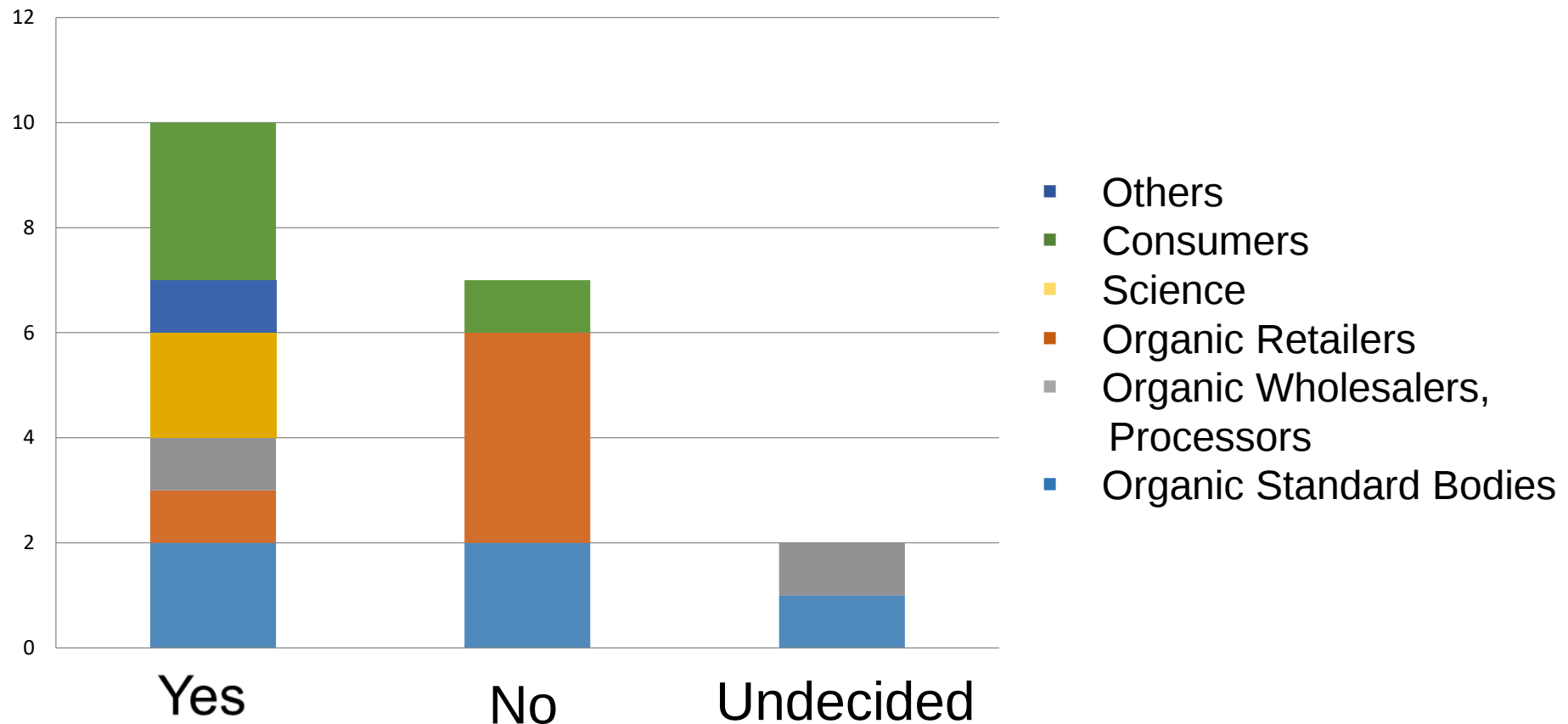
Do you see a difference between producing invertebrates ( shrimp) and/or vertebrates (e.g. fish) in RAS systems?



# Interviews with key organic stakeholders



Would you accept missing “close to nature” conditions, if other aspects of fish production in RAS are better compared to organic aquaculture operations?



# Interviews with key organic stakeholders



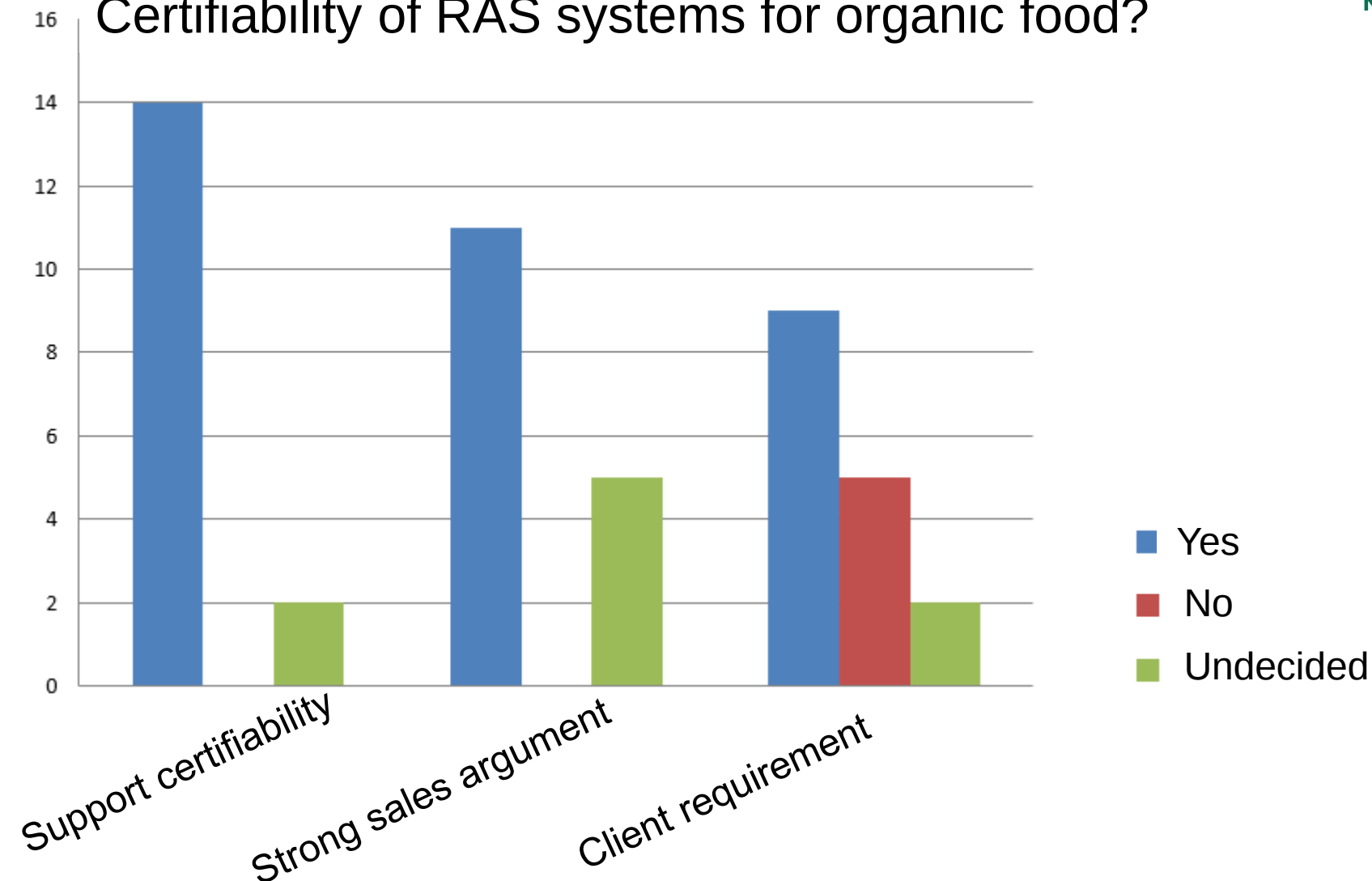
## Key Findings

- RAS systems had no realistic perspective to get approval by a majority of relevant organic stakeholders in the year 2017 (focus of the survey: German speaking countries).
- Deciders in stakeholder organisations have a limited information level on aquaculture; **decision making aids** are missing for example to compensate missing „close to nature conditions“;
- Technical progress and/or innovations have a limited scope in organic aquaculture currently (e.g. example of liquid oxygen in split pond aquaculture) → risk of marginalization of the organic aquaculture sector.

# Interviews with RAS operators



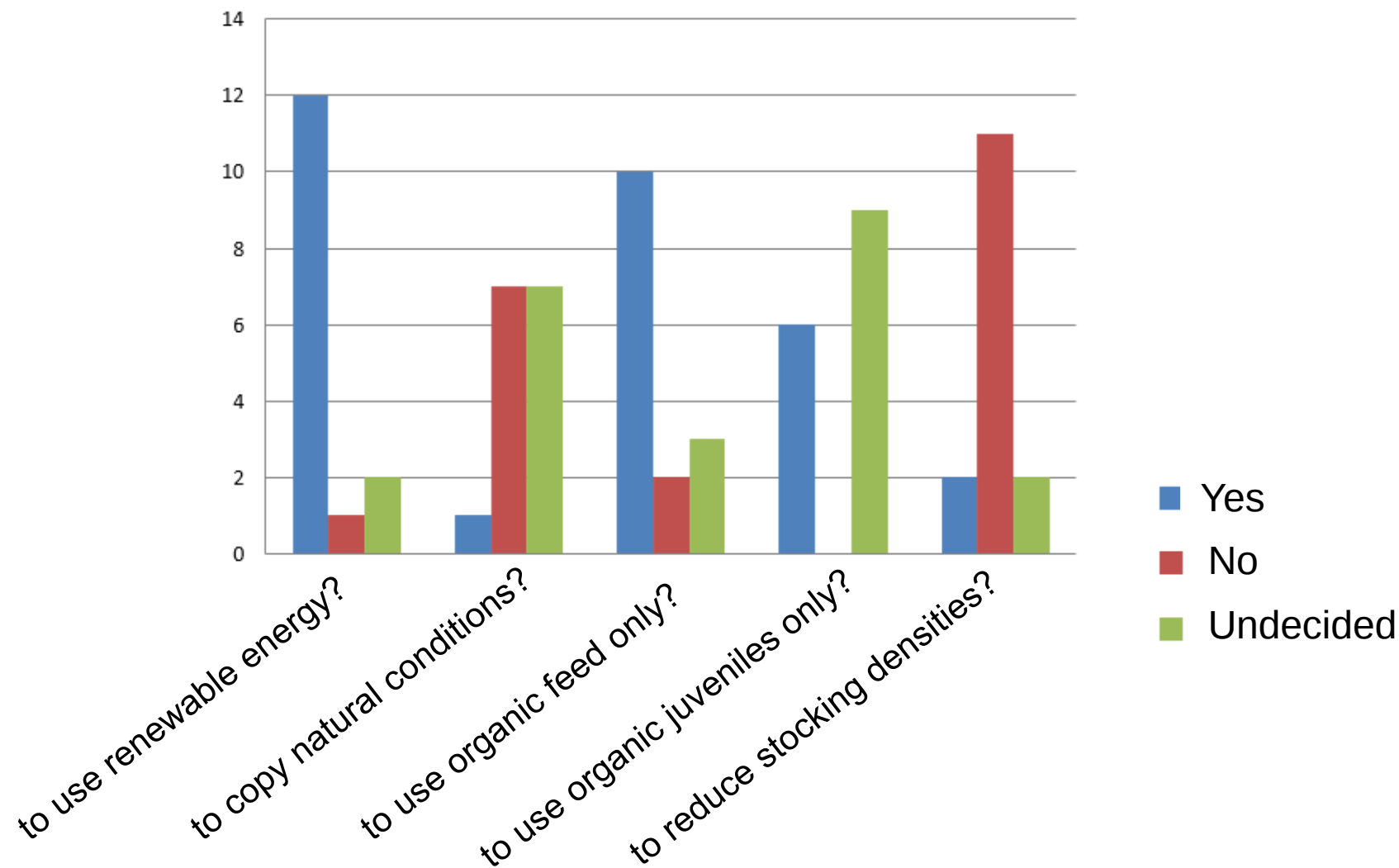
## Certifiability of RAS systems for organic food?



# Interviews with RAS operators



Is it economically feasible for you to.....



# Future Scenarios RAS/Organic

## Are there Ways towards a Win-Win?



- ❖ **Private-law-based RAS standards**, following organic concepts, possibly also addressing additional aspects (e.g. energy balances, water efficiency) but – for legal reasons – avoiding the terms “organic” or “bio”
- ❖ **Alternatives to a formal certification**, e.g. in the format of a trust-building “transparency initiative” where participating RAS companies apply a standardized benchmarking tool showing why their RAS operation is socially and environmentally preferable.
- ❖ On the mid-run, **RAS might become included into the EU Organic Regulation**, but such a development would most likely have to be prepared and motivated through the a.m. initiatives.



Thank you very  
much for your  
kind attention!