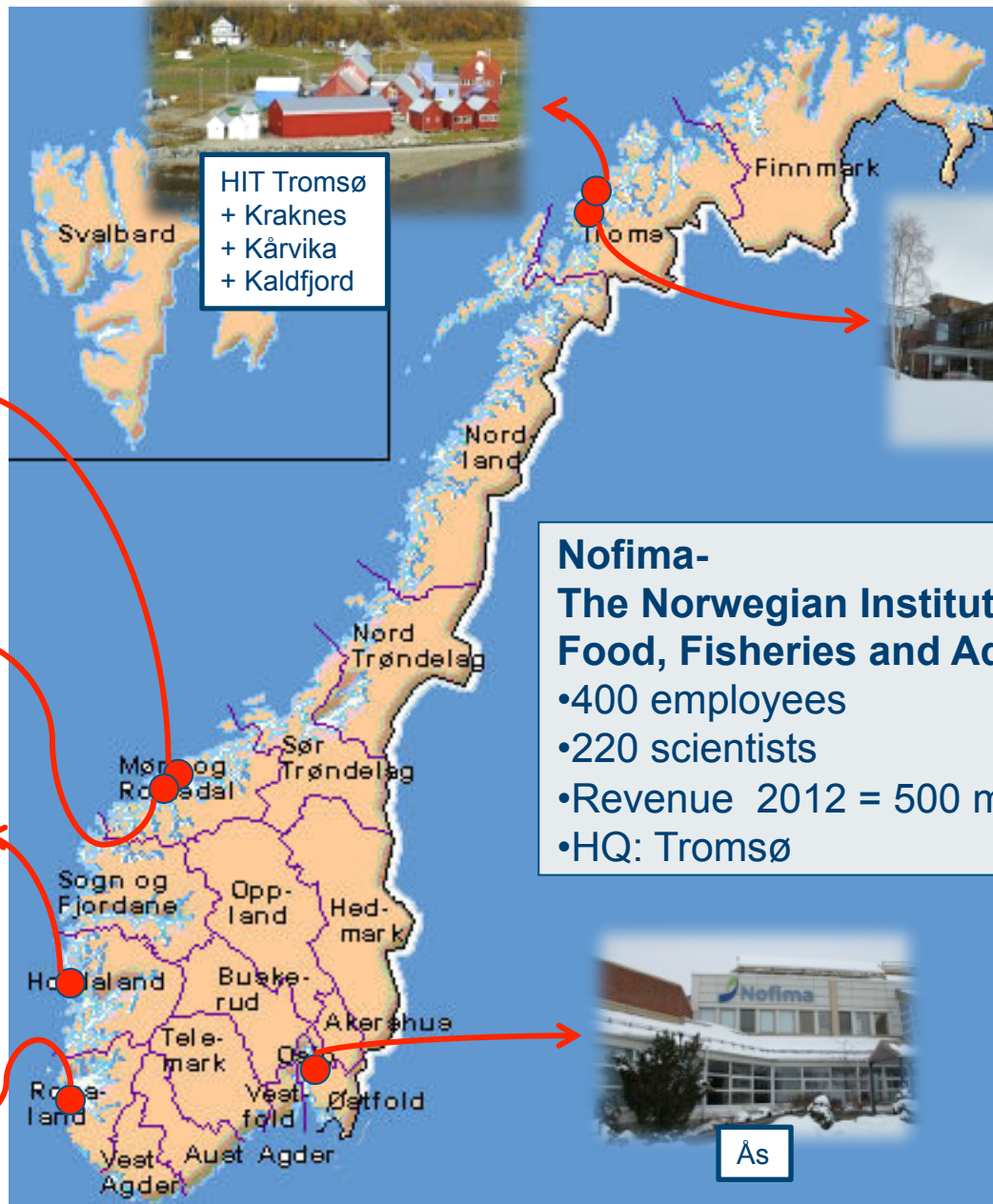


K.M.Karlsen, O.Andreassen, B.Dreyer, Ø.Fylling-Jensen

Identification of Challenges and Improvement for Sustainable Seafood Supply in Europe (iSea)



HIT Tromsø
+ Kraknes
+ Kårvika
+ Kaldfjord

Tromsø
HQ

Nofima-
The Norwegian Institute of
Food, Fisheries and Aquaculture Research

- 400 employees
- 220 scientists
- Revenue 2012 = 500 mNOK (€ 67,2 M)
- HQ: Tromsø

As

Averøy

Sunndalsøra

Bergen
- Kjerreidviken
- Titlestad

Stavanger



Research Areas

Aquaculture Division

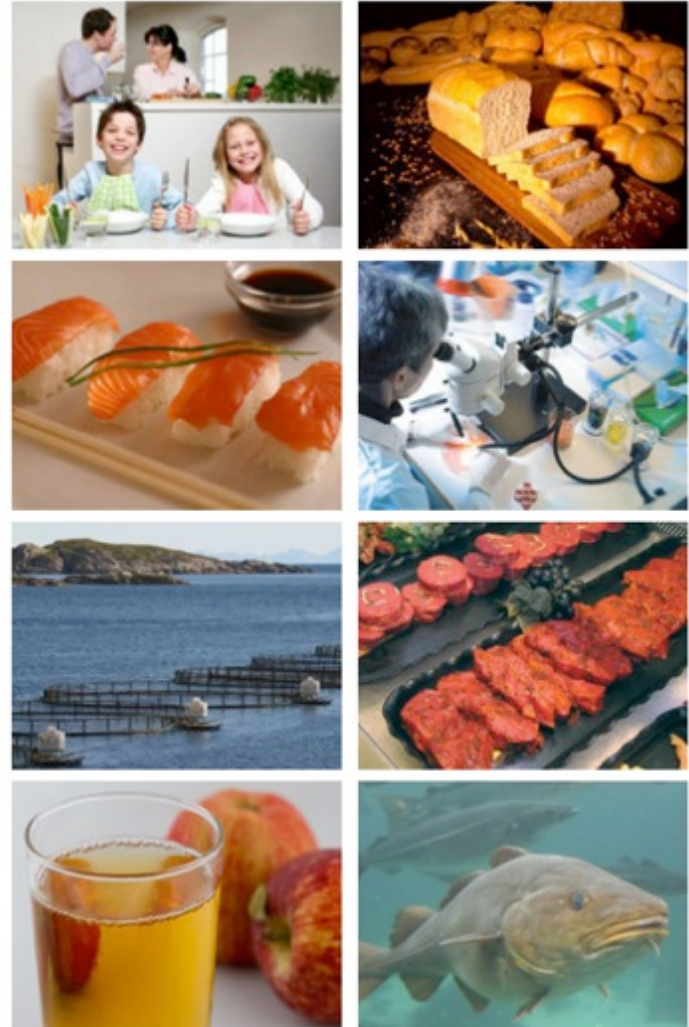
- Breeding and genetics
- Fish nutrition and feed technology
- Fish health
- Production biology
- BioLab

Fisheries, Industry and Market Division

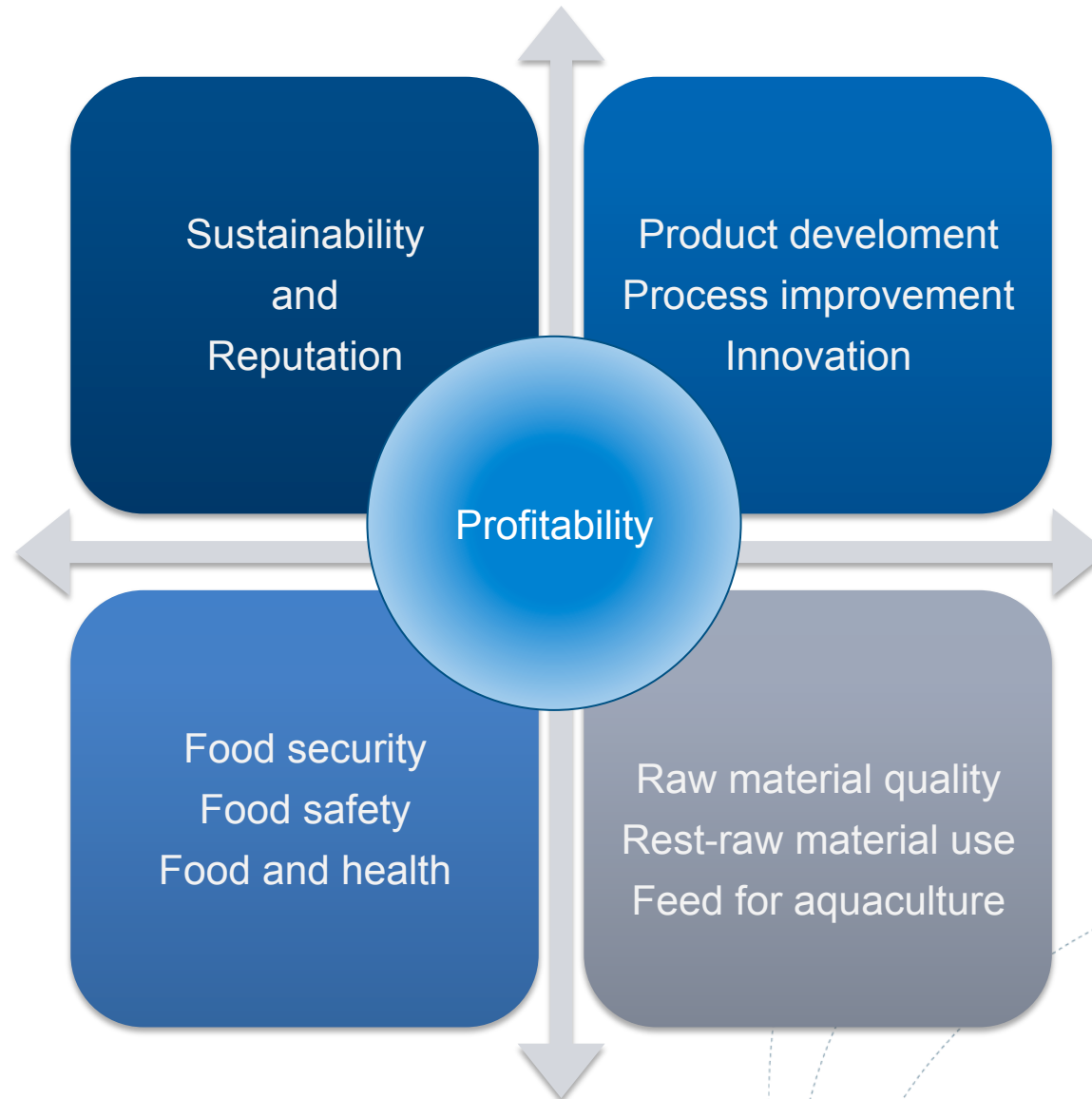
- Consumer and markets
- Industry and corporate development
- Seafood industry
- Processing Technology
- Marine biotechnology

Food Science Division

- Food and health
- Raw materials and processing
- Sensory and consumer science, innovation
- Food safety and preservation



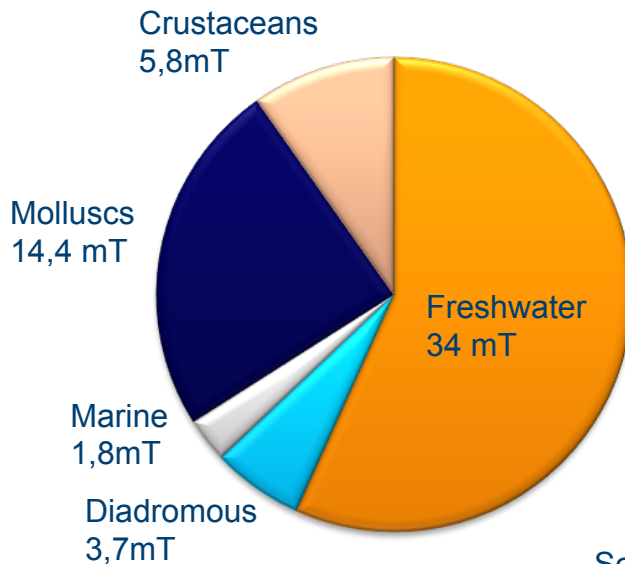
Research Objectives of the Norwegian Food, Fisheries and Aquaculture Industry



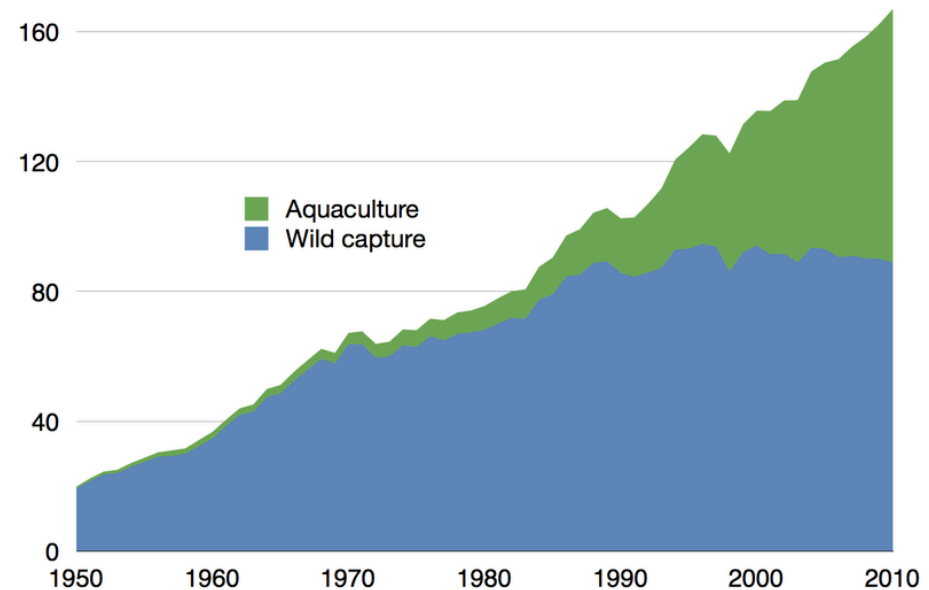
World review of fisheries and aquaculture 2010

Volume: 148 million tonnes – Value: 218 billion US\$

	Million tons	% change from 2006
TOT. CAPTURE	88	-1,5 %
TOT. AQUACULTURE	60	25 %
TOT WORLD FISHERIES	148	8 %
HUMAN CONSUMPTION	128	12 %
NON FOOD USES	20	-12%
PER CAPITA FOOD SUPPLY	18.6 kg	7 %



Source: FAO, 2012



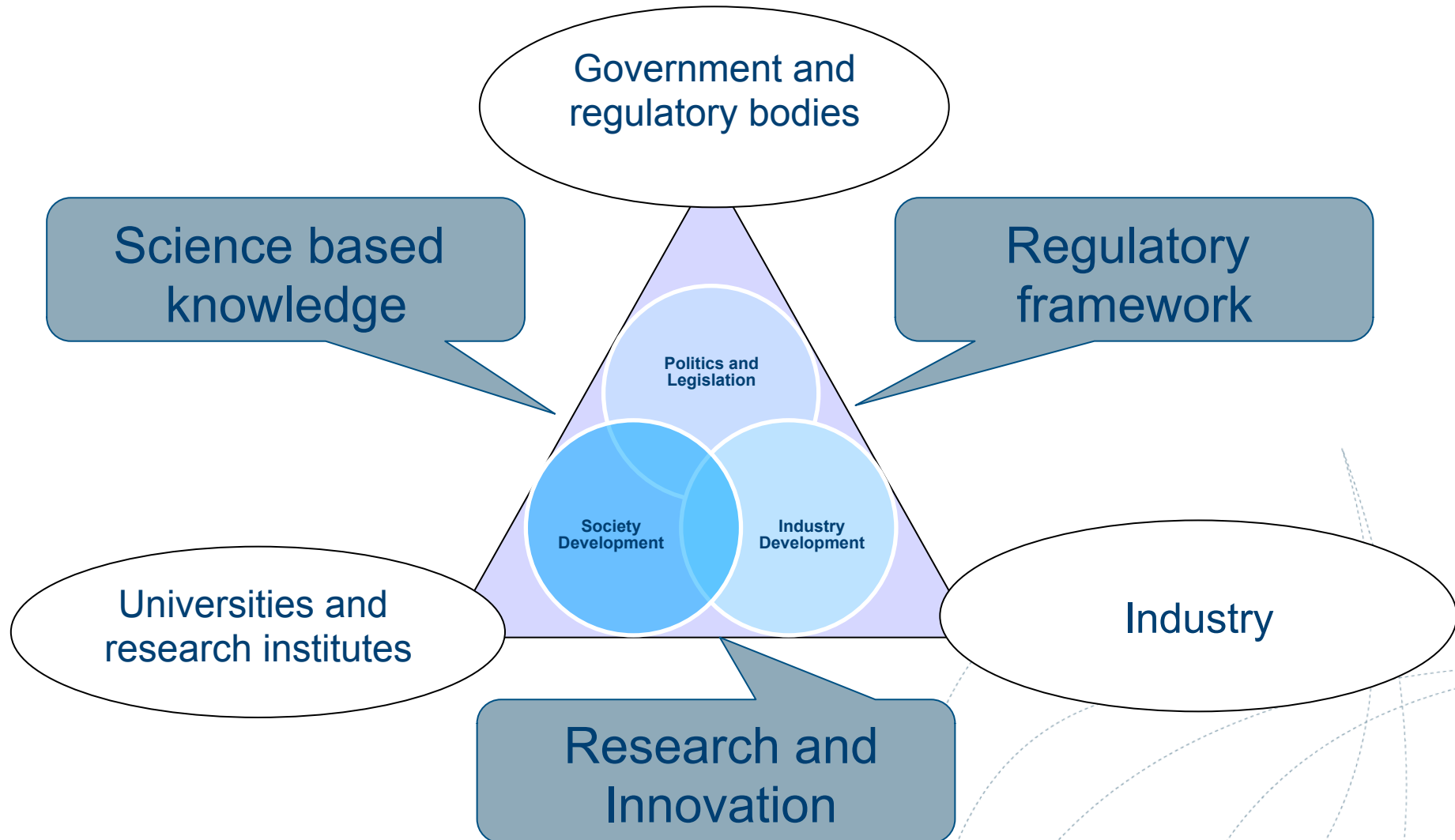
Sustainable development

“...development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

Brundtland Commissions, 1987



Sustainability must be viewed in a wide perspective, involving several disciplines

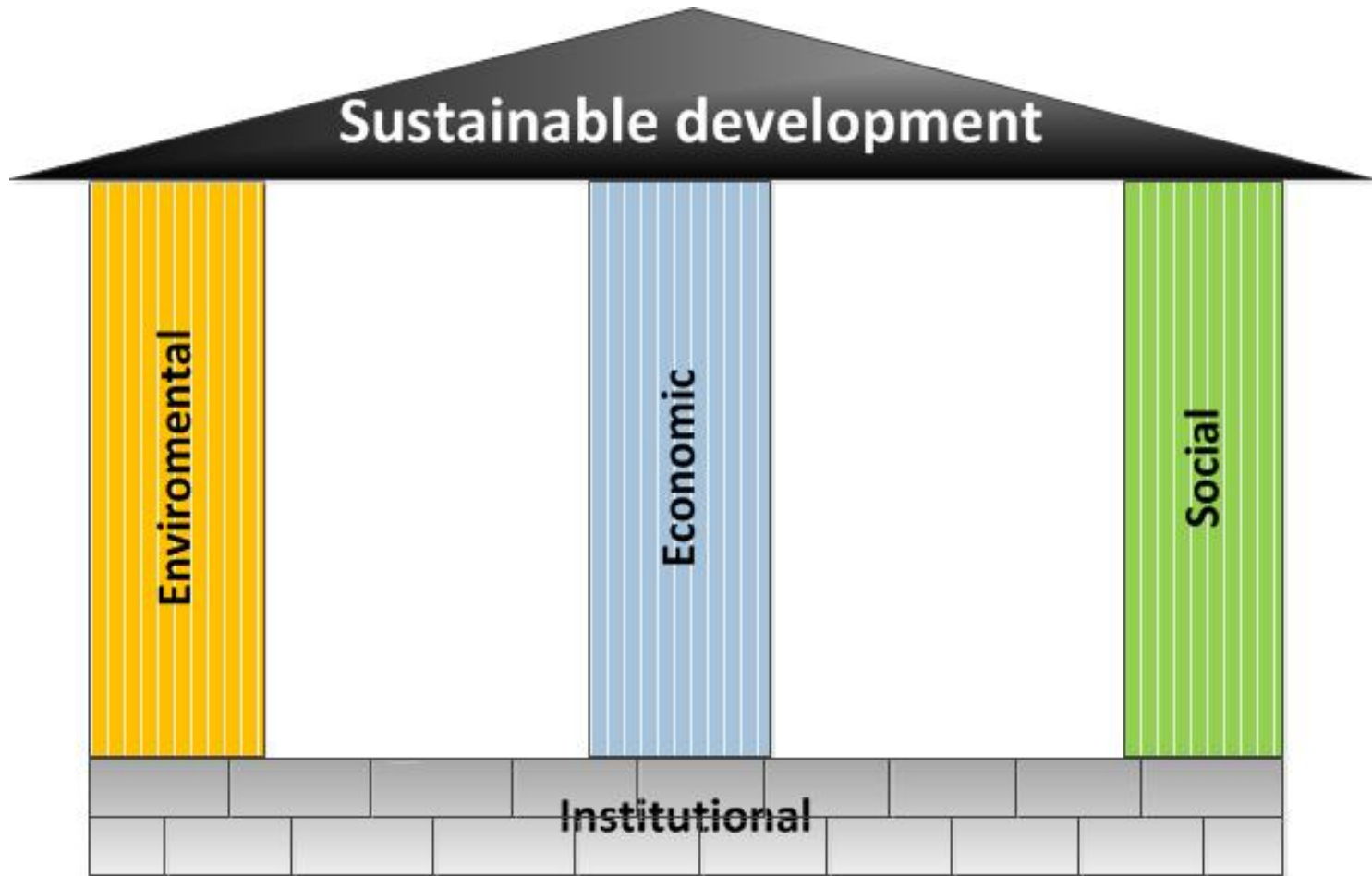


Four perspectives

Perspective	Description
Environmental	Maintenance of the functions of the ecosystem and evolution
Economic	Economic development in harmony with the nature
Social	Social cohesion, just treatment, justification and solidarity between people
Institutional (governance)	Safeguarding the environment, realizing justification between people (income, wealth and poverty), securing participation

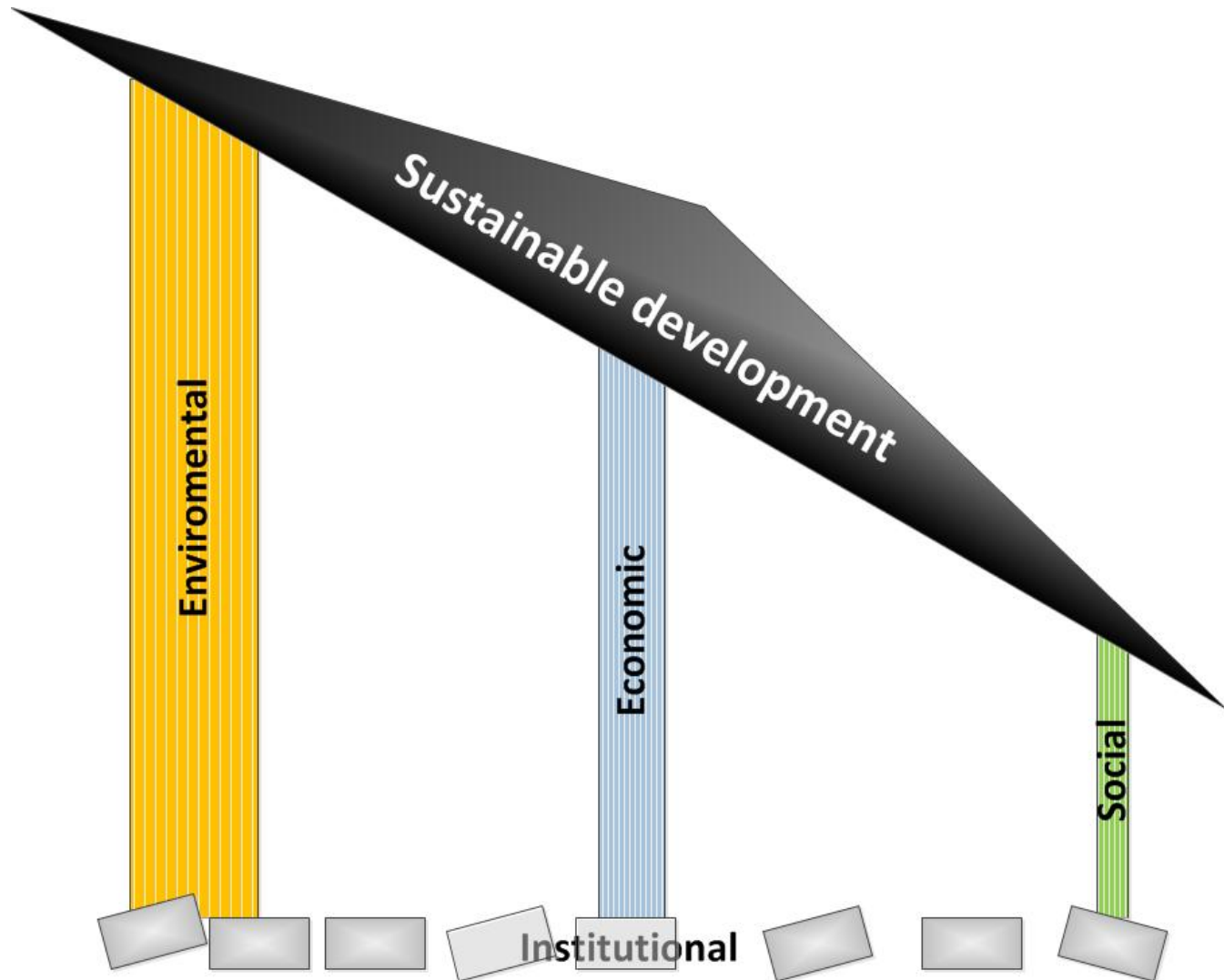
(Omann, 2004)

Different perspectives

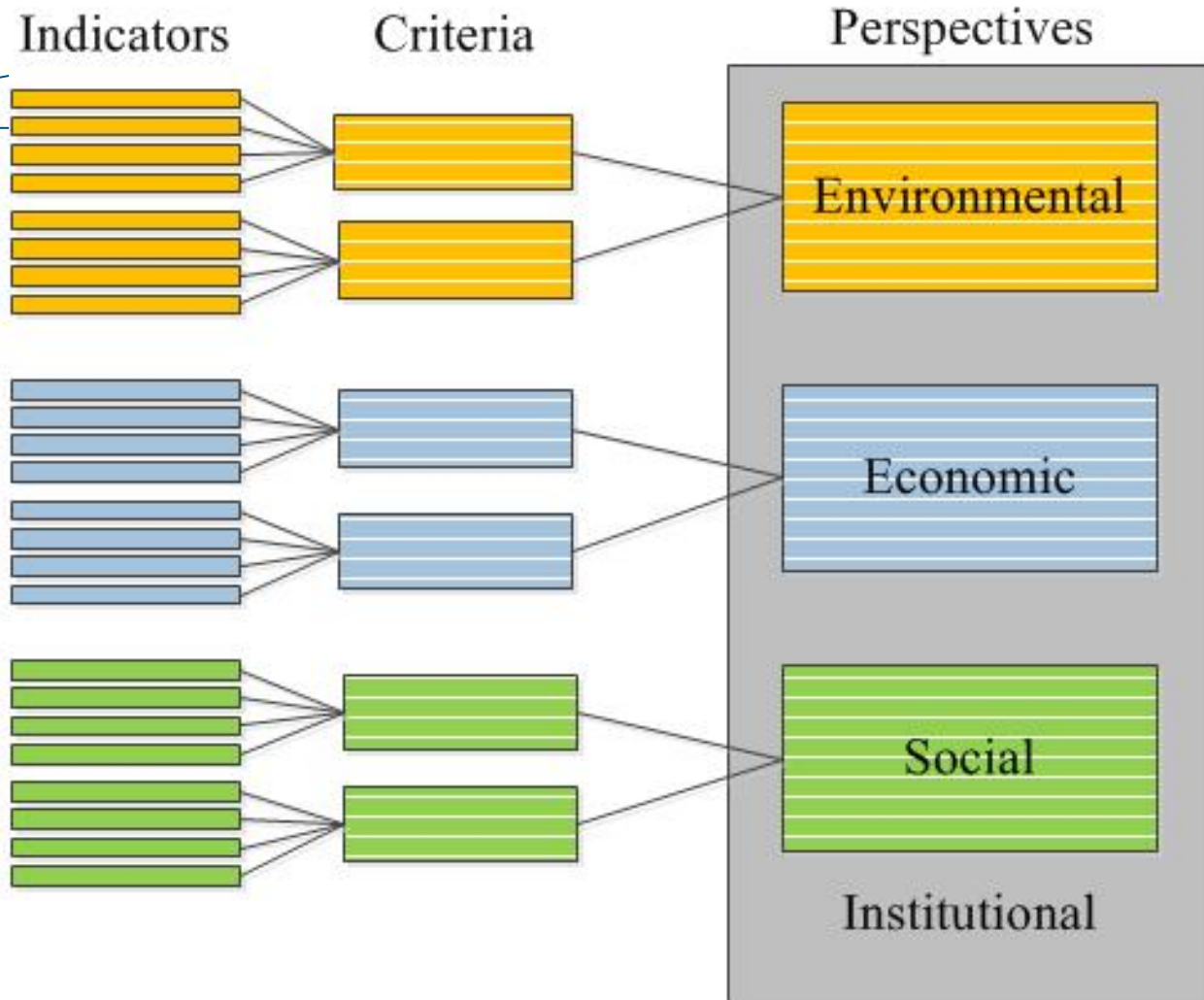


Modified from Heijungs et. al 2010

Unbalanced and weak construction



What is the problem?



Wild capture fisheries

Relevant contextual indicators

- Management of wild fish stocks
- Over-capacity in the fishing fleet
- Energy consumption
- Fuel consumption related to the harvesting operation
- Conflict of interest

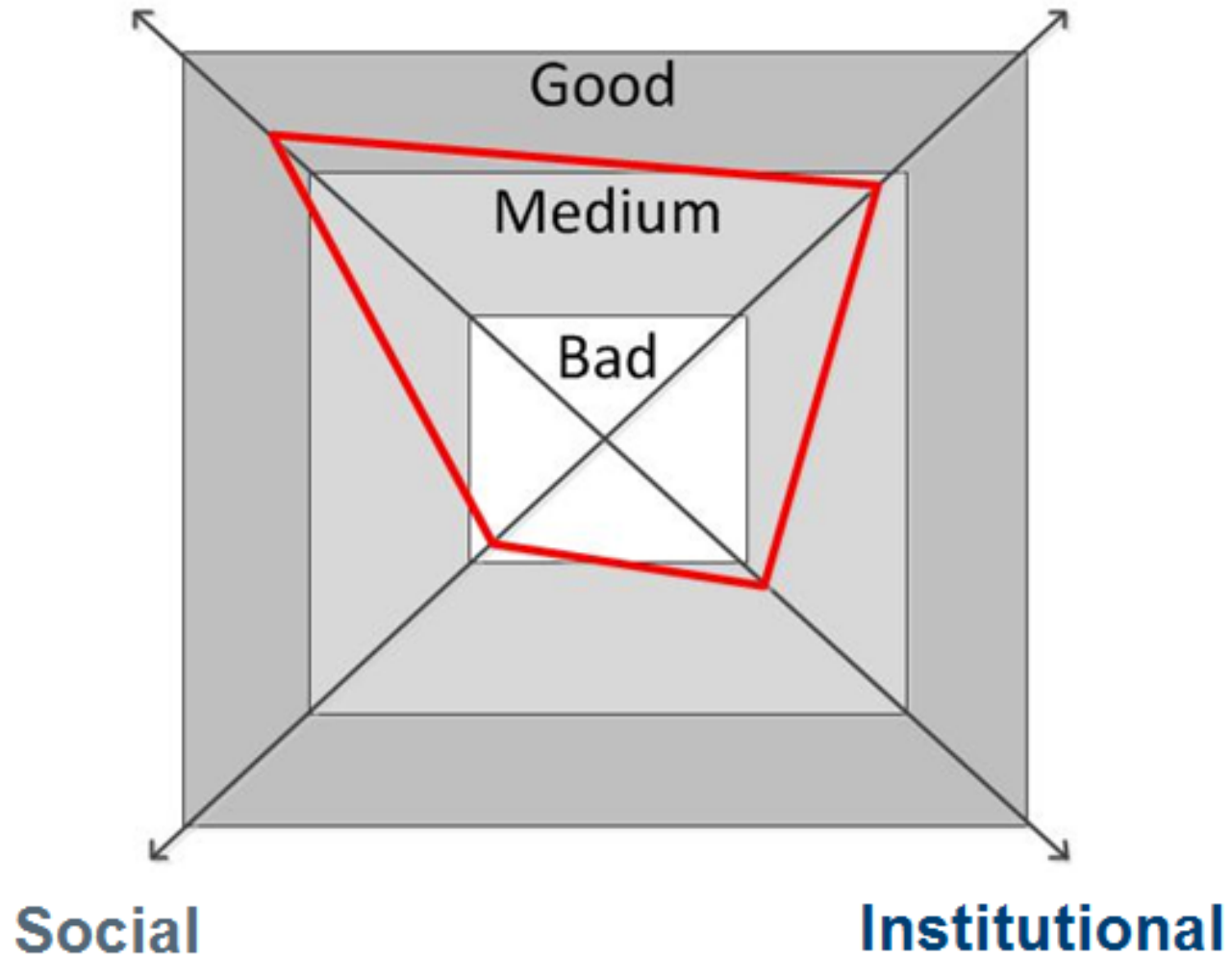
Salmon farming

Relevant contextual indicators

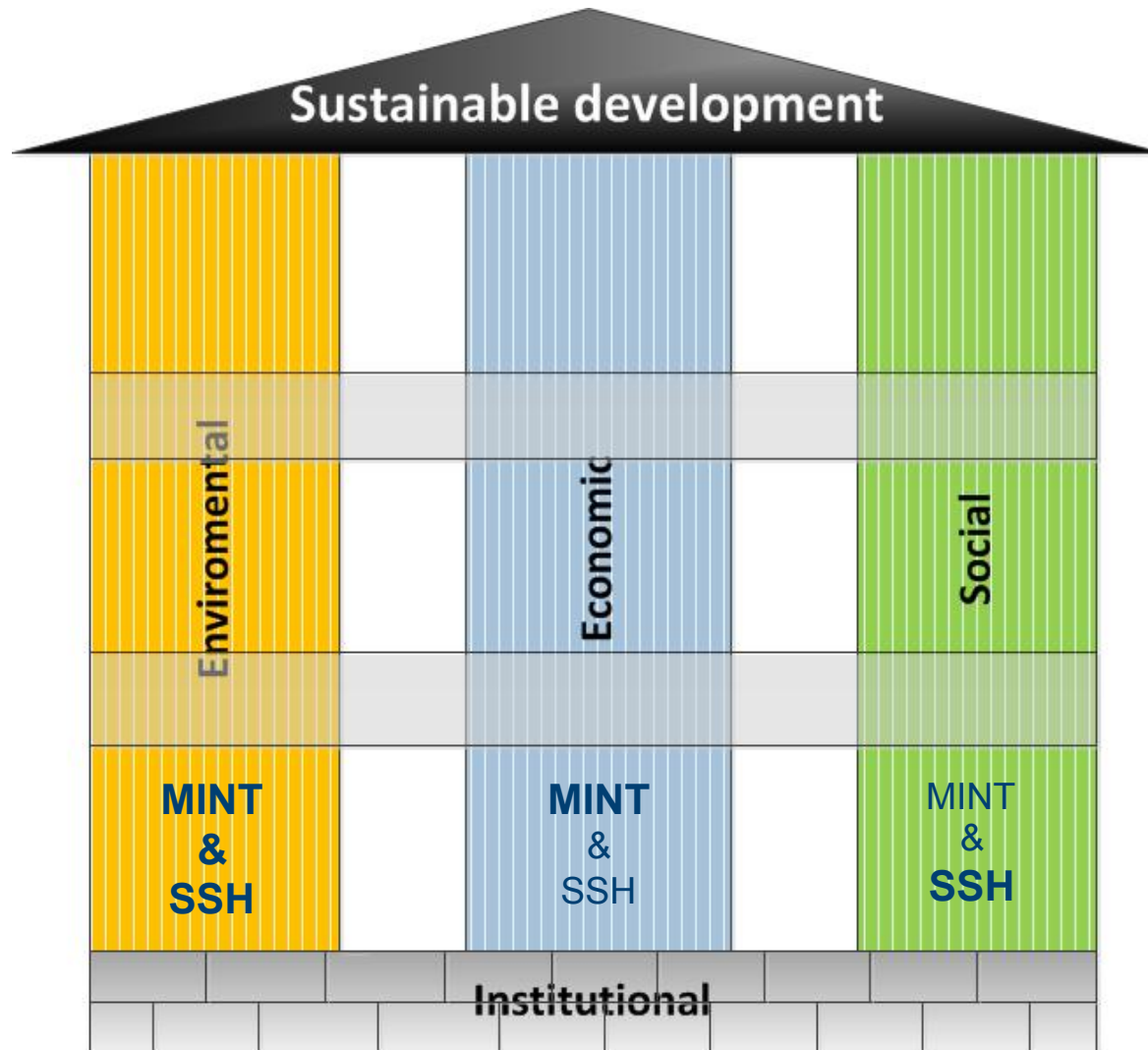
- Escapes of farmed fish and genetic interaction with the wild stock
- Diseases and parasites transfer to the wild stock
- Pollution from excess feed nutrients and chemicals
- Feed and feed resources
- Use of areas
- Tourism
- Transport distance

Environmental

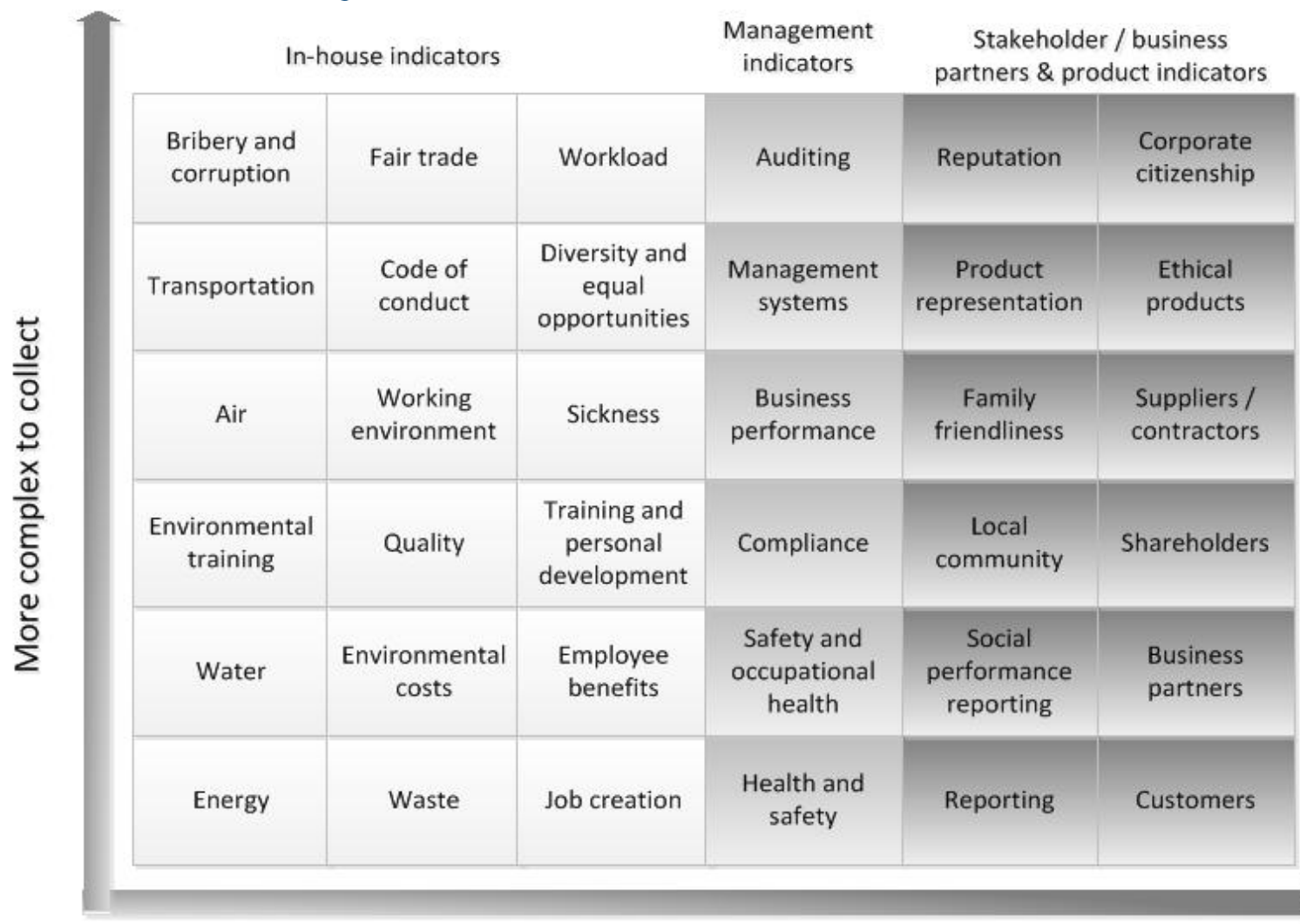
Economic



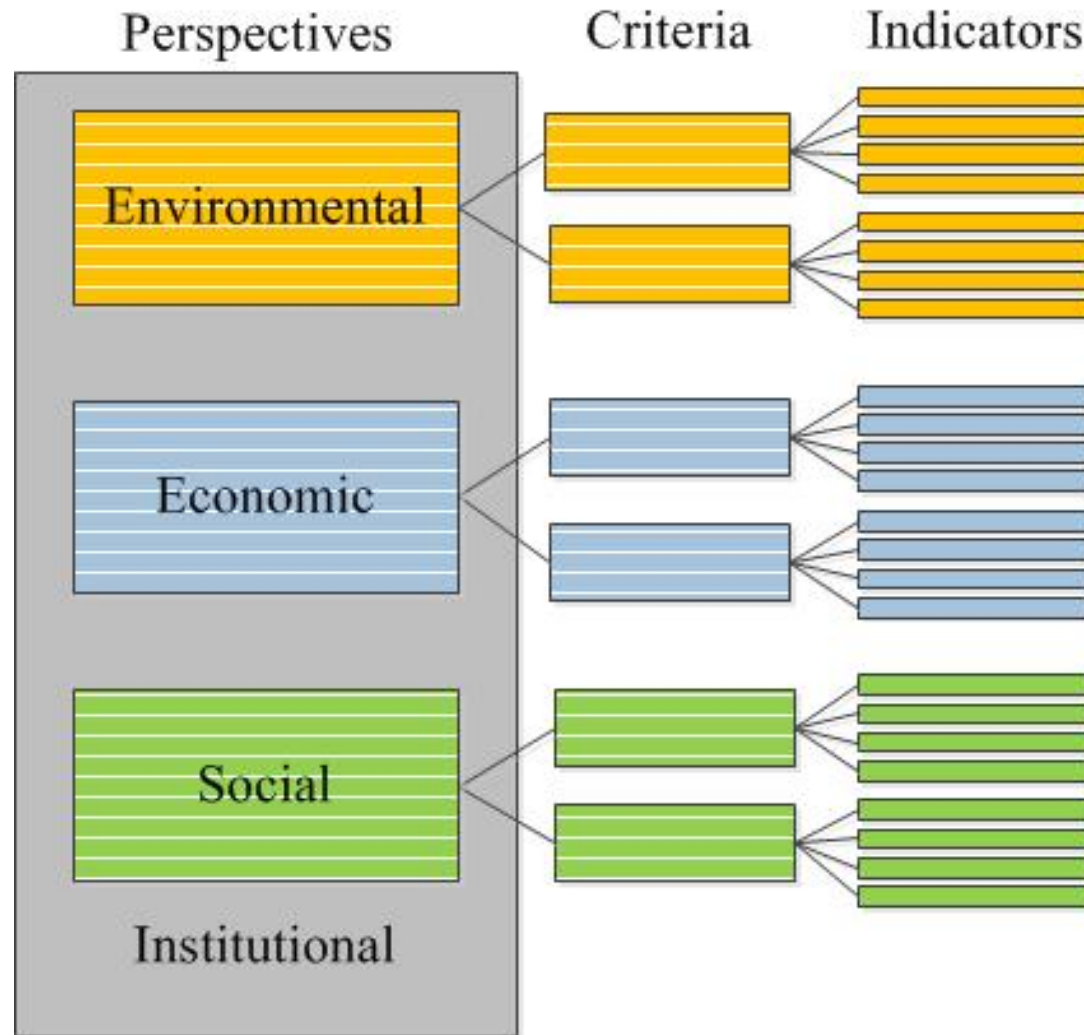
Balanced and strong construction



Complexity

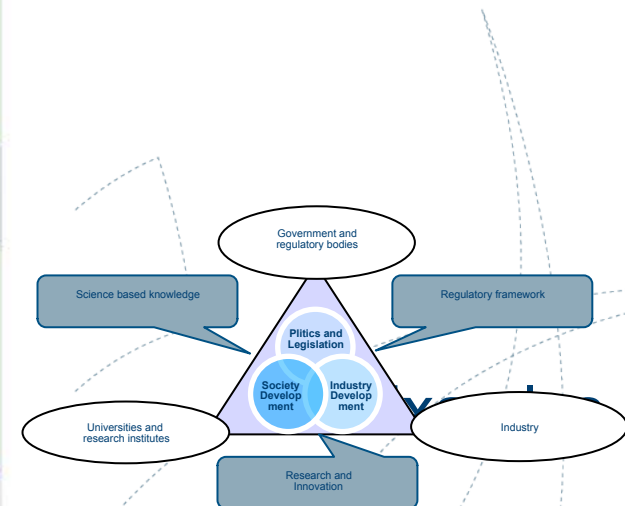
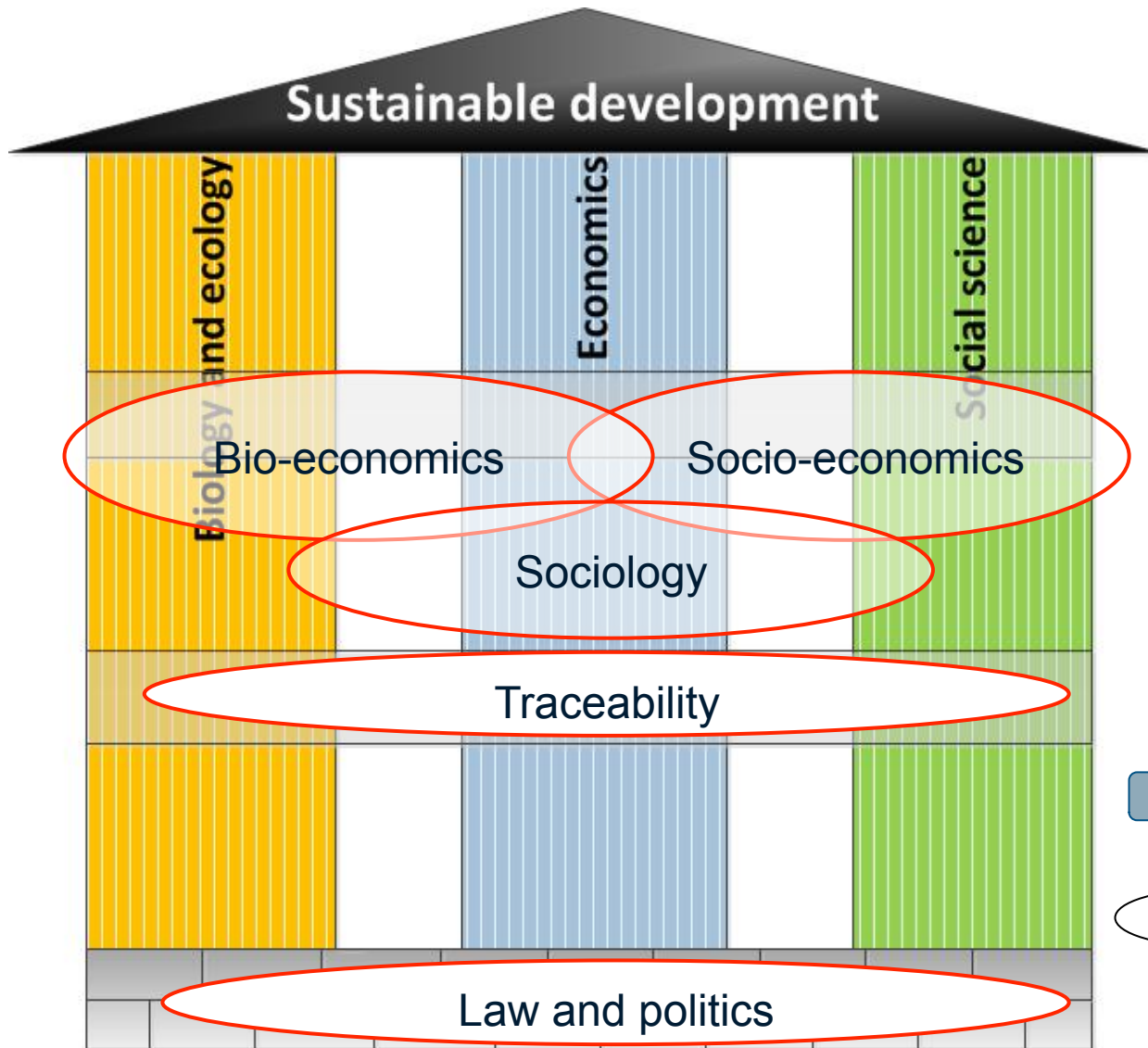


Broader perspective is necessary



Modified from Keeble et al, 2003

Multidisciplinary approach needed



Summary

- Sustainable management and production is necessary for further growth of the world's seafood supply.
- Sustainability is a complex and multi-disciplinary field
- International framework provides guidelines on sustainability, which should include environmental, economic, social and institutional perspective.
- A too narrow focus on only environmental sustainability limits the potential for further growth of seafood supply.
- The objectives of the project is to:
 - Clarify the concept of sustainability in general and specifically how it relates to seafood industry in Europe
 - Identify challenges of a sustainable seafood supply in Europe and suggest how these challenges could be met to achieve a sustainable growth, which includes environment, people, employment, innovation, regulations, and a strong blue economy in Europe.

Thank you for your attention

We would like to work with you on this important issue!

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