

Documenting Sustainability of Fish Products and Enabling More Sustainable Decisions in the Future

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About Nofima

Nofima is a private, non-profit research institute owned by the Norwegian government with head office in Tromsø and over 350 employees in six different locations around Norway.

Nofima was founded in 2008 when four former public food research institutes merged:

- Norconserv – canned and preserved foods, Stavanger
- Matforsk – food from agriculture, Ås
- Akvaforsk – aquaculture related research, Sunndalsøra
- Fiskeriforskning – seafood and processing, Tromsø

Main areas of work:

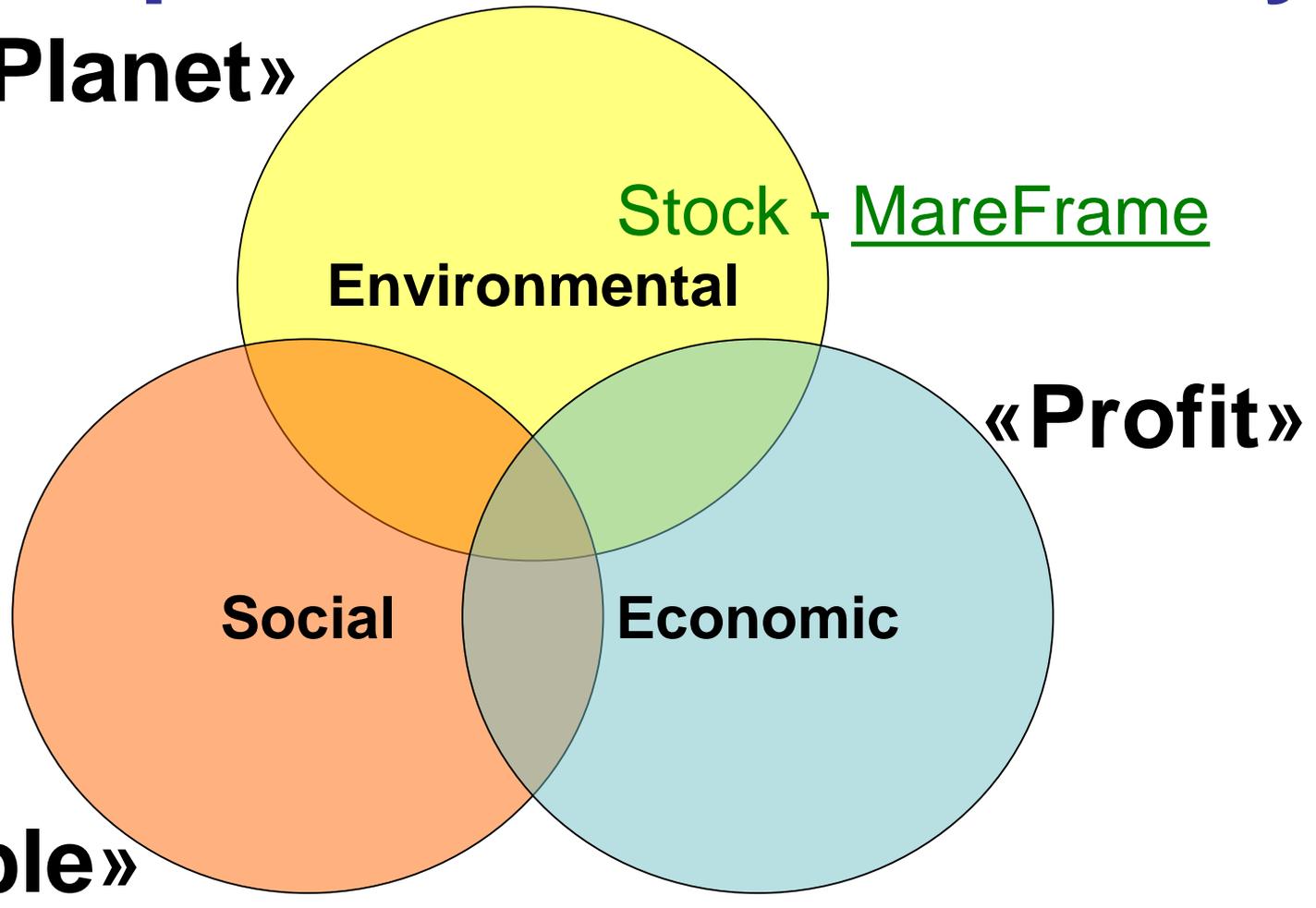
- Aquaculture and fisheries – raw materials
- Food from agriculture and aquaculture – processes and products
- Consumer and market research, which includes:
 - - Consumer research, buying behaviour, food and context
 - - Innovation and product development
 - - Traceability, sustainability, environmental accounting

Turnover in 2013 was around 70 Million Euros



Three pillars of sustainability

«Planet»



Stock - MareFrame

Environmental

«Profit»

Social

Economic

«People»

Many international R&D projects!

EU project MareFrame

- 48 month duration, 01/2014 – 12/2017
- 7.75 MEUR total, 6 MEUR EU contribution
- Matis leads, 28 participants from 16 countries

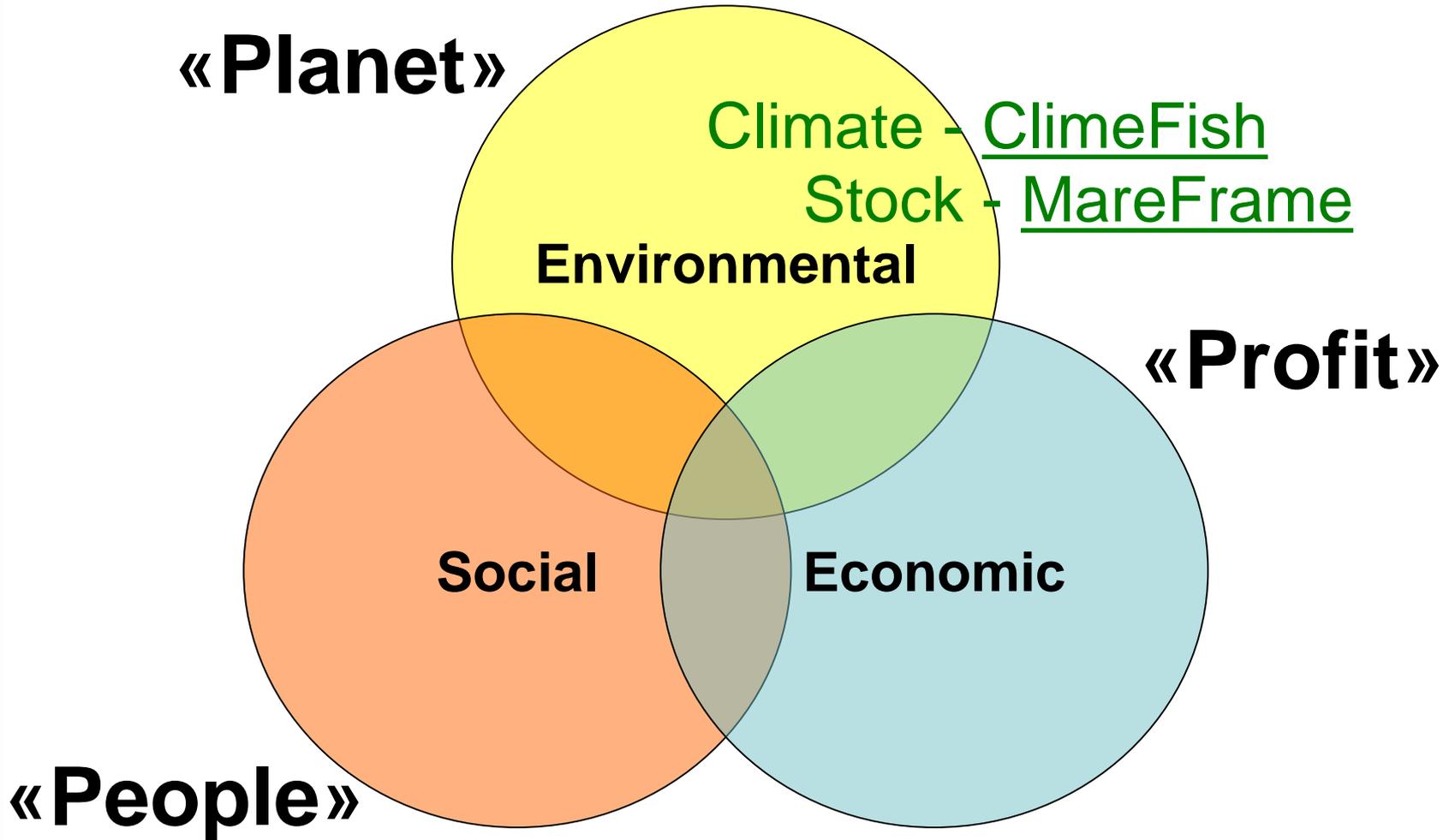
MareFrame objectives:

- Seeks to remove the barriers preventing more widespread use of the ecosystem-based approach to fisheries management
- Development of new tools and technologies, development and extension of ecosystem models and assessment methods, and development of a decision support framework that can highlight alternatives and consequences
- Close integration and co-creation with stakeholders in all development phases, to ensure that ownership lies with them and to increase the chance of acceptance and uptake of the project outcomes

<http://mareframe-fp7.org/>



Three pillars of sustainability



EU project ClimeFish



- 48 month duration, 03/2016 – 02/2020
- 5.2 MEUR total, 5 MEUR EU contribution
- UiT leads, 21 participants from 16 countries

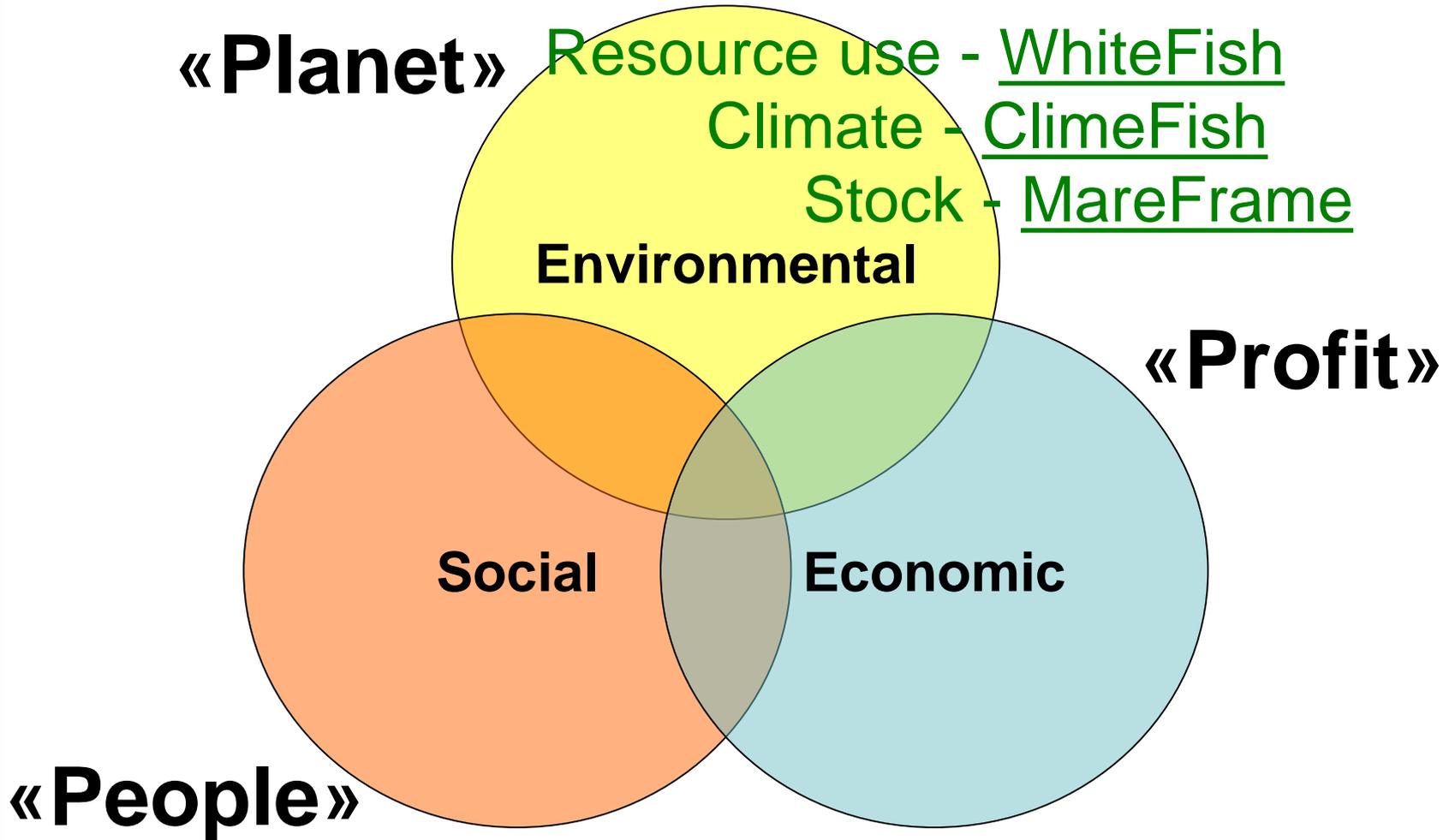
ClimeFish objectives:

- Help ensure that the increase in seafood production comes in areas and for species where there is a potential for sustainable growth, given the expected developments in climate
- Forecasting models will provide production scenarios that will serve as input to socio-economic analysis where risks and opportunities are identified, and early warning methodologies are developed
- Strategies to mitigate risk and utilize opportunities will be identified in co-creation with stakeholders

<http://climefish.eu/>



Three pillars of sustainability



EU project WhiteFish



- 36 month duration, 01/2012 – 12/2014
- 2.9 MEUR total, 2 MEUR EU contribution
- Nofima leads, 13 participants from 5 countries

WhiteFish objectives:

- To strengthen the competitiveness of the European cod and haddock industry by documenting and disseminating the relevant and desirable characteristics the products have, in particular in relation to sustainability, environmental impact and transparency.
- Specifically, to develop a methodology called Batch-based Calculation of Sustainability Impact (BCSI) that SMEs can use for self-assessment and documentation. BCSI will be developed as a European standard supported by simple software tools.

<http://www.whitefishproject.org/>



Calculating emissions per kg fish

Vessel and gear data

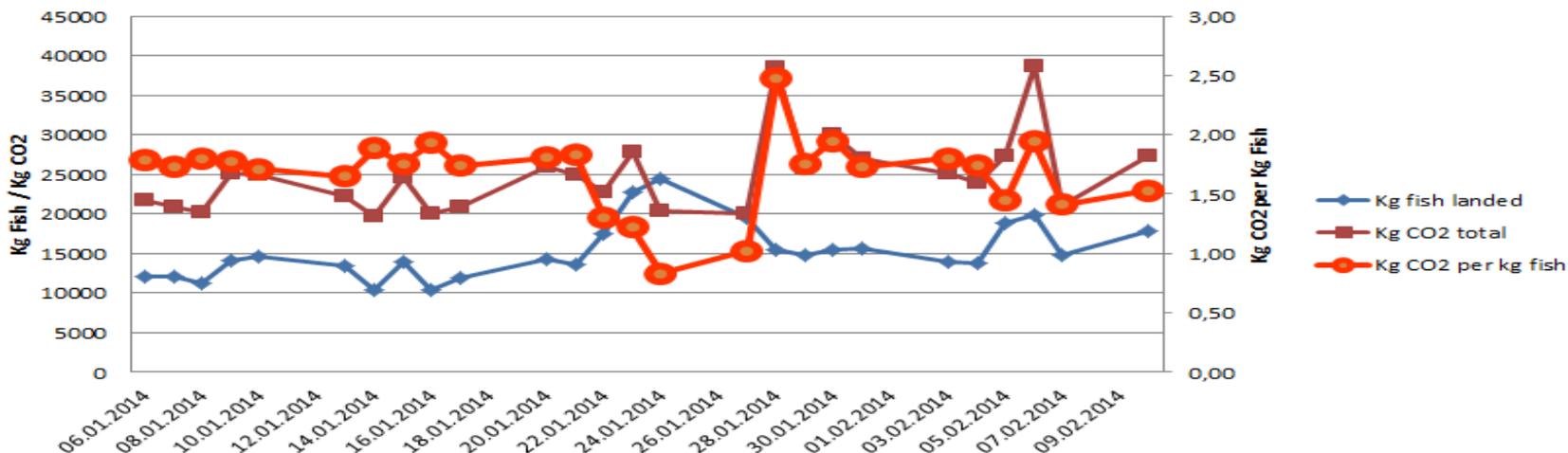
Vessel info - Vessel lifetime		
Reinforcing steel	12560	kg total
Chromium steel	868	kg total
Other / New	0	kg total
Sum	13428	kg total
Estimated tons fish caught in vessel lifetime	100000	tons
Gear info - Gear lifetime		
Various rubber parts	225	kg
Chain and iron parts	333	kg
Sweeper wire	266	kg

Catch data

Batch	Landed kg	MSD	MGO	Lubr	Ammo	R22	Profit
06.01.2014	12116	5682	77	34	0,27	0,03	16426
07.01.2014	12091	5419	128	34	0,27	0,03	6887
08.01.2014	11220	5236	133	31	0,25	0,02	13412
09.01.2014	14129	6546	123	39	0,31	0,03	14221
10.01.2014	14539	6509	97	40	0,32	0,03	17632
12.01.2014	12500	5788	118	38	0,30	0,03	6556



Climate change - CO2 and CO2 per kg



Self-assessment specification

Provide self-declaration in standardised form

Provide a checklist for continuous self assessment

For fishing operation:

1. Fuel type used
2. Fuel amount used
3. Refrigerant type used
4. Refrigerant amount used
5. Vessel / hull / gear comp
6. Vessel / hull / gear comp
batch / kg

Enables calculation of impact

New European standard (CWA)

CEN/TC

Date: 2015-08

FprCWA xxx:2015

CEN/TC

Secretariat: SN

Batch-based Calculation of Sustainability Impact for Captured Fish Products —

Einführendes Element — Haupt-Element — Ergänzendes Element

Élément introductif — Élément central — Élément complémentaire

ICS:

Descriptors:

Recording standard- fishing link

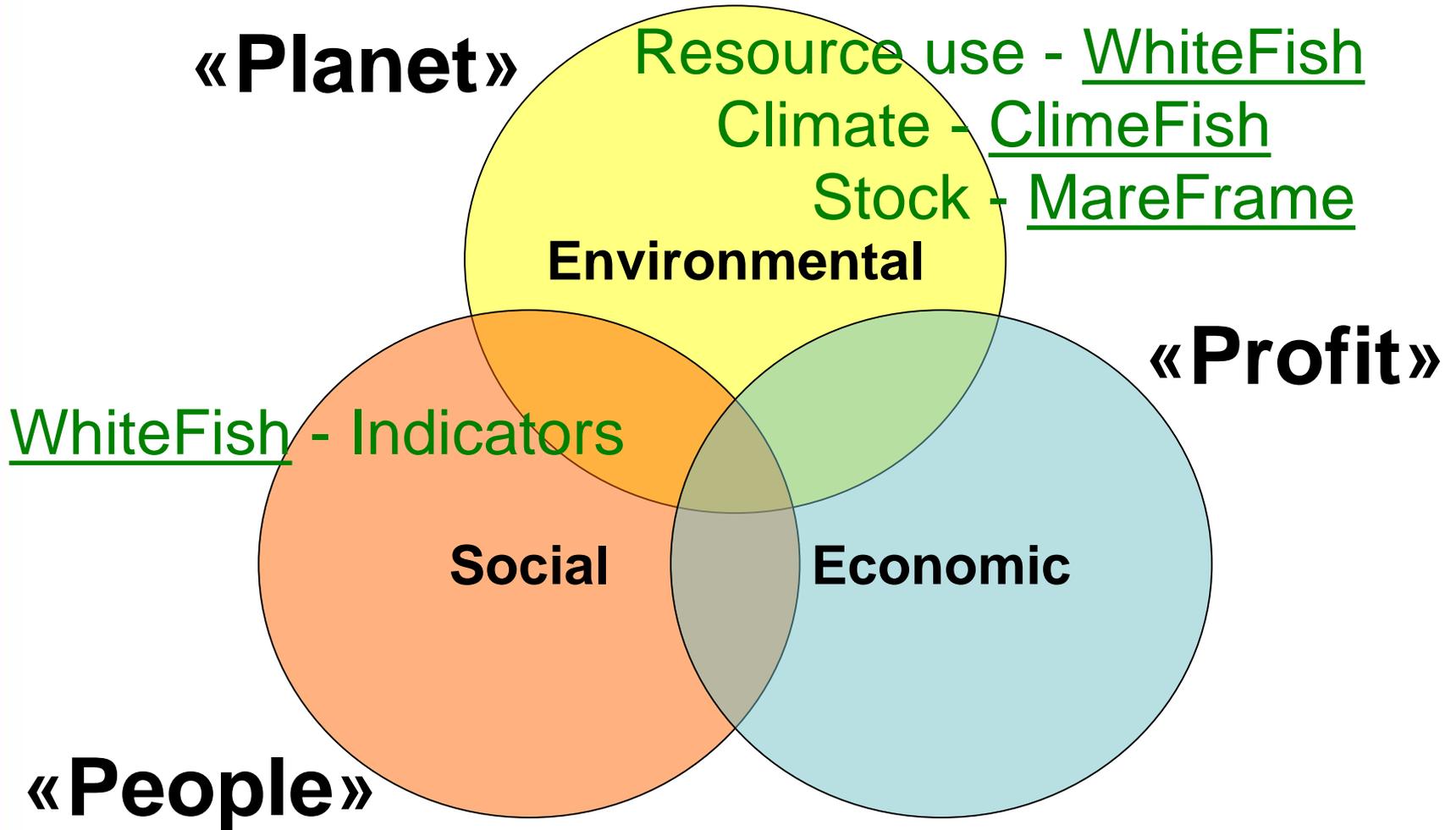
Batch number:	CBatch140330	CBatch net weight:	12116 kg
THE CLIMATE CHANGE CONTRIBUTION FROM THE CATCH LINK			
Fuel/ Refrigerant type	Amount used (kg)	kg CO ₂ e per kg	Sum kg CO ₂ e
MSD	5712,7	3,74	21250,68
MGO	77	3,73	287,21
Lubricating oil	39	3,74	145,18
Ammonia	0,2	2,10	0,57
R22 (HCFC22)	0,03	1885,84	56,58
Sum kg CO ₂ e for this batch			21740,21
kg CO ₂ e / kg fish product for this batch			1,79

Recorded for each catch

Recorded once

Calculated for each batch!

Three pillars of sustainability

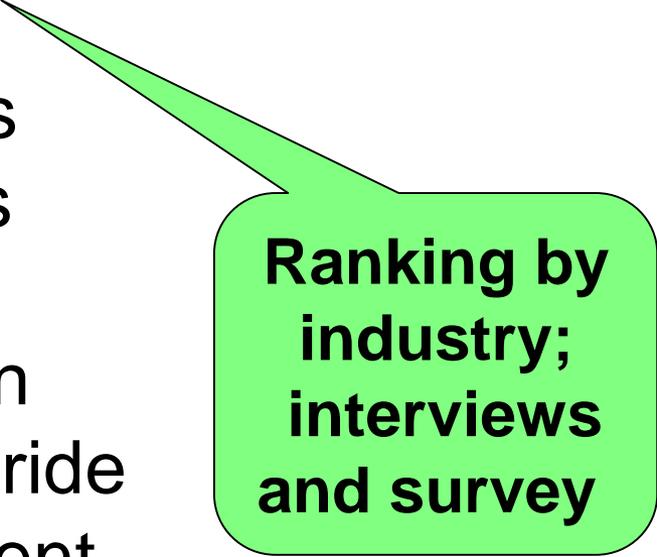


Aspects of social sustainability

Provide self-declaration in standardised form

Provide a checklist for annual self assessment

1. Freedom of association and collective bargaining
2. Timely payment of salaries
3. Pension fund contributions
4. Worker safety
5. Employees' job satisfaction
6. Employees' professional pride
7. Healthy working environment
8. Wage or salary level



**Ranking by
industry;
interviews
and survey**

Traffic light system

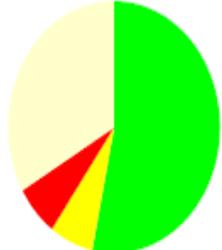
Issue	Score
1 Employees' working hours	
- Daily working hours	
- Weekly working hours	
- Yearly working hours	
2 Arrangements for employees' overtime	
3 Companies' salary levels	
- Minimum hourly salary paid (fisherman)	
- Maximum hourly salary paid (skipper)	
4 Companies' timely payment of salaries	Yes
5 Companies' pension fund contributions	
6 Employees' income security during sickness	
7 Worker safety	
- Occurrence of accidents per year	
- Safety drills per month	

Social sustainability report

for Nofima AS



Social indicators

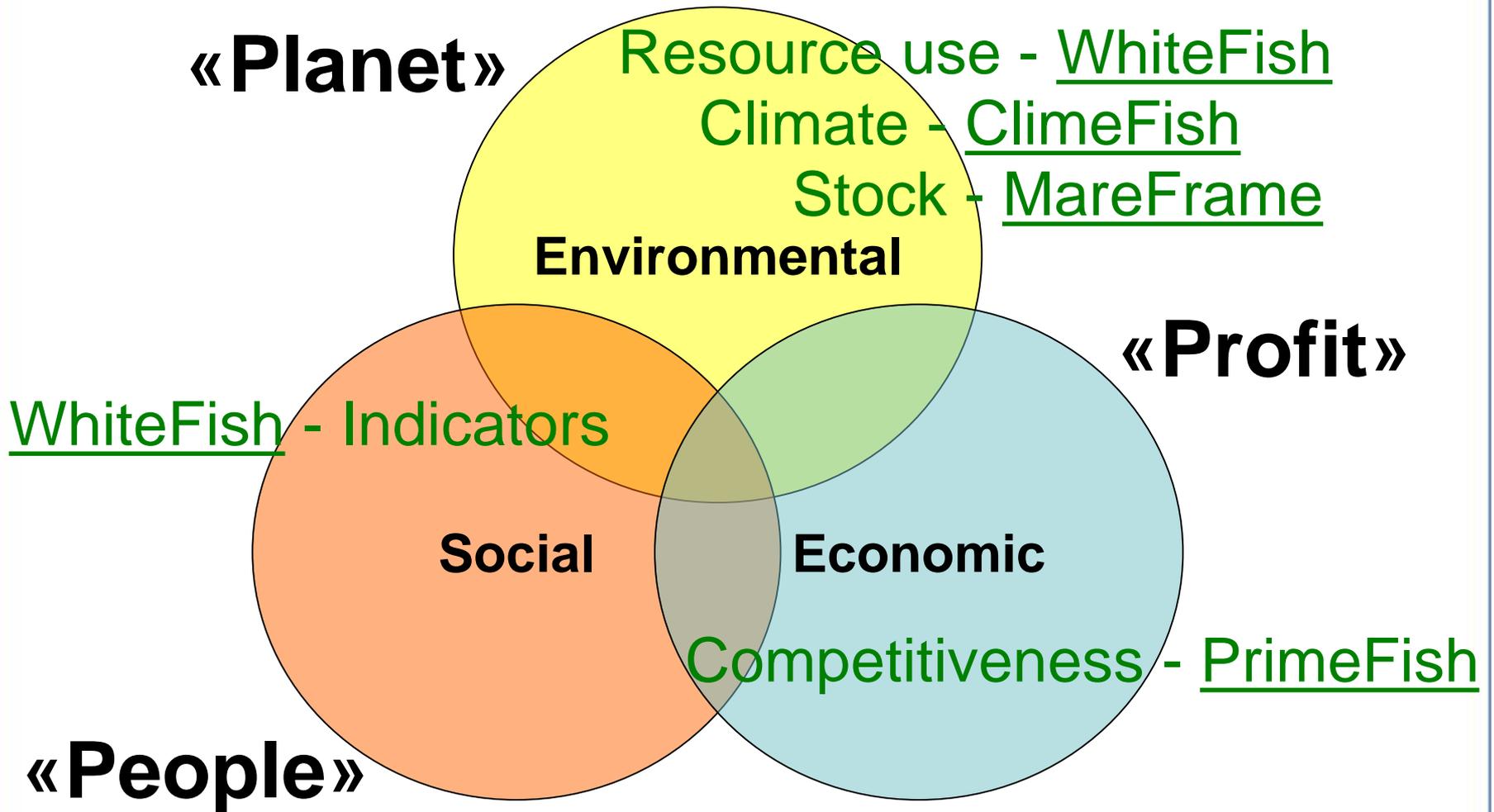


- Status green - OK
- Status yellow, can be improved
- Status red, should be improved
- Status white, neutral

<p>Green Indicators</p> <ul style="list-style-type: none"> Average working hours - per working week Average working hours - per year Worker salary level Pension fund Job satisfaction Freedom of association Healthy environment Time from setting to surfacing 	<p>Yellow Indicators</p> <ul style="list-style-type: none"> Average working hours - per working day
<p>Red Indicators</p> <ul style="list-style-type: none"> Accident frequency 	<p>White Indicators</p> <ul style="list-style-type: none"> Timely payment Professional pride Community involvement Time from catch to landing Time from surfacing to killing

Valid from: 01.01.2013 Generated on: 23.04.2014

Three pillars of sustainability



EU project PrimeFish



- 48 month duration, 2015 – 2019
- 5.275 MEUR total size, 5 MEUR EU contribution
- Led by Matis, Iceland; Nofima large partner
- 16 scientific partners and 40+ industrial partners

The overall aim of PrimeFish is to improve the **economic sustainability** of European fisheries and aquaculture sectors. PrimeFish will gather and analyze data from individual production companies, industry and sales organisations, consumers and public sources. The data will be related to the competitiveness and economic performance of companies in the sector; this includes data on price development, supply chain relations, markets, consumer behaviour and product innovation

www.primefish.eu



Economic sustainability

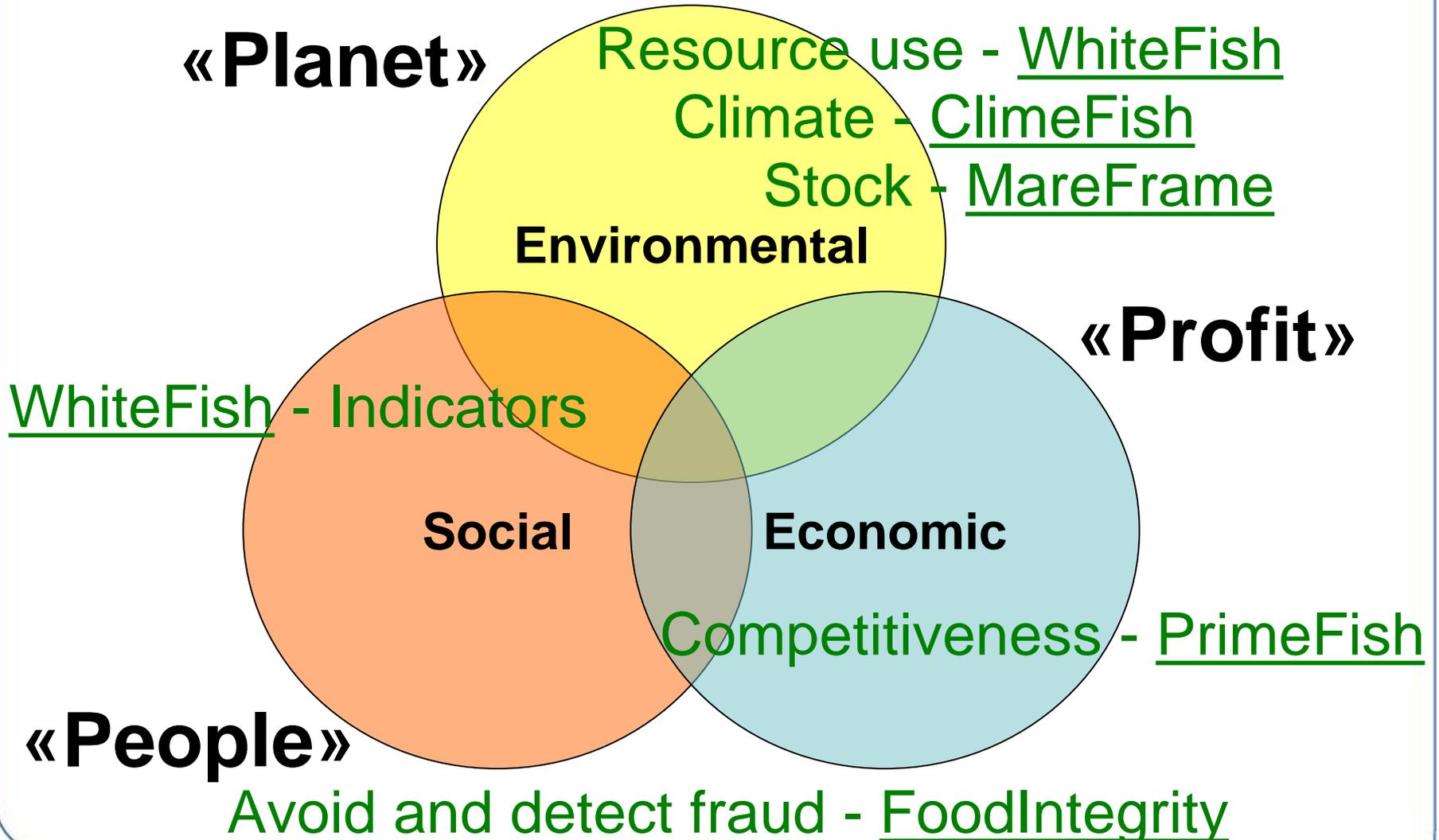
Mainly for internal use, for comparing economic sustainability with other aspects of sustainability

More detailed economic analysis in other systems

1. Profit per batch
2. Labor used per batch
3. Net weight per batch
4. Fuel use per batch

Examine not only whether profit is high (positive) and labor use is low, but also the variability of the data which translates to production risk.

Three pillars of sustainability



EU project FoodIntegrity



- 60 month duration, 01/2014 – 12/2018
- 11.5 MEUR total, 9 MEUR EU contribution
- FERA leads, 38 participants from 20 countries

FoodIntegrity objectives:

- To provide Europe with state of the art integrated capability for detecting fraud and assuring the integrity of the food chain
- For seafood: To design, create and begin to populate a database suitable for documenting the degree and scope of seafood misdescription in Europe
- For seafood: To do spot checks for selected products and analyse to what degree analytically verifiable claims about seafood products are true
- For seafood: To develop a coherent and integrated toolbox, linking seafood product claims to analytical and paper-trail methods, to facilitate verification and validation

<http://www.foodintegrity.eu/>





Citizen science: Seafood sampling in restaurants



- Step 1: Go out for dinner!
- Step 2: Order something fishy
- Step 3: Place a small amount in the provided tube*
- Step 4: Send it back to us.



The results are that FoodIntegrity will get an amazing sample set... and you will get into the prize draw to win an amazing prize!

**If you want to get involved,
contact Miguel (mpardo@azti.es)**



*We will send you a protocol and everything you need to do the sampling

Seafood sampling and analysis

200+ samples
collected from
7 EU
countries

100 samplers,
some have
not been very
active yet

Sampling will
continue for
the rest of the
year, then
analysis will
start, and
comparison
with claim



Summary and conclusions

- **All aspects of sustainability are important; if one of them is missing then the sector as a whole is no longer sustainable**
- **We need to be sustainable, and we need to document the fact that we are sustainable**
- **Documenting sustainability for seafood can be value-adding and sometimes it is a requirement for market access**
- **There is a lot of fraud and misdescription of seafood products; false and misleading claims about sustainability are difficult to disprove**

Thank you for your attention

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