

# Environmental Management & CSR – Researcher seminar

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*NTNU - January 26, 2011 (Internal document, please do not re-distribute)*

## **Attending:**

Annik M. Fet	Caroline Cheng
Uno Abrahamsen	Børge A. Johansen
Magnus Sparrevik	Laxmi Panthi
Christofer Skaar	Simen A. H. Knudsen
Natallia Vakar	Marina Magerøy

John Hermansen and Dina Aspen were also invited, but did not have the opportunity to be present.

## **Summary:**

The purpose of the seminar was to share and build knowledge in the environmental management & corporate social responsibility working group at NTNU. Professors, researchers and students affiliated with the WG were therefore invited to a half-day seminar where presentations of ongoing work within the group were presented. Special focus was set on the work of Magnus Sparrevik, being in the final run of his PhD theses, who was visiting NTNU. The general opinion about the seminar was that this type of forum is useful and necessary.

## **Agenda:**

Professor Annik M. Fet:	Status & overview of EM&CSR WG activities Summary of Budapest visit (Conference & project finalization)
Magnus Sparrevik:	“Methods for Sustainable Management of Contamination Sources in Urban Coastal Areas”
Christofer Skaar:	“ISO 14067 – Greenhouse gas management in the value or supply chain”
Caroline Cheng:	Brief update on PhD theses work
Natallia Vakar:	Brief update on PhD theses work
Børge A. Johansen	“Traceability of eco-labeled fish”

## **Presentations**

Presentations are given in the following pages. For further information please contact:

Børge A. Johansen [borge.johansen@iot.ntnu.no](mailto:borge.johansen@iot.ntnu.no)

## Internal seminar EM&CSR – 26. January 2011

Professor  
Annik Magerholm Fet  
Department of Industrial Economics and Technology  
Management



## Projects 2011

- IGLO-MP 2020 – Innovation in Global Production Systems – Maritime production – 2008-2012
- PCRs for plate furnitures, 2011
- Sustainable Development, Production and Communication, Hungary, 2008-2011
- CSR as a Strategic Tool for Sustainability Focused Innovation in Small and Medium Sized Enterprises , 2010-2012
- Harmonization of PCR and EPD, organized through EPD-Norge
- Biochar on degraded agricultural lands in Latin America: Using Terra Preta knowledge to mitigate climate change and improve soil quality (Researcher project -LATINAMERIKA)
- Klimaspør norsk sjømat, Standard Norge



## Proposals/initiatives in 2010

- Knowledge based networking between young, innovative, CSR-driven companies (initiative together with WWF)
- CSR and green procurement (initiativ IØT – DIFI)
- ShipSoft Application
- National CSR-conference in Trondheim 1.-2. December
- CSR-verdi 2030 – draft sent to NFR, des 2010



## PhD projects

- Schau, E. Environmental life cycle assessments of fish food products with emphasis on the fish catch process (2011) (funded by Sintef-program)
- Skaar, C. CSR-Reporting Systems in Global Value Chains (2011)
- Vakar, N. CSR as a competitive factor (2011) (funded by the Globalization program)
- Cheng, C. Evaluation of the Effectiveness of Hexagonal Balanced Scorecard approach for Managing Corporate Social Responsibility (CSR) in Global Production Systems (2013). (funded by the Globalization program)
- Sparrevik, Magnus: Methods for Sustainable Urban Coastal Area Management applied on Contaminant Sources (2011) (funded by NGI)



## Webpages

- [www.iot.ntnu.no/csr](http://www.iot.ntnu.no/csr) - **Natalia?**
- [www.iglo-mp2020.no](http://www.iglo-mp2020.no) - **Børge**
- [www.csr-norway.no](http://www.csr-norway.no) - **Børge?**
- [www.netimpact.no/](http://www.netimpact.no/) - **Christofer?**
- <http://twitter.com/csrntnu> - **amf**

## Meeting in Budapest

Two events:

- Final meeting of Hungarian project under Norway Grant: Sustainable consumption, production and communication
- EMAN\_EU 2011 Conference: Accounting for Climate Change – What and How to Measure

## Important contacts:

- Mathematical modelling of indicators in the value chain, examples from the furniture industry (Christofer – contact Imre Dobos, Maria Csutora)
- Sustainable Management Control, Stefan Schaltegger, Use of Balanced Scorecards to build sustainable strategies (Caroline – get copy of paper)
- Carbon Accounting – A systematic litteratur review, of interest for all
- Environmentalø Accounting in historic perspective, of interest for all
- Carbon Emission Locked –in Trade, of interest for all

## Proposals/initiatives in 2011

- NEPTUNE - submitted
- CSR-verdi 2030 – ??? 13. February 2011
- Sustainable consumption – Hungary, see under Norway Grant [www.norvegia.hu](http://www.norvegia.hu)
  - EPD-systems for Hungary
  - Regulatory aspects
  - CSR-region
- Membership in EMAN, [www.eman-eu.net/](http://www.eman-eu.net/) and [eman\\_information-on@leuphana.de](mailto:eman_information-on@leuphana.de)
- Activities internal IØT across faggrupper?

## Different invitations, call for abstracts:

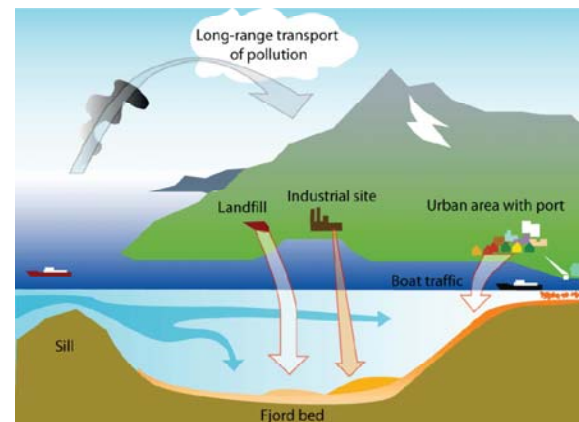
- *Seventh Environmental Management Leadership Symposium* will, launching of the new online international *Journal of Environmental Sustainability*. 28.02: extended abstract (3-5 pages) or draft paper
- *Special issue on Journal of Cleaner Production*, 28.02 extended abstract , [http://www.elsevier.com/wps/find/journaldescription.cws\\_home/30440/authorinstructions](http://www.elsevier.com/wps/find/journaldescription.cws_home/30440/authorinstructions)
- *Journal of Customer Policy*, special issue on “From knowledge to Action - New Paths towards Sustainable Consumption”, paper submission 31. March, <http://www.springerlink.com/content/100283>
- EMAN-Conference on Sustainable Accounting for Emerging Economies, 28-30 Sept, South Africa, 30 April, Extended abstract, <http://www..ul.ac.za/>
- EMAN-conference, [www.eman-eu.net/](http://www.eman-eu.net/), Helsinki, Finland 24 - 26 September 2012

## Methods for Sustainable Management of Contamination Sources in Urban Coastal Areas

Status January 2011

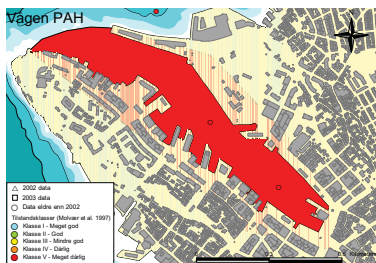
Magnus Sparrevik

## The sediment issue



## Risikovurdering av forurensede sedimenter

Enkelt resultat

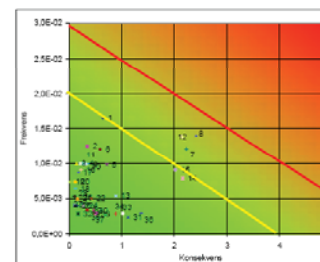


Komplisert prosess



## Hvordan ser vi på risiko?

Den vitenskaplige måten



Den intuitive måten



# Paper 1 – Status analysis of the Norwegian management system



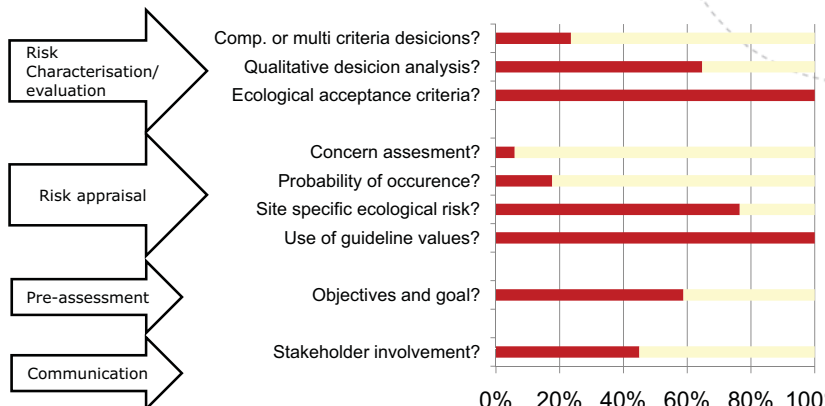
Sparrevik, M. and Breedveld, G. D. (2010). *From Ecological Risk Assessments to Risk Governance. Evaluation of the Norwegian Management System for Contaminated Sediments*. Integr Environ Assess Manag, 6, 240-248.

# IRGC - Risk governance system

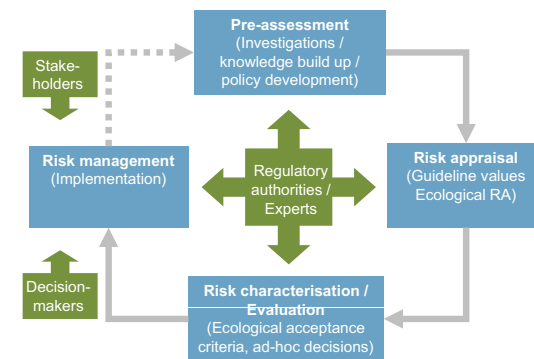


Sparrevik and Breedveld 2010

# The results from the evaluation

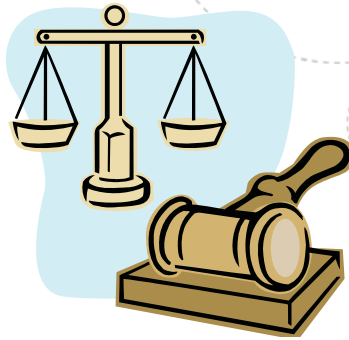


# My perception of the process



## Conclusions-paper 1

- Main focus on risk based uncertainty management – concern assessment and a more holistic view environmental impact necessary
- Advisory involvement of stakeholders – earlier involvement is recommended
- Ad-hoc related decision making – supporting of multi criteria decisions would be beneficial



## Eksempel fra doktorgraden – artikkel 2 og 3

- Betydning av opplevd risiko ved sediment opprydding i Oslo havn
- Arbeid med intressentgrupper i Bergen havn

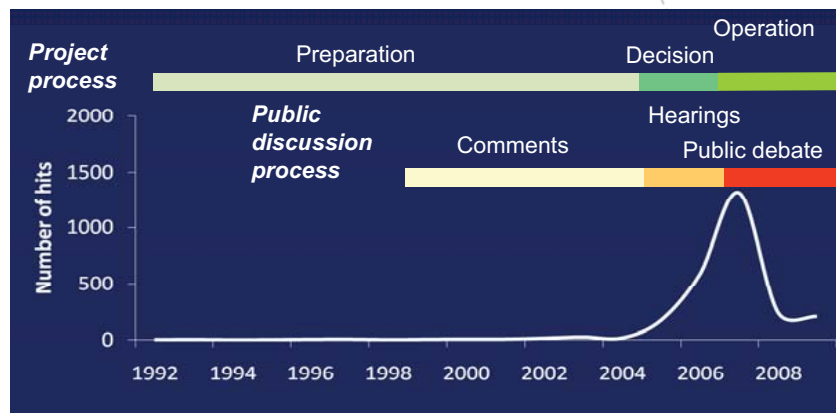
Sparrevik, M., Ellen, G. J. and Duijn, M. (2011): *Evaluation of Factors Affecting Stakeholder Risk Perception of Contaminated Sediment Disposal in Oslo Harbor*. Environmental Science & Technology, 45, 118-124.

Sparrevik, et al Use of Multi-Criterial Involvement Processes (MIP) to Enhance Transparency and Stakeholder Participation at Bergen Harbour, Norway. *Accepted in Integ. Environ. Assess. Manage. 2010.*

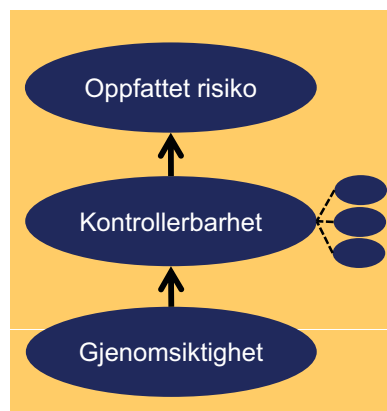
## Prosjektet Ren Oslofjord



## Prosjekt prosess og debatt

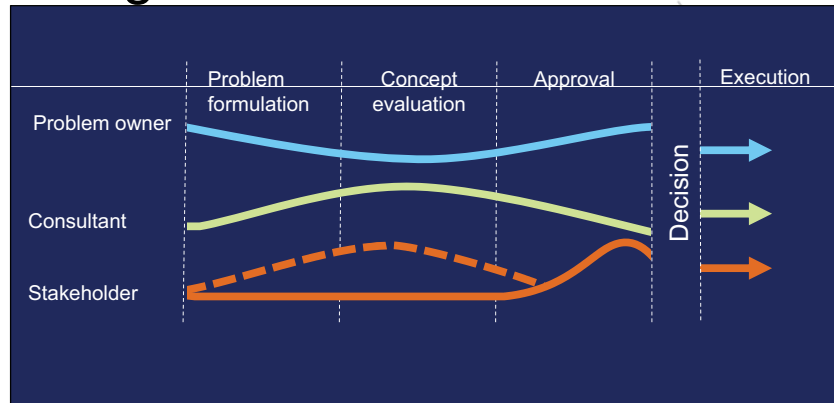


## Proessen var viktig for opplevelse av risiko ved dypvandeponiet





## Forutsetninger for arbeidet i Bergen



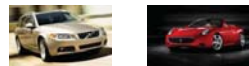
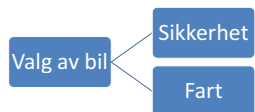
## Rekruttering av rådgiver grupper

- Innebyggere/innebyggerpanel  
Rekruttert for å representere generelle interesser (17)
- Intressenter  
Rekrutterte gjennom en prosess. Spesifikke interesser (16)
- Ekspert  
Web rekruttering. Ikke fra Bergen (12)



## Bruk av multikriterie analyse (enkelt eksempel)

### Kriteriesett



	0.8	0.2
	0.2	0.8

### Vekter

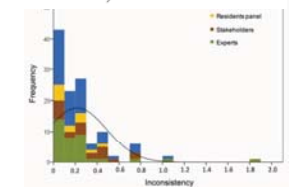
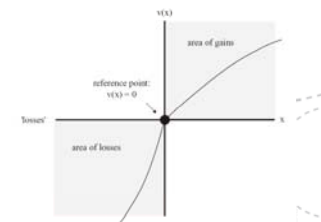
	Alt 1	Alt 2
Sikkerhet	0.5	0.1
Fart	0.5	0.9

### Utfall

	Alt 1	Alt 2
Ferrari	0.5	0.74
Volvo	0.5	0.26

## Various MCDA methods

- Outranking
- Multi attribute value theory (MAVT)
- Multi attribute utility theory (MAUT)
- Analytic hierarchy Process (AHP)
- Direct weighing
- Swing method
- Pair-wise comparison



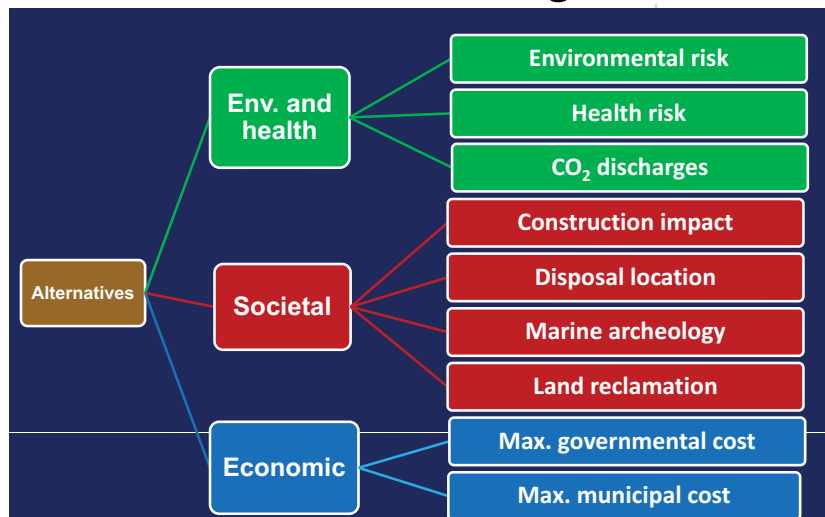
# Arbeidsprosess i Bergen (MIP)



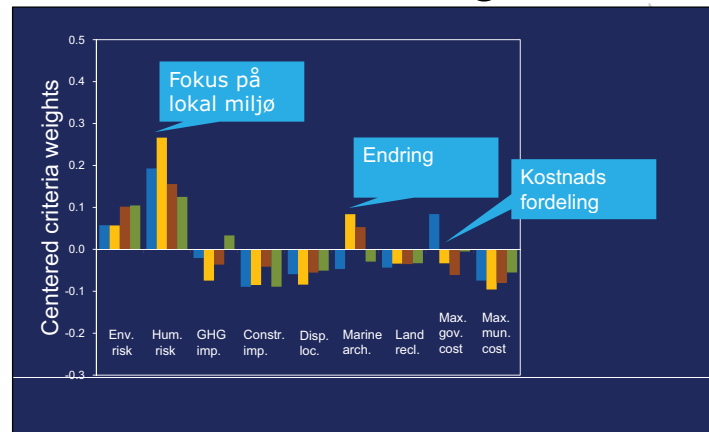
Sparrevik, et al Use of Multi-Criterial Involvement Processes (MIP) to Enhance Transparency and Stakeholder Participation at Bergen Harbour, Norway. *Accepted in Integ. Environ. Assess. Manage.* 2010.



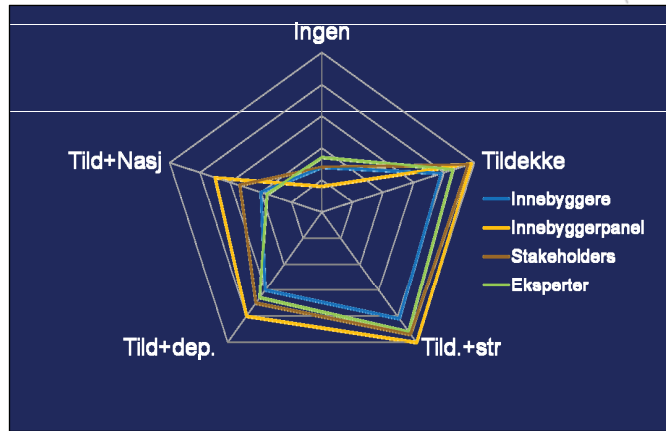
# Kriterier for vurdering



# Resultat av vekting



# Resultat



# - Vi gleder oss til å ta i bruk sjøen



«Planene for opprensningen av miljøgifter som PCB i Kirkebukten er helt tynne. Nå gleder vi oss til å ta i bruk sjøen i Kirkebukten også.»

**Ar Heivane** anses som miljøvernleder i Kirkebukten. Han er leder i Sjøen i Kirkebukten og leder for Sjøen i Kirkebukten. Han er leder for Sjøen i Kirkebukten og leder for Sjøen i Kirkebukten.

**«Bydelingen»** er en av de fire delene i Kirkebukten som er under opprensning. Det er en del av opprensningen av miljøgifter som PCB i Kirkebukten.

**«Hil heling»** er en av de fire delene i Kirkebukten som er under opprensning. Det er en del av opprensningen av miljøgifter som PCB i Kirkebukten.

**«Sjokkert over miljøbevegelsen»** er en av de fire delene i Kirkebukten som er under opprensning. Det er en del av opprensningen av miljøgifter som PCB i Kirkebukten.

**«Kirkebukten skal bli bydelens miljøpark»** er en av de fire delene i Kirkebukten som er under opprensning. Det er en del av opprensningen av miljøgifter som PCB i Kirkebukten.



Kirkebukten skal bli bydelens miljøpark

**Sydvesten ønsker sine lesere et riktig godt nytt år**  
**SYDVESTEN**  
Lokalavis for BYDELNEI TRINGSBÅTEN, OG LAKSEVÅG

**- Kommunen lurer folk på Laksevåg trill rundt**

**Exit bydelstyrene**

**Hverdagsheiter**

**- Blir ikke trygt å bade i Kirkebukten**

**Kirkebukten**

**NYHETER**

**- Sjokkert over miljøbevegelsen**

**«Sjokkert over miljøbevegelsen»**

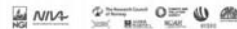
**«Blir ikke trygt å bade i Kirkebukten»**

## Eksempel fra doktorgraden – paper 4

- Bruk av livsløpsanalyser for vurdering av tildekking i Grenlandsfjorden

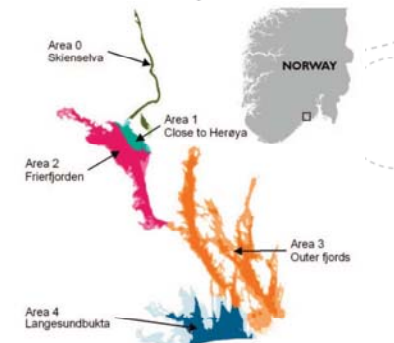
Sparrevik M, Saloranta TM, Cornelissen G, Eek E, Fet A, Breedveld GD, Linkov I. 2011. Use of life cycle assessments to evaluate the environmental footprint of contaminated sediment remediation. *Environ Sci Technol* (in review).

Sparrevik M and Linkov I Use of Life Cycle Assessments for improved decision making in contaminated sediment remediation *Integrated Assessment and Environmental management* (in press).



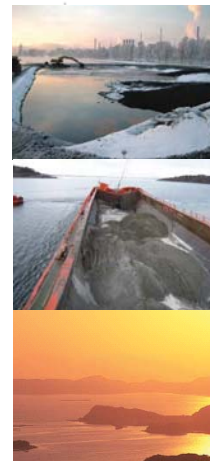
## The Grenland case study –

- Extensive contamination of dibenzo dioxins and furans from formal industrial production
- Dietary advice on fish / shellfish consumption
- Prioritized for remediation. Thin layer capping the only feasible alternative



## Motivation for LCA

- Environmental risk assessments (ERA) is not addressing impacts through the whole life cycle
- Non toxicological stressors are scarcely addressed in ERA
- LCA is more suitable for comparative prioritization between remediation alternatives than ERA



## Hva er forskjellen mellom en miljørisikoanalyse (ERA) og en LCA

parameter	LCA	ERA
Formål	Prioritering optimalisering	Avklare "farlighet" i forhold til en grenseverdi
Metodikk	Mengde (budsjett)	Konsentrasjon (PEC/PNEC)
Oppløsning	Global (regional)	Lokal
Enhet	Funksjonell enhet	Stoff, produkt, steds spesifikk
Tidshorisont	Lang	Kort
Effektvurdering	Reell	Konservativ

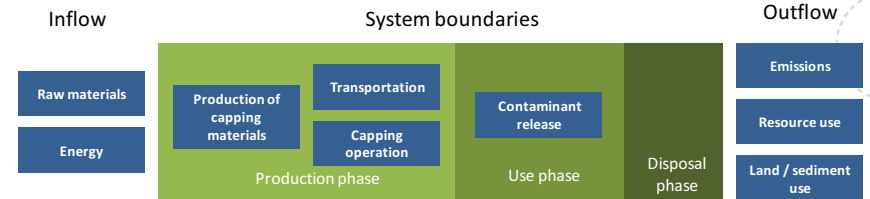
# Capping alternatives

- Natural recovery
- Local dredged clay
- Crushed limestone
- Activated carbon from mineral coal
- Biocarbon from coconut waste



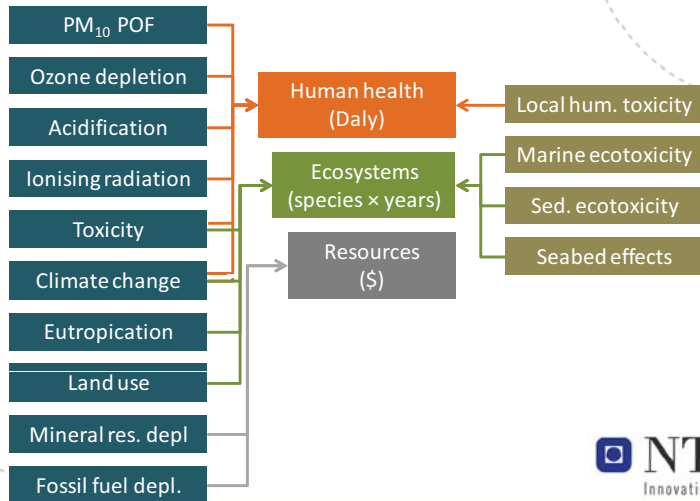
www.opticap.no  **NTNU**  
Innovation and Creativity

# System boundaries for inventory



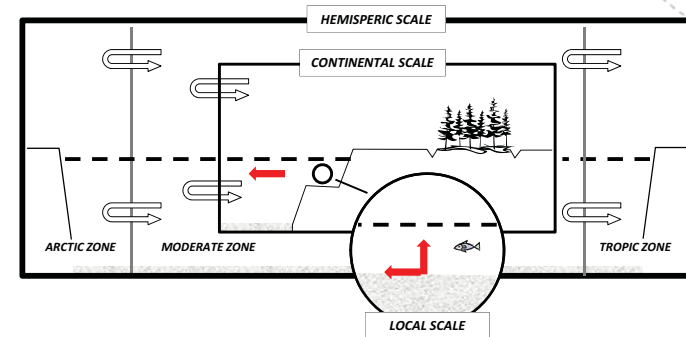
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# ReCiPe and adaptations



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# USES-LCA and adaptations

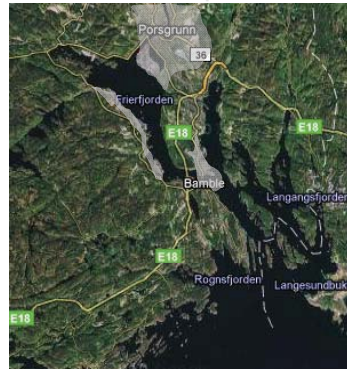


Huijbreghts 2003

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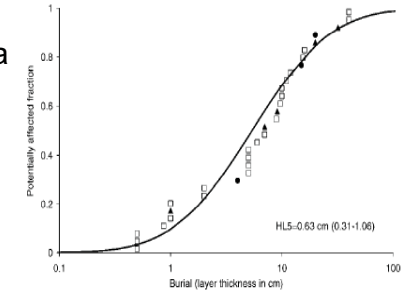
# Calculations of human toxicity

- Use of local fate factors and local population distribution
- Resulting characterization factors (DALY/kg)
  - 351 (Local USES-LCA)
  - 0.6 (Marine USES-LCA)
  - 2020 (Eco ind. 99)
  - 0 (Impact 2002)



# Seabed occupation and transformation

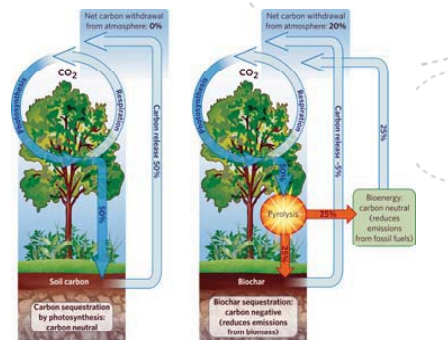
- Similar methodology to ecotoxicity. Use of species sensitivity data (SSD)
- Transformation –  $\Delta$  Grain size
- Occupation – Cap thickness
- 5 year duration



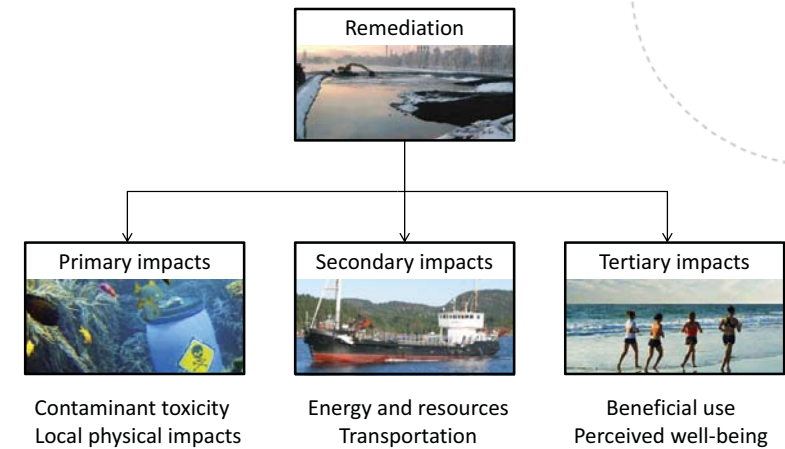
Smit et al 2008

# Important assumptions for LCA

- Clay / Lime; local / regional production
- AC / Biocarbon; production China / India Coal based energy production. Vendor data
- Biocarbon; CO<sub>2</sub> sequestration equal to carbon amended. Coconut waste material used



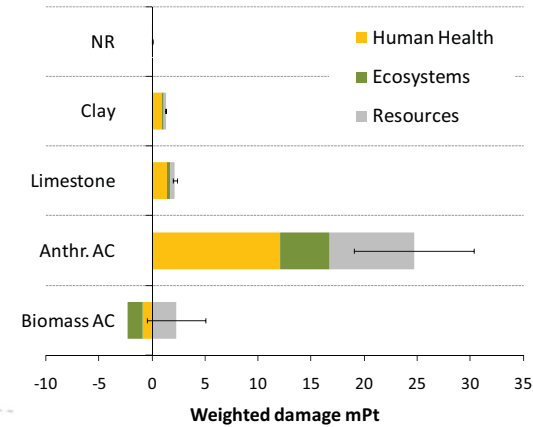
Lehmann 2007



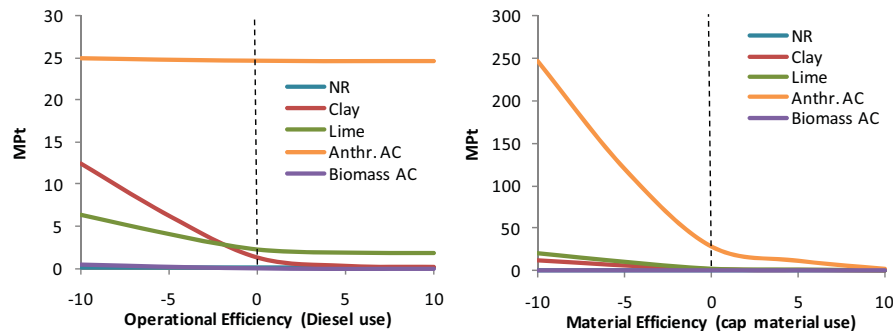
# Normalized damage – primary aspects

Damage effect	NR	Clay	Lime	AC	Biocarbon
Local human toxicity	122	24	24	6	61
Local marine ecotoxicity	$3 \cdot 10^{-4}$	$5 \cdot 10^{-5}$	$5 \cdot 10^{-5}$	$1 \cdot 10^{-5}$	$1 \cdot 10^{-4}$
Local sediment ecotoxicity	$2 \cdot 10^{-5}$	$5 \cdot 10^{-6}$	$5 \cdot 10^{-6}$	$1 \cdot 10^{-6}$	$1 \cdot 10^{-6}$
Seabed trans (grain size)	-	-	86	-	-
Seabed occ. (thickness)	-	12	12	-	-

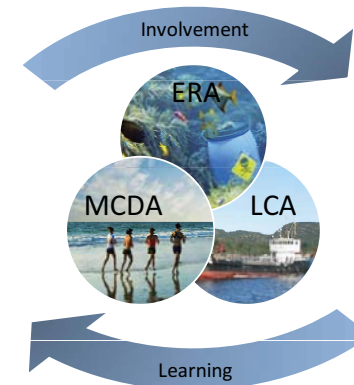
# Normalized and weighted results - all



# Sensitivity analysis and optimization

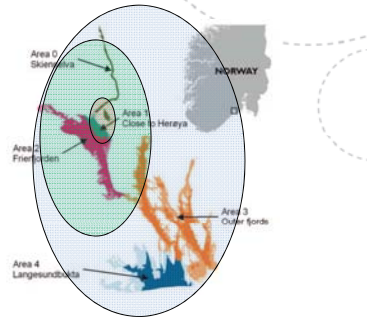


# How to end the thesis?



## Artikkel 5 - Multi-criterial value of information analysis (MCVoI)

- Value of information by reducing uncertainties
- Outranking SMAA approach
- Local, global and neutral weighing
- Weighing of different management methods
  - Risk assessments (RA)
  - Life cycle assessments (LCA)
  - Willingness to pay (WTP)
  - Cost





## Participation in ISO meetings, 2010

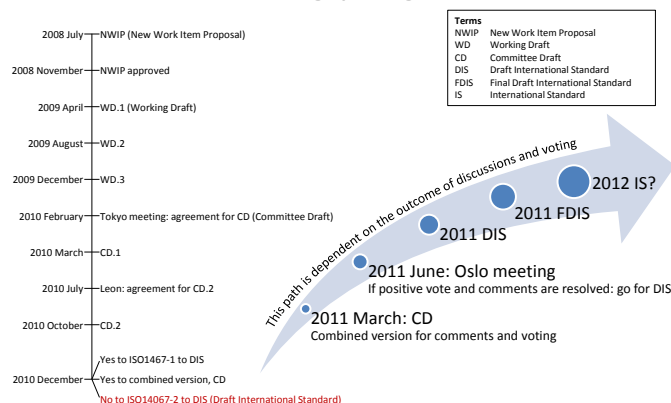
In 2010 Christofer Skaar participated in the development of the ISO 14067 standard for the quantification and communication of greenhouse gases (GHG) associated with products (goods and services) in the value or supply chain. The standard is being developed in the technical committee on environmental management (TC207), which is also responsible for all other standards in the ISO 14000-series.

Carbon footprints are emerging as a significant industry attempt to address the challenge of global warming. They are intended to be user-friendly, transparent and trustworthy. The draft standard follows the ISO standards on life cycle assessment (ISO 14040 and ISO 14044) in all major aspects, and requires the publication of a carbon footprint report with all relevant choices, assumptions and results included. To calculate a carbon footprint specific (from processes) and generic (from databases) data is needed. The contribution for each life cycle stage (e.g. transport or operation) must also be reported separately in the report. In cases where the Norwegian maritime industry has a superior environmental performance (with regards to CO<sub>2</sub> emissions), it is possible to document and report this in a transparent, independently verified and trustworthy manner. This could be a potential contribution to competitive advantage.

Participation in the development has consisted of taking part in national meetings in the Norwegian mirror committee, commenting on the draft standards, as well as taking part in one international meeting in Leon, Mexico in July 2010. In the international meeting the entire TC207 was gathered, making it possible to be updated on other standards relevant for the Norwegian maritime industry, specifically the progress of the ISO 14046 on water footprint of products and ISO 14045 on eco-efficiency assessment on product life cycles. The two primary purposes of taking part in the standard development have been to 1) gather information on the ongoing processes and 2) influence the standard to ensure that there are no loopholes that can be taken advantage of in order to report a lower carbon footprint than the actual carbon footprint (i.e. secure a scientific and not political result). Furthermore, a large international contact network has been another outcome. Delegates to the meetings are from all parts of the world, and represent industry, academia, governments and NGOs.

In January 2011 Christofer Skaar also participated in a meeting in Trieste, Italy. The purpose of this meeting was solely to address the ISO 14067. Progress was (seemingly) made in this meeting, and a joint version of the standard will be discussed as a Committee Draft (CD) in spring 2011 (previously it was separated into two parts, quantification and communication). A commenting and voting period in advance of the next meeting (June 2011 in Oslo, Norway) will decide if the standard is taken to the level of Draft International Standard (DIS). If the vote in Oslo is positive the standard could potentially be an International Standard (IS) by spring 2011. The history and potential road ahead of the standard is shown below.

## Working progress



## ISO 14067 Greenhouse gas management in the value or supply chain

Christofer Skaar  
Department of Industrial Economics and Technology Management

## ISO 14067

- International standard for the quantification and communication of greenhouse gases (GHG) associated with products (goods and services)
- Standard is not publicly available, earliest publication in 2012
- From the beginning the idea was to have two standards
  - ISO 14067-1 Quantification
  - ISO 14067-2 Communication
- Now a combined version is the goal (main reason: cross-cutting issues caused inconsistencies)
- Related ISO standards
  - ISO 14040 and ISO 14044, Life Cycle Assessment
  - ISO 14020 series on environmental labels and declarations
    - ISO 14021 Type II, self-declared environmental claims
    - ISO 14024 Type I, environmental labels
    - ISO 14025 Type III, environmental declarations
  - ISO 14065 and ISO 14066 on validation and verification related to GHG

## Norwegian goals for ISO 14067

- The standard should
  - contribute to national goals, both for environmental and trade
  - be an effective market tool for reducing products' carbon footprint
  - be used to compare products when purchasing
  - foster equal conditions of competition, nationally and internationally
  - be broadly applicable
  - be possible to implement quickly at a large scale, without driving prices up unnecessarily

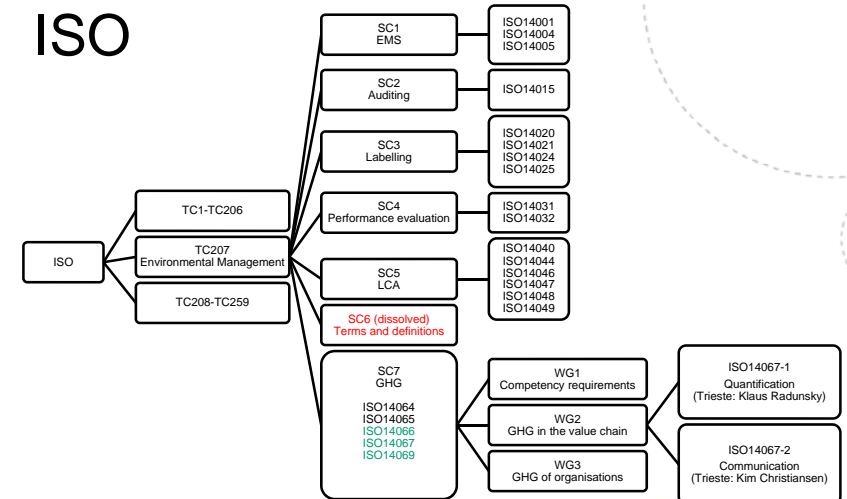
## ISO 14067 in relation to other standards

- Two competing standards (both are available on the market, ISO is not)
  - **PAS 2050** (British Standards)
  - **GHG Protocol Product Standard** (WRI/WBCSD)
- All deal with quantification and reporting, but
  - ISO includes communication requirements
  - PAS2050 has an additional code of good practice (developed by Carbon Trust)
- Main differences from PAS2050
  - PAS does not allow for consequential LCA
  - PAS has a 100 year time period from the formation of the product and allows for carbon storage in products (i.e. delayed emissions)
- Main differences from GHGP
  - GHGP is not intended for product comparison
  - Does not allow for consequential LCA
- Overall similarities, all three
  - Main principles, system boundaries, partial life cycle allowed, offsetting not allowed

# ISO

- ISO 14067 is being developed by **ISO/TC 207/SC 7/WG 2**
- ISO: International Organization for Standardisation
- TC 207
  - Technical committee 207 on Environmental Management (est. 1993)
  - Scope is to standardise in the field of environmental management tools and systems
  - Management focus, not performance focus (i.e. continual improvement)
- SC 7 (SC 5 is life cycle assessment, i.e. ISO 14040 and ISO 14044)
  - Sub committee 7 on Greenhouse Gas Management and Related Activities
  - Examples of other working groups:
    - SC 1 Environmental Management Systems (EMS)
    - SC 5 Life Cycle Assessment (LCA)
- WG 2
  - GHG management in the value or supply chain
- (WG 3
  - Carbon footprint of organisations)

# ISO



## Working progress



## Status, January 2011

- Voting before Trieste gave consensus to move ahead to Draft International Standard (DIS) for part 1 but not for part 2
- Trieste meeting in January 2011
  - Next step is the CD of combined version by March/April 2011
  - Almost 1500 comments received on CD.2 (50/50 on part 1 and part 2)
  - All comments were addressed (in smaller groups, plenum not possible)
  - Agreement to continue with combined version (as CD, not as DIS)
  - Still a number of issues with no consensus
    - Product Category Requirements (or similar), needed in quantification and in communication
    - Programme operator requirements (if needed), for communicating to certain parties. Example debate issues (see later slides for more info):
      - What is a programme?
      - What is an operator?
      - What are the requirements?
      - When are the requirements needed?
      - What is communication?
      - What are certain parties?
      - When is it a shall and when is it a should?

## Status, January 2011

- Consumer organisations in Europe have raised repeated objection to the standard
  - Single issue, not broad enough (prefer multi-criteria labels with performance requirements, e.g. Nordic Swan and EU Flower)
  - Allowing self-declared claims is a loophole that can be used to mislead consumers
- At the Trieste meeting a large delegation from the Middle East and Africa raised their concerns about CFP potentially being a trade barrier
  - Higher carbon footprint because of (air) transport
  - Higher carbon footprint because of local energy infrastructure (which is outside company control)
  - High costs associated with performing analysis and getting verification, especially for small and medium sized companies
  - Also: UNFCCC should be used instead of IPCC
- Most active parties at meeting and in comments on the drafts (my observation, random order):
  - Norway/Sweden, Japan, USA, Italy, UK, consumer org.
  - China, India, Canada

## Major cross-cutting issues

- Terminology (CF, CFP, PCR, PGR, CF-PCR, CF-PGR, CFP-PCR etc etc)
- Product Category Requirements
  - Agreement that the standard in most instances need further specifications, dependent on the type of product. These requirements are mentioned in both parts, but sometimes by different names and sometimes not referring to each other (inconsistency)
  - Main issues for debate
    - Who is responsible for developing the requirements
    - Agreement that existing requirements should be used when applicable, but no agreement on 'applicable'
    - Publication and management of requirements
    - What should the name be? (indeed...)
- What must be included in the total carbon footprint?
  - Term used now is "documented and reported separately"
  - Also relevant for communication, but must be resolved in quantification
- Connection to other ISO standards
  - Stand alone standard vs normative references to other standards

## Issues: Quantification

- Documented/reported separately:
  - Fossil and biogenic carbon
  - Land use change, direct (annex from PAS2050 removed from standard, no longer reference year and time periods mentioned)
  - Land use change, indirect: when a agreed-upon international methodology has been developed
  - Soil carbon change: use in absence of land use change and when relevant (refers to IPCC and PCR/CF-PCR/CF programme rules)
  - Carbon storage in products: reported separately, not to be included in total (exact wording not yet available)
  - Carbon capture and storage (CSS): included, but also documented separately
  - Aircraft emissions: reported separately (expressed strong wish from many developing countries to not include in total)
- Note: Offsetting not to be included.

## Issues: Quantification

- Documented separately: does this mean it is included in the total or that it is not? Still unclear, due to differences in phrasing.
- Notice: not necessarily a difference between 'documented' and 'reported'
- Treatment of electricity
  - Double counting (within product system or between product systems, latter probably not to be addressed)
  - Guarantees of origin and green certificates (especially those decoupled from electricity mix)
- Recycling rules (need to be harmonised with PAS2050 and GHGP as well)

## Issues: Communication

- 5 methods of communication
  - CF report
  - CF performance tracking report (nb: this is not a reduction claim)
  - CF claim
  - CF label
  - CF declaration
- 3 types of communication (not fully worked out yet)
  - Business to business (B2B) (internal in value chain)
  - Business to 'interested parties' (all public B2B is included)
  - Business to consumer
- Verification: independent, 3rd party or critical review
- Requirements to have a programme operator ( but in which circumstances?)

## Issues: CFP communication

	Report	Perf. report	Claim	Label	Declaration
B2B	Verification optional CFP-PCR and programme optional				
B2? ? = interested parties except consumers, e.g. shareholders, NGOs	Independent CFP-PCR? programme optional	Independent CFP-PCR? programme optional	3 <sup>rd</sup> party CFP-PCR programme optional?	3 <sup>rd</sup> party CFP-PCR & programme	3 <sup>rd</sup> party CFP-PCR & programme
B2C	3 <sup>rd</sup> party	3 <sup>rd</sup> party	3 <sup>rd</sup> party	3 <sup>rd</sup> party	3 <sup>rd</sup> party
CFP-PCR and programme required for all communication to consumers					

This table also covers partial life cycles. The table is still being discussed, especially B2?

## General observations

- Main reason for developing standard
  - Industry is demanding it
  - There are a number of approaches already in use (in addition to PAS2050 and GHGP), so if this is commonly used there should be a good standard for doing carbon footprinting
  - It connects to concerns on global warming
- Absurdness: carbon footprinting (and soon water footprinting) is almost as extensive as an ordinary LCA. Why not do the small additional effort and get a broader environmental analysis?
- **We should broaden LCA, not narrow it down to single issues.**

# Report from the conference on traceability of eco-labeled fish

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*North Atlantic House, Copenhagen 20.01.2011*

## **Background:**

The Norwegian ministry of fisheries and coastal affairs acknowledge the topic of sustainability in the marine and aquaculture sector and wish therefore to have developed product category rules (PCR) for fish and fish-products. A preliminary research study has been carried through by Standard Norway, appointed by the Norwegian Ministry of Fisheries and Coastal Affairs. The study mapped the domain of eco labels and looked at the possibilities for establishing a PCR. As a follow up of this, a new project study is under way in order to make concrete the findings of the preliminary study and develop the standard.

## **Relevance to IGLO-MP 2020:**

The Environmental Management and Corporate Social Responsibility working group at IØT has through many years gained experience on environmental management and other related issues for marine, aquaculture and maritime industry. The focus on IGLO MP 2020 is naturally on the Maritime industry, with shipyards, designers, sub-suppliers and ship owners. Here WP 5 has put down a great effort 2010 on mapping the drives and possibilities for using LCA in the maritime industry. One of the drives for such work is the demand of LCA data from fishing vessels and operation that a PCR for making type 3 EPDs on fish and fish-products will induce. The environmental performance of the fish products is dependent on the environmental performance of the equipment used in order to catch and process the fish. There are now many eco-labels that are considering preservation of the fish stock and sustainable catching methods, but little is done yet on making LCA results accessible for the end user. This was however heavily discussed and the conference participators were nearly in unison on that this will become more and more relevant.

WP 5 researchers have participated before in developing a PCR for wild-caught fish and will therefore be a natural part in making the standard for PCR generation on fish and the development of the standards themselves. The conference on traceability of eco-labeled fish served as an excellent venue to get the state of the art in the field of reporting and documenting environmental issues within marine and aquaculture industry as well as future trends and expectations where pointed out. The value of dialogue with peers is also of great value and possibilities for further cooperation on LCA for fish were also discussed. Great interest was shown for the work in IGLO MP 2020 and some contact information and links to work was exchanged. Sintef fisheries and aquaculture and the Swedish institute for food and biotechnology were among the most interested parties. The experiences and network from the conference will now become useful in developing the standard on PCR being for the Norwegian ministry of fisheries and coastal affairs. This work is at an early phase, but the outcome and further plans will be made available in the beginning of the year.

2011.11.02 - Børge A. Johansen (MSc.)

# Traceability of eco-labeled fish

Conferece: Copenhagen 20.01.2011

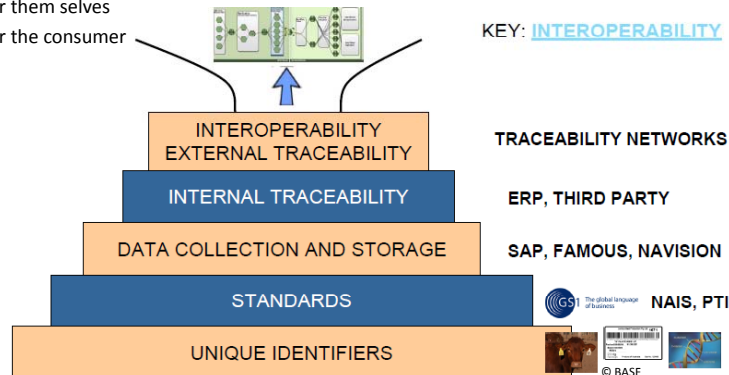


# Why participate?

- The Norwegian ministry of fisheries and coastal affairs wish to have developed product category rules for fish and fish-products. [Preliminary study is initiated.](#)
- Being able to document GHG-emissions in a life-cycle perspective is considered as a competitive advantage for the industry and it is therefore important to be in the frontier of the field.
- The Copenhagen conference gives a great overview of the field of fish eco-labeling.

# Future of environmental labelling of seafood

- Traceability
  - The consumer must be able to get an overview of the product value chain in a simple and efficient way. Chain of custody.
  - This calls for great efforts and challenges for eco-labels and producers in order to make this information accessible.
    - For them selves
    - For the consumer



# MSC – Marine Stewardship Council



- Adding value to sustainable products with focus on preventing overexploitation of marine ecosystems.
- 7300+ labeled products.
- Auditing & Certification
- Traceback programme
- [www.msc.org](http://www.msc.org)

# KRAV

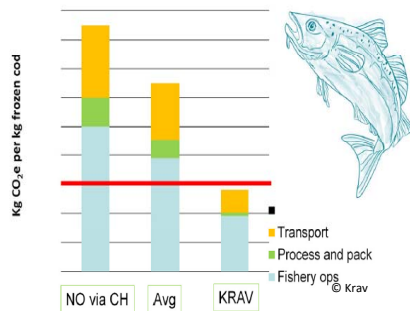
- The KRAV eco-label is to ensure consumers good environmental performance, animal welfare, health and social responsibility.



© Krav

Life Cycle Assessment of line fished cod. Less impact from KRAV-certified because KRAV demands e.g.:

- Sustainable stocks
- Selective gear
- Fuel use restrictions
- No synthetic cooling agents



# The Sustainability Consortium

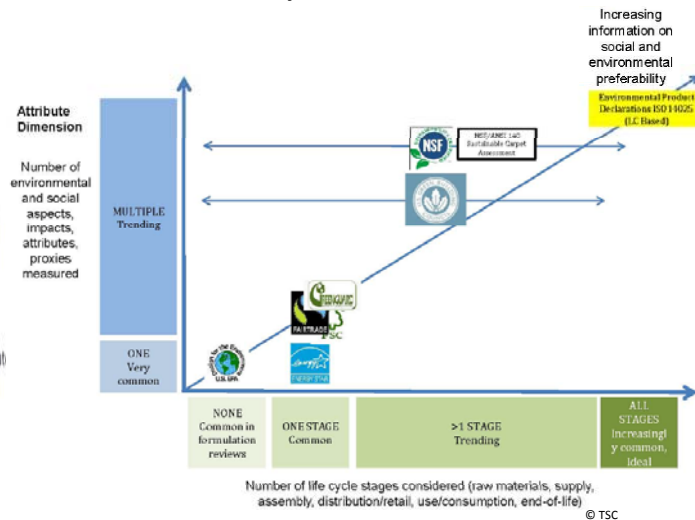
- The TSC is developing a Sustainability Product Declaration program as defined by ISO14025.



# The Sustainability Consortium

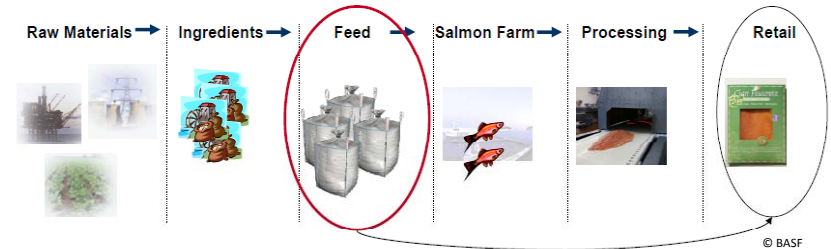
## What is an SMRS?

- Sustainability Measurement and Reporting Standard based on LCA
- Establishes a foundation that allows business to business, business to retail and business to consumer reporting.
- It addresses the questions:
  - What sustainability measures or attributes should be captured?
  - How should they be measured?
  - How should they be reported?



# BASF: S.E.T & ProSustain

- Examples of sustainability claims of retailers:
  - Tesco (UK) labels CO<sub>2</sub> footprint on some consumer goods
  - Casino (FR) prints CO<sub>2</sub> values on customer receipts for all products shopped
  - WallMart (US) wants to install sustainability indices with their consumer goods



**Take out:** If fish feed becomes more sustainable, this will have a major impact on the end product's sustainability.

**Focus:** How to make fish feed more sustainable?



## General remarks from the conference

- Consumers are trusting Eco-Labels, but do not necessarily know what they promise or stand for.
- Amount of eco-labeled products are increasing.
- Traceability is one of the key requirements for eco-labels. Especially regarding food.
- Traceability is a challenge for producers as they need to
  - 1) have a full overview of their value chain
  - 2) make this available to the consumer
  - 3) verify & audit the information (3rd party?)
  - Standards and frameworks re helpful instruments for this
  - New technology could aid producers in reaching this goal.
- Increased focus on the use of LCA.

## Reference & links:

- Slides from conference:
  - <http://www.tracefood.org/index.php/International:Workshop190110>
- Web pages:
  - [www.krav.se](http://www.krav.se)
  - [www.tracefood.org](http://www.tracefood.org)
  - [www.msc.org](http://www.msc.org)
  - [www.fsc.org](http://www.fsc.org)
  - [www.utzcertified.org](http://www.utzcertified.org)
  - [www.sustainabilityconsortium.org](http://www.sustainabilityconsortium.org)
  - [www.tracetracker.com](http://www.tracetracker.com)
  - [www.factlines.com](http://www.factlines.com)
  - [www.biosustain.no](http://www.biosustain.no)
  - <http://www.nutrition.basf.com/SETInitiative/Home.aspx>
  - <http://www.dnv.com/services/certification/products/Prosustain/>