

Identification and traceability: Aquaculture and aquaculture products

OIE International Conference on Animal Identification
and Traceability
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Eskil Forås
SINTEF Fisheries and aquaculture

Traceability in Norwegian fish farming



Driving forces of traceability in aquaculture

- Retailers and HORECA requests more product information
- Production optimization and quality control to build competitive power

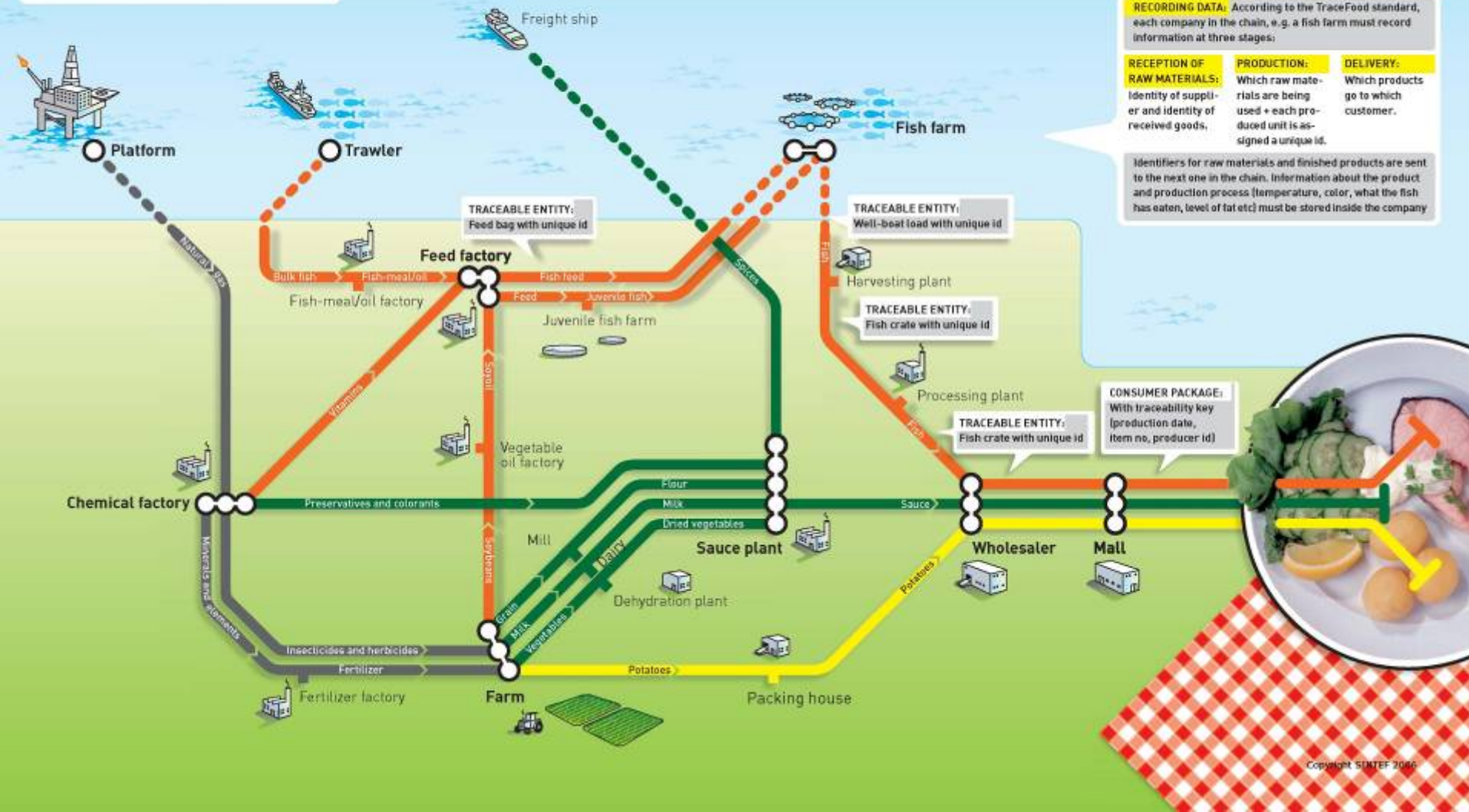


SYSTEM FOR TRACING FOOD:

- Your dinner has been through a complex value chain before it ends up on your plate - the graph shows this.
- SINTEF, together with Fiskeriforsknings, has participated in creating the «TraceFish» standard, which describes how an efficient traceability system for fish can be designed. An example is highlighted along the salmon chain.
- The TraceFish standard builds on a general purpose method called «TraceFood» that can be applied to any type of food.

Farmed fish production chain

- Salmon chain
- Sauce chain
- Potato chain
- Basic chain



RECORDING DATA: According to the TraceFood standard, each company in the chain, e.g. a fish farm must record information at three stages:

RECEPTION OF RAW MATERIALS:	PRODUCTION:	DELIVERY:
Identity of supplier and identity of received goods.	Which raw materials are being used + each produced unit is assigned a unique id.	Which products go to which customer.

Identifiers for raw materials and finished products are sent to the next one in the chain. Information about the product and production process (temperature, color, what the fish has eaten, level of fat etc) must be stored inside the company

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Traceable units in production



Unique identifications of traceable units

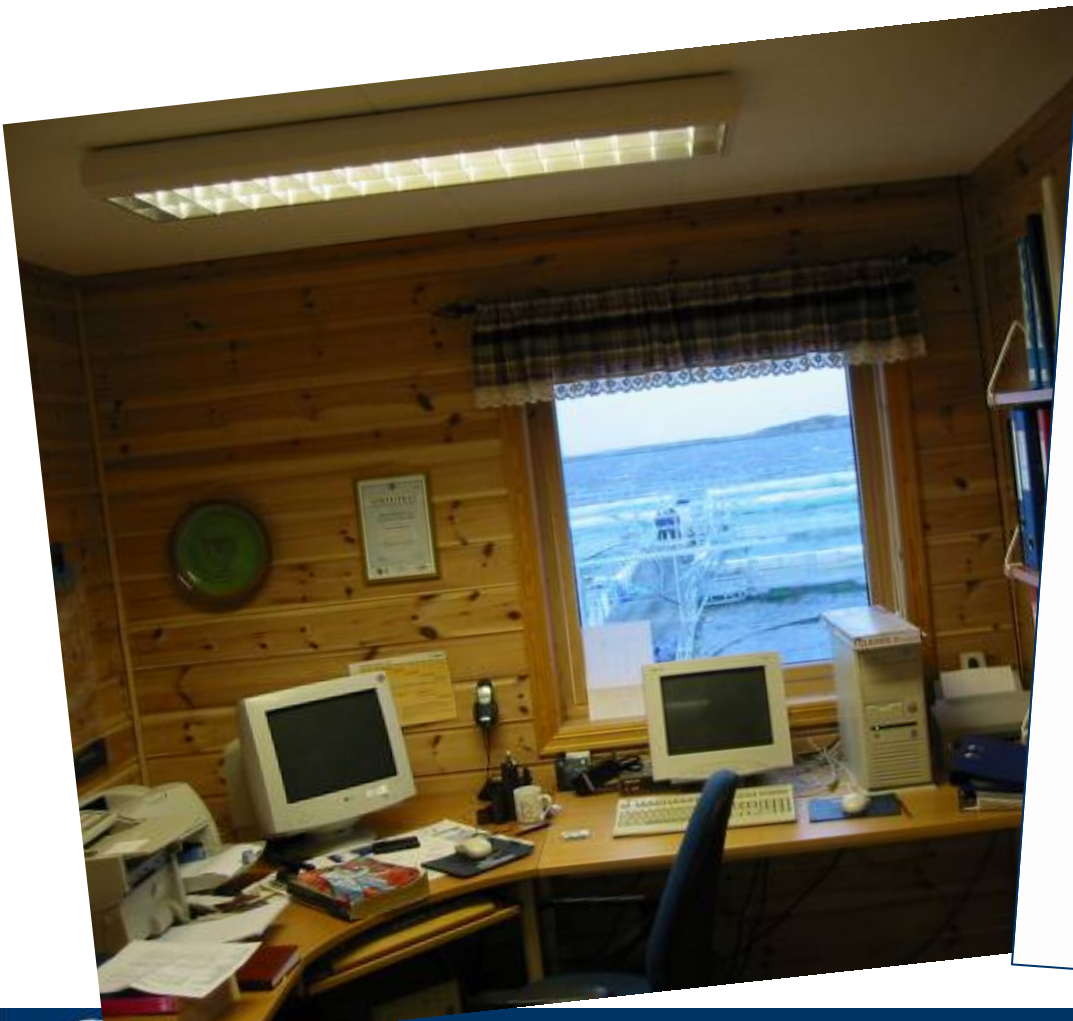
- Fish farm location number (official license numbers)
- Fish group numbers (per cage)



- Individual identification of fish is only implemented for some processed product




Recording of traceability and production information



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Superior marine report



Product information

Superior marine report

Batch ID: 06AC 001

Delivered from AKVA Seawater AS

Address: _____
 ZIP code: _____
 Postal address: _____

Org. No: 5528866
 Profile: _____
 Fax: _____

General information

Department: AKVA s/e 02	Species: Atlantic salmon	# of fish: 48 420
Unit: 0105	Broodstock: AquaGen	Avg. weight: 4 437.8 g
Permit #: _____	Fish type: 1-Year	Biomass: 214 945 Kg
Fish group #: 06AC 001		

Harvest

First date of harvest: 23. Mar. 2008
 Processing plant: AKVA group

Density: 18 kg/m³
 Temperature: 11.2 °C

Last day of landing: 01. Aug. 2007

Input of fry

Input number: 0601_0004
 Date: 20. May. 2005

Input name: BUNES 20-06, BUNES M/s
 Generation: 2005

Fish supplier: AKVA Freshwater AS: Outdoors
 Hatchad: Outdoors

of fish: 55 522
 Avg. weight: 124.5 g
 Biomass: 6 889 Kg

Vaccinations

Start date	End date	Type of vaccine
02. Nov. 2005	11. Dec. 2005	Azphaject 6-2

Treatments

No registrations

Size distribution

Weight class (g)	Biomass (kg)	%
0-1 000	2.2	0
1 000-2 000	259.2	0
2 000-3 000	9 561.8	3
3 000-4 000	45 420	21
4 000-5 000	92 630.6	43
5 000-6 000	58 037.1	27
6 000-7 000	11 275.6	5
7 000-8 000	656.7	0

Traceable units after harvesting

- All fish from one fish group that are harvested at one day are identified as a unique batch
- Each box of fish is uniquely identified (GS1)



Traceable units in transport and processing

- Transport cargo identified at pallet level (GS1)
- Processing batches identified at production day level
- Trade items are identified at box level (GS1)

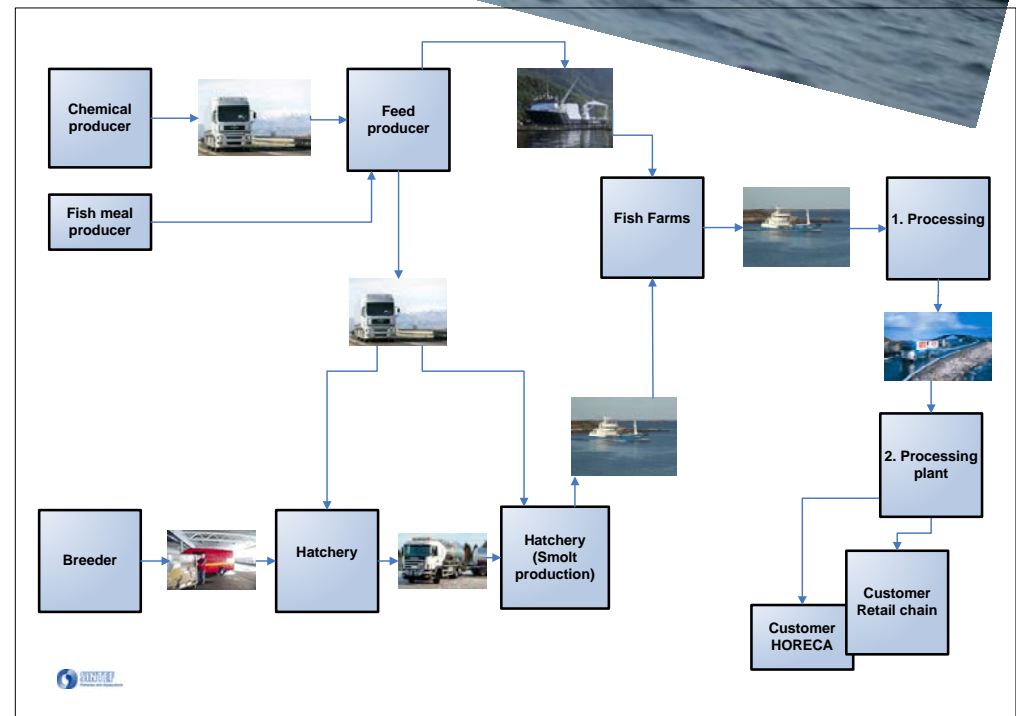


Recall tests

- Recall tests made in 2005 indicated that 60% of farmed product could be traced back to origin (fish farm)



- A new recall test in 2008 (www.esporing.no) show that all farmed fish products could be traced from Norwegian retailers back to broodstock



Present challenges

- The implementation of a 'whole chain' traceability software system involving multiple food business operators.
 - Eight criterions are identified to be important for success
- Standardisation of traceability information exchange between supply chain partners



- (2004-2009) European project focusing on establishing **Good Traceability Practice** (www.tracefood.org)
- eSporing (2007-2010) Norwegian project focusing on establishing a national system for electronic chain traceability. (www.esporing.no)

Experiences from the fish farming traceability

- When establishing traceability
 - Start with easy-to-follow batches (large batch sizes)
 - Be sure to record essential relations between batches
 - Paper files are sufficient (but slower)
- You can achieve 100% traceability with only a minimum of information recording