The Discardless **DMS toolbox** (Discard Mitigation Strategies ToolBox) aims to gather, synthesize and disseminate the **knowledge** produced by the DiscardLess project in a single repository freely accessible online.

http://www.discardless.eu/tools
what are the discards?

The fishermen story

- What factors cause you to discard fish?
- Change in gears
- Change in where and when to fish
- What kind of technical method do you use to avoid unwanted catches?
- What kind of tactical methods do you use to avoid unwanted catches?
what are the discards?

The fishermen story

What kind of technical method do you use to avoid unwanted catches?

All trawlers:
- For French fishes trawl mesh is okay and "cannot make more effort".
- Individual fishes consider that they cannot improve their selectivity, but see next row.

Artisanal trawlers via Selectfish project:
Tested square mesh panel (80, 100 and 115mm) of different length (1 or 2m) and also a selective grid were tested.
what are the discards?

The fishermen story
The « available data » story
what are the discards?

The fishermen story

The « available data » story
How to avoid Discards

using a Flip Flap netting grid

to reduce the capture of cod, haddock and whiting in a Nephrops trawl

Target species:
Nephrops and mixed whitefish and flatfish species

Area, Vessel
The trials took place in the North Sea (ICES IVa) Fladen Grounds and the Moray Firth on board the Sardonyx II (BF 206) (18m, 373kW)

Gear type:
twin trawl

Gear modification
The Flip Flap gear has a 200mm vertical square mesh flapper panel in the extension. The top half of this panel is attached to the extension and the bottom half is weighted along its perimeter, but free to ‘flap’. There is a hole cut out of the top sheet in front of the vertical panel to facilitate the escape of roundfish.
How to avoid Discards

Figure 6. Interpolated maps identifying areas with consistent levels of CPUE for above MCRS cod over multiple years (2010-2015) for each quarter of the year.
How to avoid Discards

Selectivity using news gears

Selectivity using new strategies
And when the Fish are onboard?

Small coastal vessels

10-15 meter hook & line coastal vessels (N-Atlantic)

Main target catch
- Cod

Activity
Fishing trip: 1 day
Average landings: 2-4 tons

Function
- Rapid bleeding of the catch before gutting
- Cooling of the catch in a rotary cooling tank
- The sorting of catches takes place down in the hold

Benefits
- Whiter fillets
- Improved quality
- Extended shelf life

Upper deck: On left, batch related bleeding tank and on right is rotary cooling tank

Lower deck: Shows differently coloured boxes for storage
And when the Fish are onboard?

**Boat organization to mitigate wasting time**
And when the Fish are onboard?

**Product description**

Vitamin A is a group of fat-soluble substances that are found in animal products. Therefore, it is present in high concentrations in fish fatty tissues. Vitamin D is present in fish oil. Vitamin dietary sources are eggs, fish, and dairy products. It is also synthesized in the skin through a non-enzymatic reaction activated by the sunlight. EFSA has confirmed that clear health benefits have been established for the dietary intake of vitamin A in contributing to:

- normal cell differentiation;
- a normal function of the immune system;
- the maintenance of normal skin and mucous membranes;
- the maintenance of normal vision;
- normal iron metabolism.

While the nutrition claims for omega 3 fatty acids and vitamin D are:

- Vitamin D supports normal bones
- EPA & DHA support normal heart function.
- DHA supports the maintenance of normal vision
- DHA supports normal brain function.
And when the Fish are onboard?

Boat organization to mitigate wasting time

Discards are landed, and now!!!