

SW Marine Ecosystems 2016

Fisheries status in the Channel & the impacts of the reformed (2013) Common Fisheries Policy:

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“For those in peril on the seas!”



- Discards: A 'discard' is any type of marine animal caught during fishing operations which is thrown back into the ocean, dead or alive. Discarding of dead and dying fish is wasteful, is bad for fish stocks and costly for fishermen.
- By-catch: Fish other than the target species that are caught incidental to the harvest of the primary species. May be commercial or charismatic.
- Choke species: A low quota species, which, if reached, would lead to vessels having to tie up even if they still had quota for other species
- Sustainability is the capacity to endure. Characteristic of resources that are managed so that, the natural capital stock is non-declining through time, while production opportunities are maintained for the future.
- Selectivity: ability to target and capture fish by size and species during harvesting operations

Why discard?

- There are a number of reasons why discarding occurs. These include:
- fishermen accidentally catch fish for which they do not have quota and are therefore unable to land and sell
- catching fish which are damaged or of species that are not profitable to land
- catching undersize fish which are not legally permitted to be landed and sold

Producer Organisations: Obligations under the new CFP

- New Objectives timetabled to be delivered:
- Good condition of resources MSY2015
- Good condition of marine environment GES2020
- Competitive against alternative proteins
- Profitable for future investments
- Socially allocated opportunities that recognise small-scale & low impact
- Not wasteful. End discards.
- Social & economic wellbeing of fishing communities is at the core.

Industry did not wait for the ban!

- We have been working with CEFAS, SeaFish & Defra on several initiatives including:
- Developing the right incentives and tools to avoid unwanted fish, and know how to deal with them if accidentally caught
- Piloting fully documented catch quota management trials to improve fishing nets and gears to avoid unwanted catches of fish, including Project 50% when scientists and fishermen worked together to reduced discards in the Brixham trawl fleet by 52%
- Assisting with the fishing for the market project
- Working in partnerships to reduce the effects of some fishing activities on seabed habitats and species. Roller Ball & other Projects

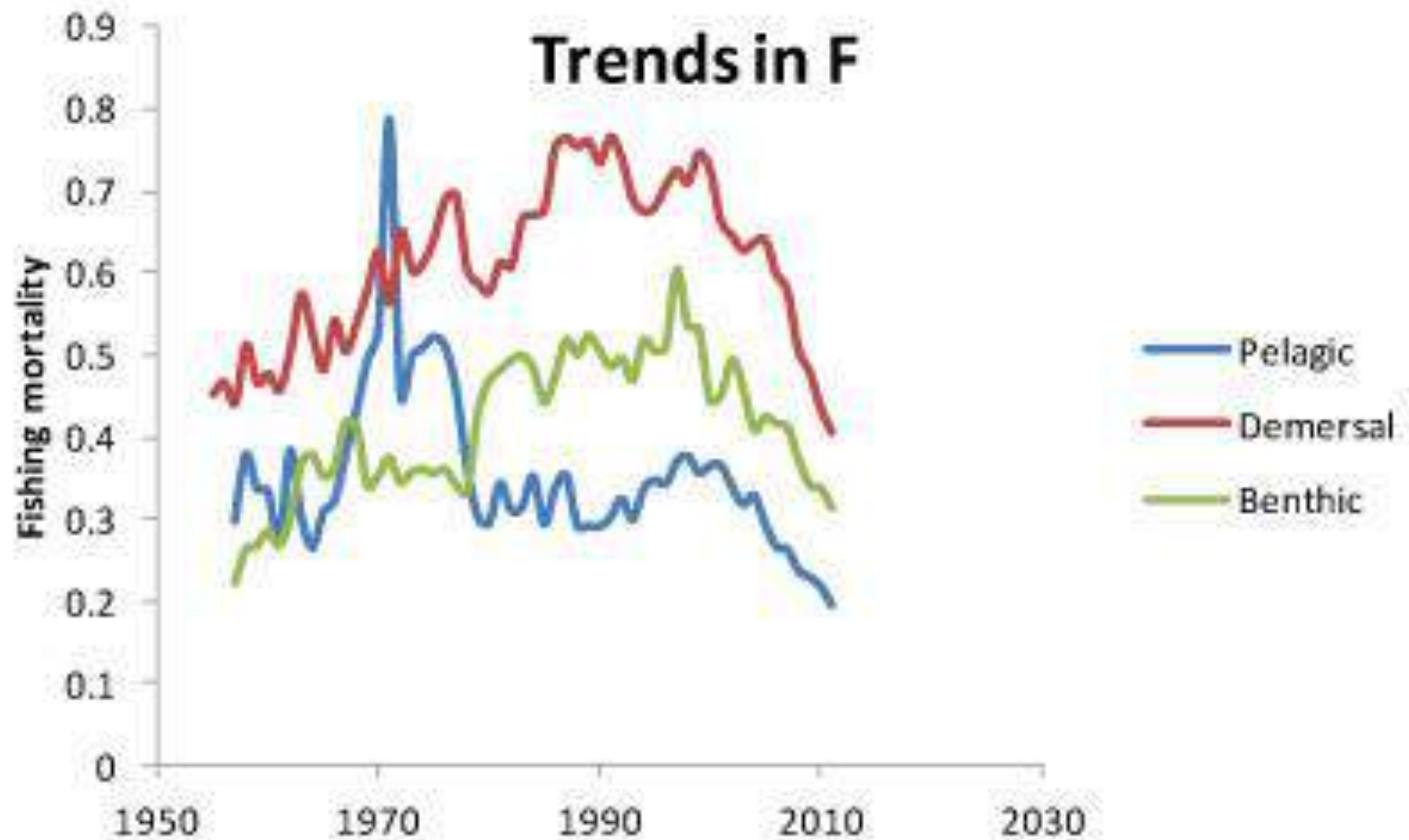
Between 2002 and 2012 the English fleet reduced its discards by around 50%. This illustrates that substantial progress was already being made to reduce discards in many fleets before the clamour for a “discard ban” led to the current EU Common Fisheries Policy and the...

“Landings Obligation”.

Trends in Fishing Mortality “F”

- In 2003, ICES warned that Sole 7e was on verge of stock collapse if nothing was done about it!
- The following graphic illustrates that, since implementation of the 2002 reforms of the CFP, the overwhelming trend in Fishing Mortality (F) has been downward in all sectors and in all regional seas fisheries.
- There is every reason to be confident that Fmsy will be achieved for targeted “Pressure” fish stocks by 2020.

Trends in Fishing Mortality “F”

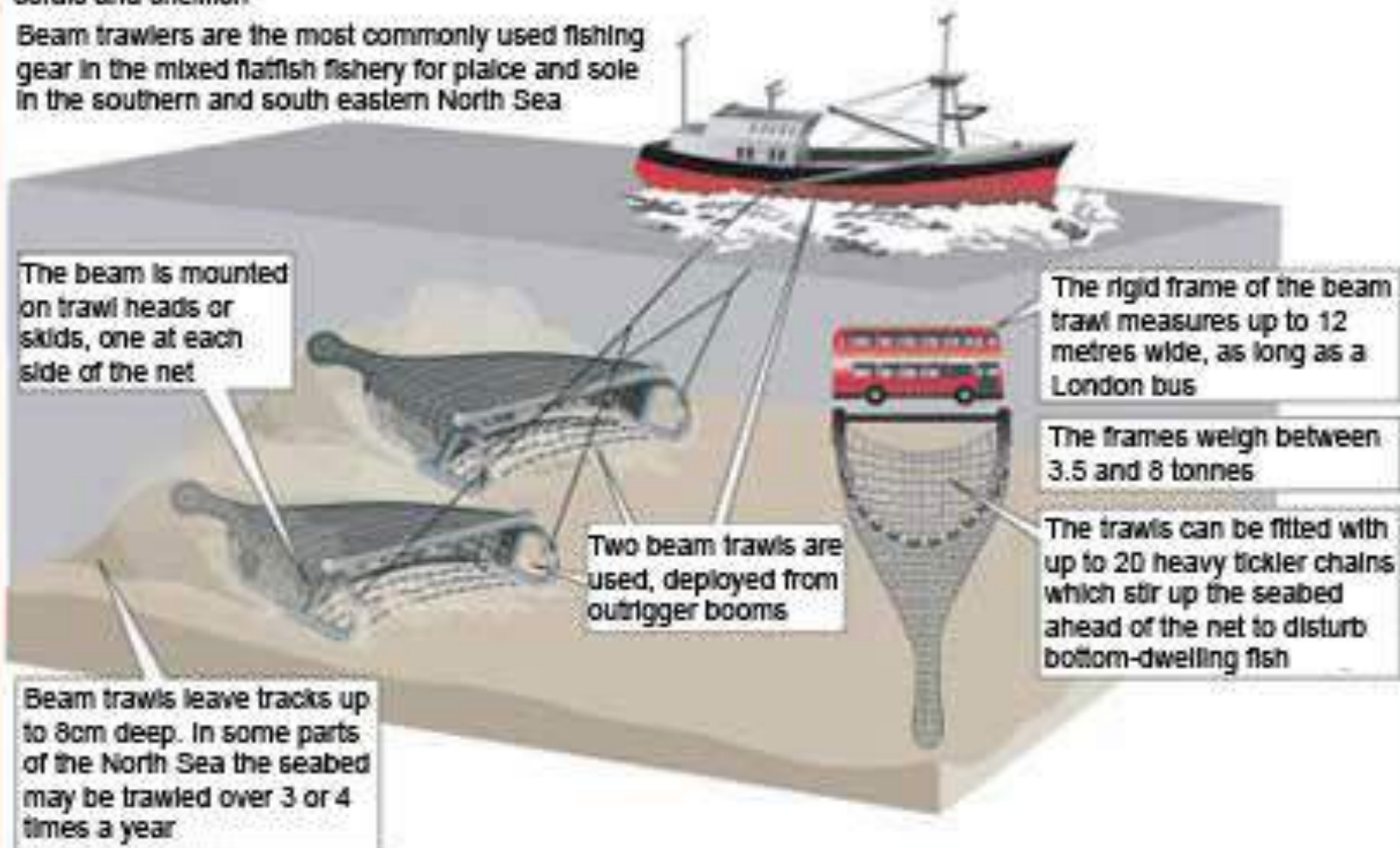


CFP 2013: Fixing what was already being fixed?

- The changes made to the CFP in 2013 amended various regulations in 4 policy areas involving:
 - 1. Fisheries management
 - 2. International policy
 - 3. Market & trade policy
 - 4. EMFF funding
- **Within Fisheries management, the wasteful practices of discarding “quota” fish are to be ended by 2019.**

A beam trawl is a trawl where the mouth of the trawl is held open by a metal beam. This is dragged along the ocean floor scooping up everything in its path from fish to cold water corals and shellfish

Beam trawlers are the most commonly used fishing gear in the mixed flatfish fishery for plaice and sole in the southern and south eastern North Sea



Beam Trawlers & Official Discards

- As early as 2003/4 work by CEFAS with John Hingley on Jacoba BM77 (Brixham) with Square Mesh Panels led to
- Wider trials on 7 Brixham beam trawlers with Square Mesh Panels in 2004, led to discards sampling analysis
- Concluded: “Fishers are not always in a position to reduce discards...However, the growing climate of adverse public opinion on discarding may well force that situation to change”....CEFAS Enever, Revill & Grant 2006 Discarding in ICES sub-area VII. Led to
- Beam Trawler Clean Fishing Competition 2006 £12,000 1st Prize, won by Brixham Skipper Mike Sharp on Lady T Emiel. (As featured on “Gone Fishing” with Hugh F.W.)

Channel & West Sustainable Trawling Group (CWSTG)

- In 2007, the SWFPO, CFPO and IFL combined to form the CWSTG. Industry had recognised the need to take the steps to deal with the problems highlighted by lowest ever quotas and higher discards rates.
- Reputation of beam trawling was very low. The market was in jeopardy!
- Attitudes and practice had to change!
- Industry recognised the need to regain a good reputation for beam-trawlers to provide quality seafood caught sustainably.

Selective Gear Technology: Project 50% 2009

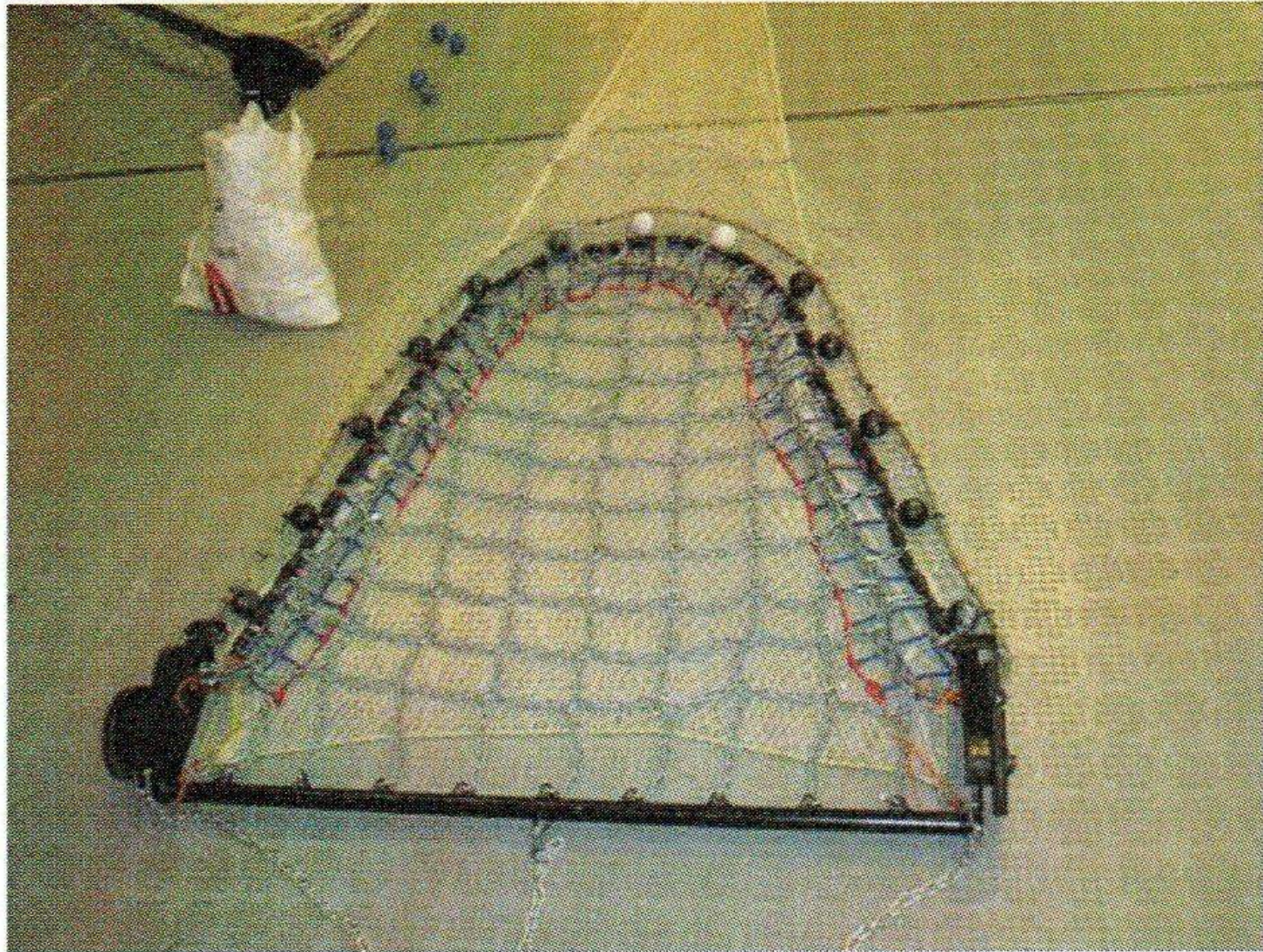
- Much discarding occurs because fishing gears are not selective enough. Selectivity work is ongoing to make fishing gear more selective so that bycatch and discards are reduced.
- Many fisheries are based on a mixture of species and fish that are not wanted can be caught inadvertently.
- **Project 50%:** Devon beam trawler crews tried to reduce discards by ambitious 50%.
- Working with net-makers, fishermen trialled their own new designs alongside standard trawls.
- Average discards reductions of 52% were recorded, and the most successful boat achieved 69% reduction.
- Social marketing techniques underpinned the strong collaborative approach between fishermen and scientists, helping the project to achieve the three pillars of sustainability: social, economic and environmental outcomes. The project has since been seen as an example of "best practice" and is being adopted in other UK fleets.

Selective Gear technology: Roller Ball concept 2012.

- The Rollerball net is another innovation trialled and tested in Brixham. Traditional beam trawlers seeking flatfish drag heavy gear along the sea bed, churning up the benthos and impacting what lies in their path.
- Rollerball rolls over the seabed on what look like beach-balls. It is believed to reduce impact damage and reduces drag by between 11 and 16%. There are hopes for further improvements. Cutting drag trims fuel bills and carbon-based emissions.



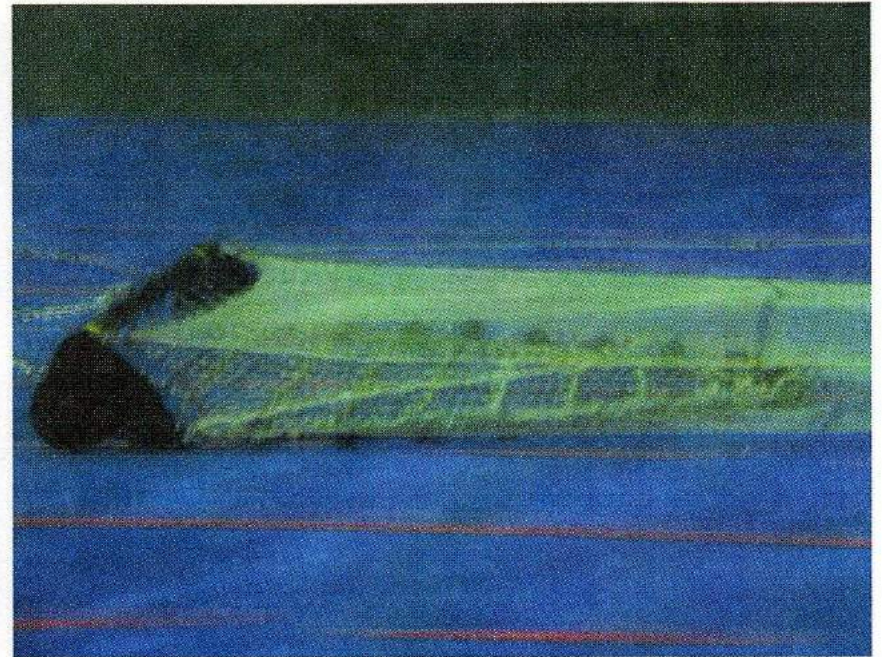
Rollerball & standard hopper ground gear



The model beam trawl



Concept Rollerball ground gear (model)



Model trawl being tested in the Flume tank



Complete concept ground gear and chain mat



Standard 'bosom' section

Roller Ball results:

- Standard gear weighed 3,700Kgs
- Roller Ball gear weighed 3,400Kgs
- On seabed “load cells” the weight was 600Kgs saving
- Catch showed 20% reduction of retained Soles across size range. Selectivity for Lemon Soles was improved 20%
- Fish discards reduced by 15% and benthos by 5%
- Fuel consumption reduced by 14% estimated.
- Continued use after trials improved Soles and other commercial species retention to equal Standard gear!

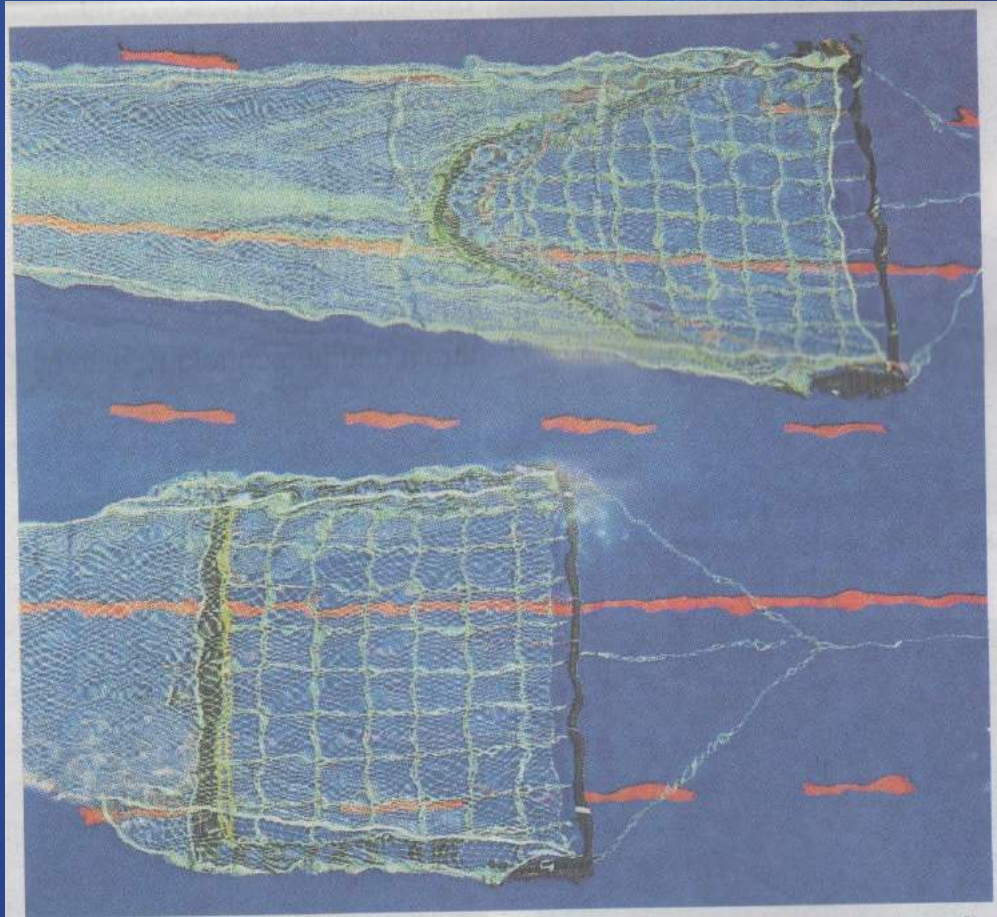
Catch Quota Trials Using REM

- Trials in 2013 for 9 Southwest Beam Trawlers fitted with Remote Electronic Monitoring (REM). Required to operate under a discard ban.
- Sole [ICES Area VIIE] and anglerfish [ICES Area VII]. Four also chose Megrin [ICES VII].
- Additional quota allocated as long as they didn't discard any of these – regardless of size.
- The main aims were to:
 - explore the implications of the landing obligation in this mixed demersal beam trawl fishery
 - investigate plaice discard levels by using REM verified self-reported data
 - continue to trial catch quota management of key demersal species
- Process involved 5% audit of REM data and CCTV footage.
- 9 vessels in the trial fished in similar pattern to the rest of the West Channel beam trawl fleet
- The results show low levels of discards of catch quota species, which is comparative to previous trials.
- Plaice discards were also monitored. There was a clear spatial pattern in plaice discards with the highest levels around the 12 nautical mile limit and decreasing further offshore. The results show that for many trips a landing obligation for plaice would have a low impact as very few plaice are discarded. The high levels of discards in the inshore grounds would impact a small number of vessels significantly in the absence of improved selectivity or avoidance behaviour.
- Overall, REM has been shown to be a cost-effective method of corroborating data reported by the fishing industry.

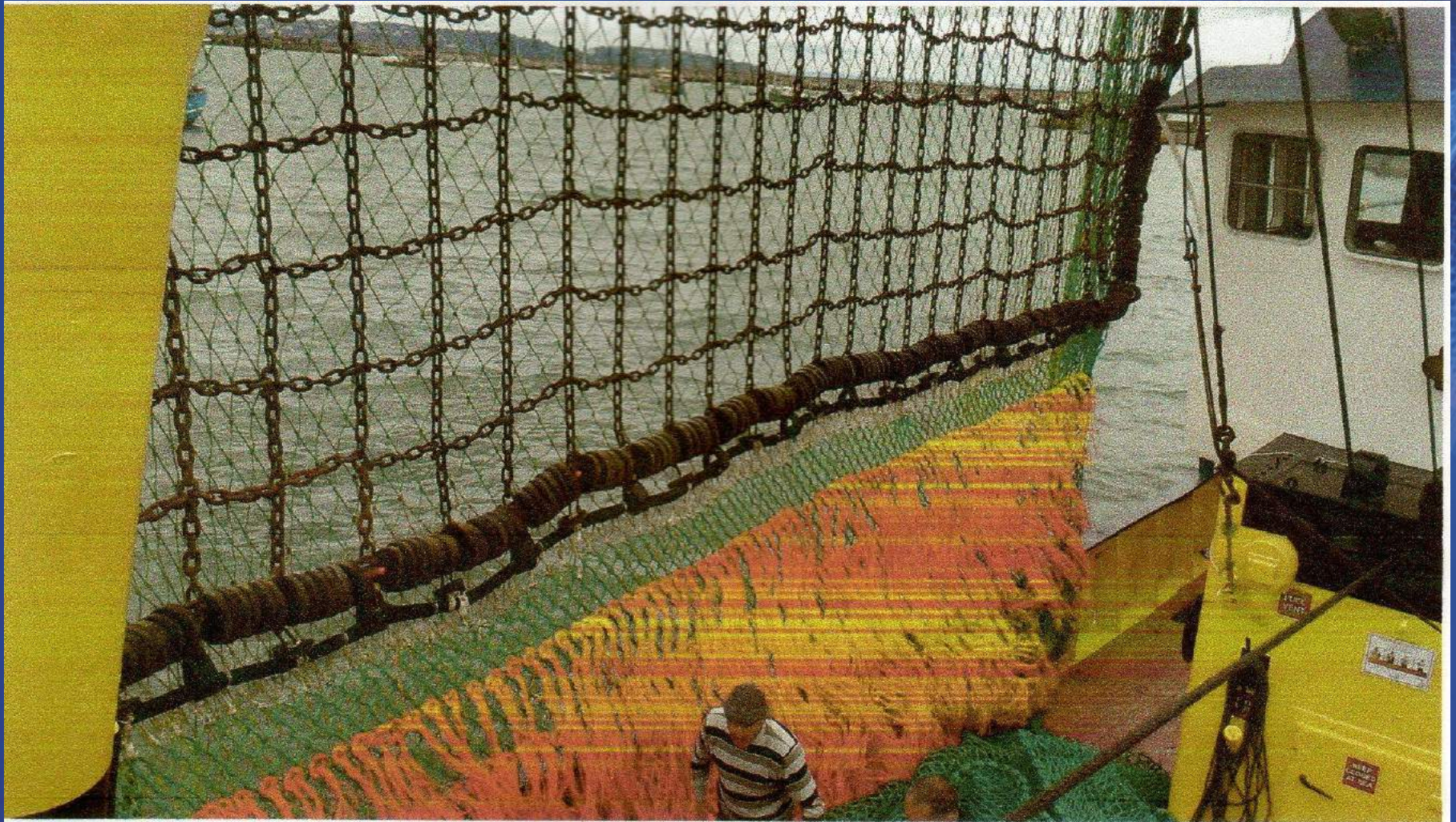
Square layout concept 2015:



Strong-arm Mike holds up a replica scale model of a conventional beam trawl before it was shot in the tank for comparison alongside the new design of square beam trawl featuring a full-width bosom to help reduce seabed impact and decrease unwanted by-catch of benthic species.



The new design is demonstrated alongside a conventional beam trawl.



Square Trawl with a 9m horizontal bosom section

Expression of Interest EMFF: Roller Ball on Square Layout 2016

- To build on Project 50%, Roller Ball & Square layout to meet Demersal Landing Obligations requirements while staying profitable.
- Refining designs to further reduce seabed impacts, improve fuel efficiency savings, further reduce discards of fish and benthos
- Remove potential “choke” species Cod & Haddock.