

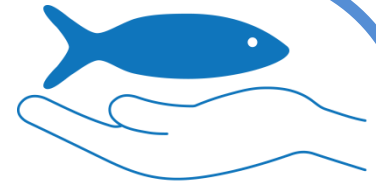
**WP5**

## **From deck to first sale**

***Leader: Jónas R. Viðarsson - MATIS***

**Participants:** DTU, MSS, MATIS, MAREL, SHIPCON/SkipaSyn, TRACE, AZTI, MI-CSAR

This project has received funding from the European Union's Horizon 2020 research and innovation action under grant agreement no.633680



**DiscardLess**

## **Stakeholders Conference**

***What can Science do to help with the Landing Obligation?***

***Working together to increase knowledge about discards and about the strategies to reduce them***

**FAO Headquarters, Rome,  
9-10 March 2017**

**Jónas R. Viðarsson**

**WP5**

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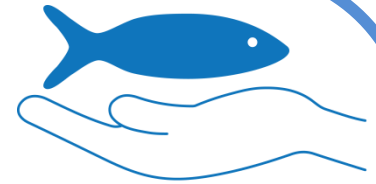
## **Onboard handling and control**

*What can be done onboard fishing vessels to meet the requirements of the Landing Obligation?*

## WP5

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## Lessons learned from other fisheries with experience from discard bans

- **Iceland, Norway, Faroe Islands:** regulations and setup that creates incentives to land all catches
- **Canada and US:** large coverage of onboard observers and fleet communication programs
- **New Zealand:** Extremely high punishment if caught discarding

## WP5

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## Lessons learned from other fisheries with experience from discard bans

- Flexibility in quota transfers
- ITQ
- Ability to maximize value of all catches (no special clause for MCRS)
- MCRS landings not counted fully against quota
- Possibility to land choke species free from quota if the landing value is forfeited (allocated to R&D in the sector)
- IT solutions / fleet communication (avoidance of “hotspots”)
- Temporary and long-term area closures / MPAs

## WP5

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## Lessons learned from other fisheries with experience from discard bans

- Iceland started implementing a discard ban for selected species in 1977
- Full implementation in 1996 for all commercial stocks
- The discard ban met strong opposition in the beginning
- Considerable illegal discards in the early years of the discard ban

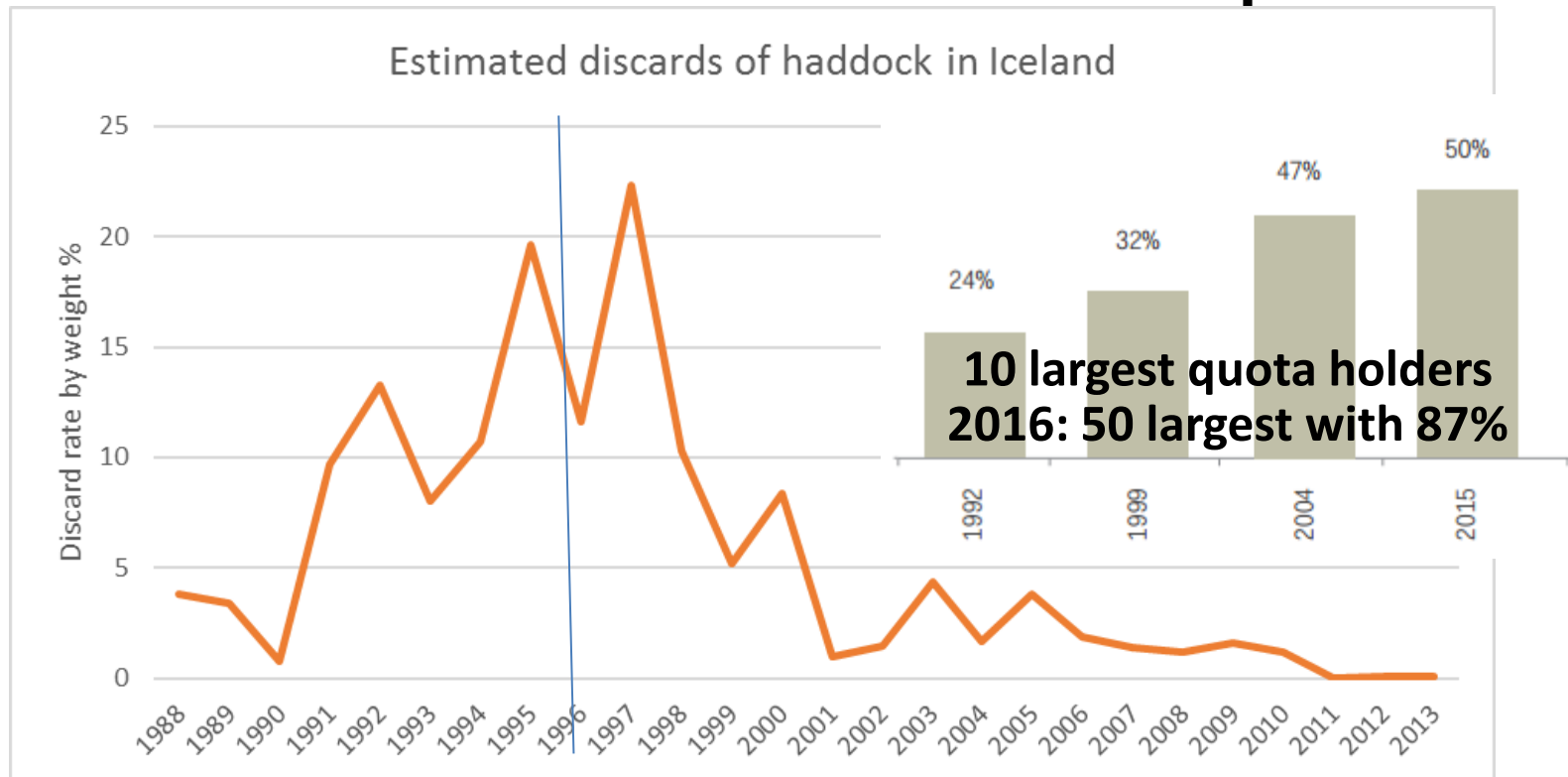
# WP5

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### Lessons learned from other fisheries with experience from



Source: Pálsson 2003, Pálsson et al. 2015

## WP5

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## Important differences between CFP and other countries

- 83% of the EU fleet is under 12 meters long
- 98% are under 30 meters
- MCRS cannot be used for human consumption
- Many species and many fleets fishing in the same area
- Economics – many of the fleets in countries with history of LO are better prepared to invest in new technology
- The level of mistrust between different stakeholders probably higher

# WP5

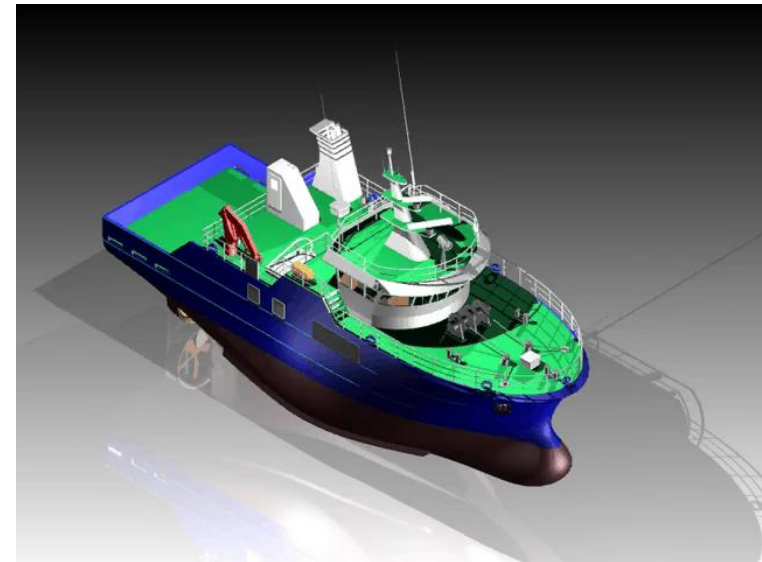
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**The aim of WP5 in DiscardLess is to explore, suggest, develop and validate alternatives for on-board handling and Monitoring, Control and Surveillance of unavoidable unwanted catches**

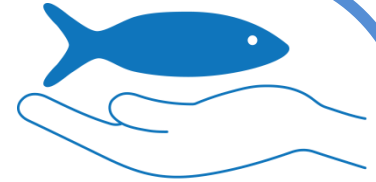
- Applicability of the solutions is very case dependent.
- Target species and catch composition matters
- The vessel size is a deciding factor
- Investment cost and rate of return also a factor
- Landing regulations / registration of catches





## Concrete suggestions

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**We have analyzed catches and discards of the following vessel categories and identified a number of available alternatives for onboard handling of UUC**

- 10-15 meter hook & line coastal vessels (N-Atlantic)
- 18-30 meter North Sea Danish seine/bottom trawler
- 34-44 meter Bay of Biscay bottom trawler
- 40-60 meter N-Atlantic (UK) fresh fish bottom trawler

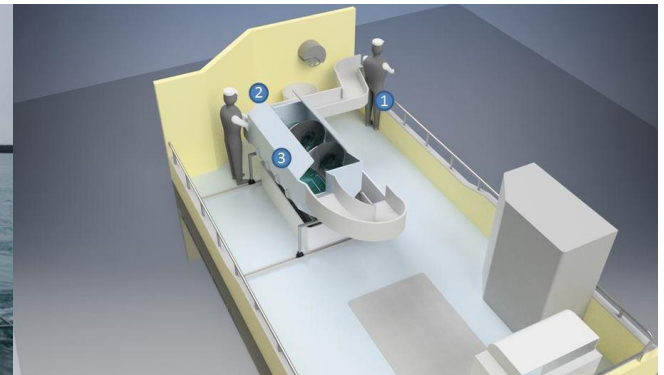
# Concrete suggestions

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

- Very little that can be done on such small vessels.
- Handling dependent on what is the end product.
- When applicable it is necessary to bleed, gut, clean and chill catches.
- Separation between species and MCRS requires considerable space
- Differently colored boxes an option
- Larger bulk containers for MCRS possibility if traceability/landing regulations permit



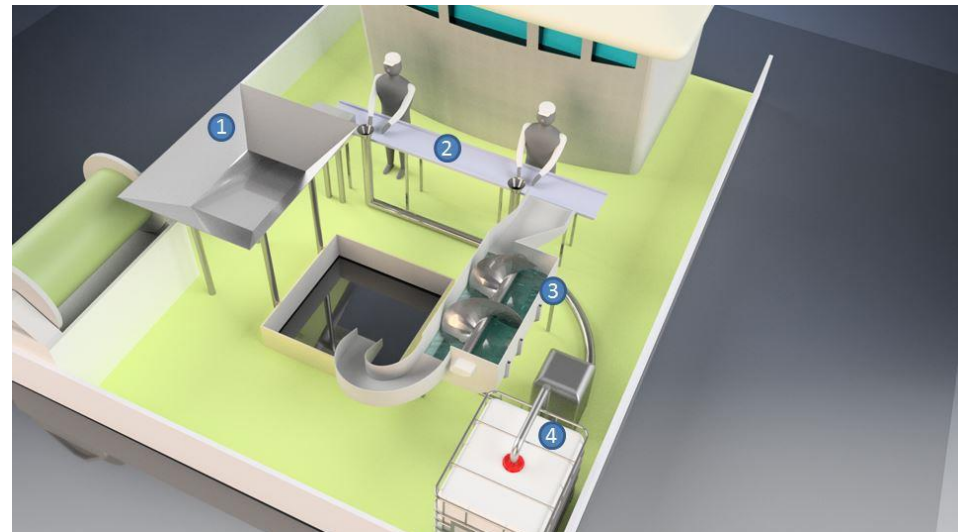
# Concrete suggestions

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## 18-30 meter North Sea Danish seine/bottom trawler

- Limited options because of available space
- Handling dependent on what is the end product.
- When applicable it is necessary to bleed, gut, clean and chill catches.
- Separation between species and MCRS requires considerable space
- Differently colored boxes an option
- Larger bulk containers for MCRS possibility if traceability/landing regulations permit
- Silage production as an option



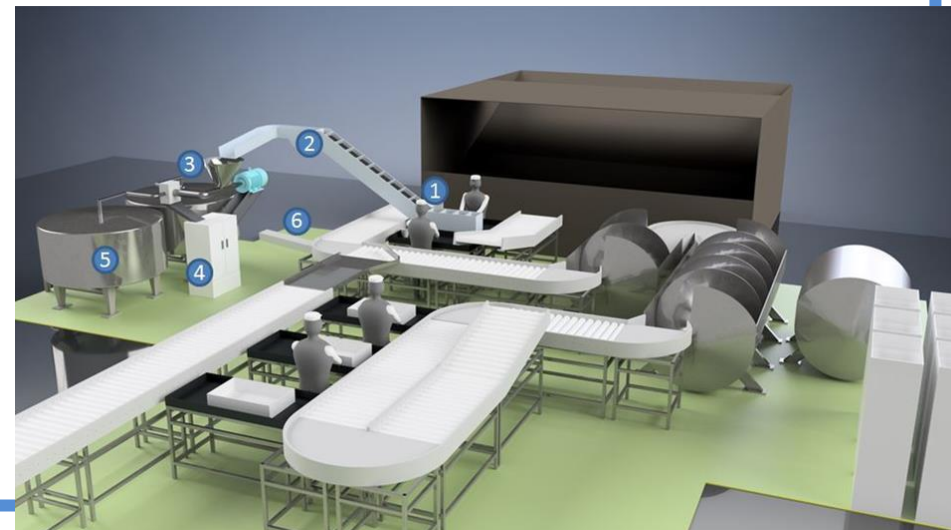
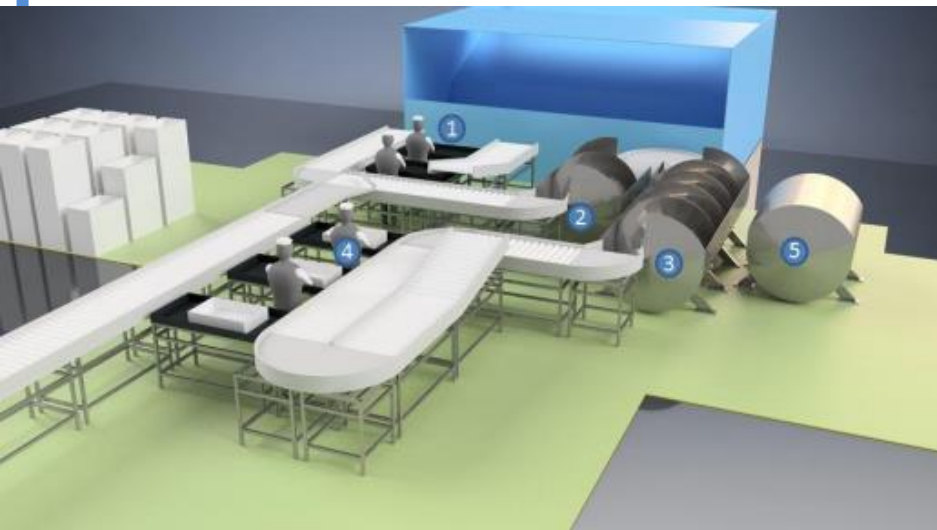
# Concrete suggestions

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## 34-44 meter Bay of Biscay bottom trawler

- Classification of UUC for land based processing
- Bulk storage
- Compressing UUC
- Silage



# Concrete suggestions

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## 34-44 meter Bay of Biscay bottom trawler

- Estimated costs of silage preservation equipment and likely value of the silage.

Cost items	EUR
Mincer	45.000
Acidification equipment	4.000
Primary tanks	12.000
Secondary tank	15.000
Conveyor belts	4.000
Vacuum pumps	11.000
Hoses, fittings and other miscellaneous	20.000
Instillation (5 persons for two weeks)	32.000
<b>Total cost</b>	<b>143.000</b>

Investment in equipment that is sufficient for the vessel 143 th. EUR  
 + Annual Formic acid need 12 th. EUR

Landing value of annual silage production 264 th. EUR

Raw material	Raw material (T)	Moisture (%)	Protein (%)	Fat (%)	Minerals & other (%)	Fish-meal (T)	Fish oil (T)	Fish-meal (EUR)*	Fish oil (EUR)*
MCRS catches	656	65%	18%	16%	1%	144	98	116.345	90.532
Species not subjected to catch limits	200	80%	17%	2%	1%	42	2	34.016	1.631
Viscera & offal from target species	81	70%	13%	14%	3%	15	11	11.756	9.764
<b>Total</b>	<b>937</b>					<b>200</b>	<b>110</b>	<b>162.117</b>	<b>101.927</b>

# Concrete suggestions

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## 40-60 meter N-Atlantic fresh fish bottom trawler

- Classification of UUC for land based processing
- Protein plant
- Fish meal factory
- Compressing or mincing UUC
- Silage preservation / full production
- FPH





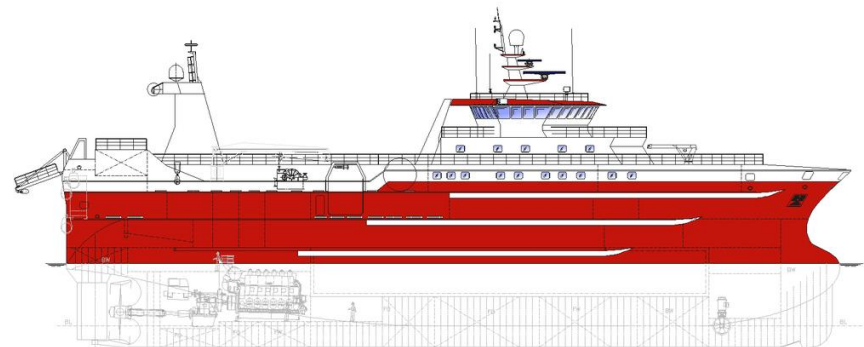
# Work in progress

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## 70-90 meter Freezer trawler

- Fish Protein hydrolysate factory
- Fishmeal factory



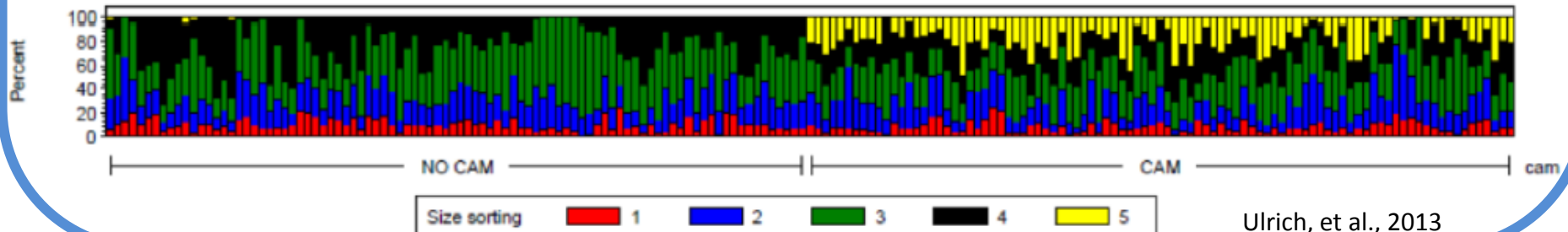
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## MCS (Monitoring, Control and Surveillance)

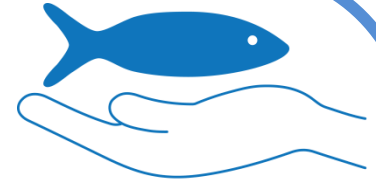
- Fully documented fishery
- CCTV
- VMS
- E-logbooks
- Fleet communication programs
- Self-sampling
- Genetic tools to monitor landings of otherwise “unidentifiable” catches
- Compliance and acceptance is big unknown



Ulrich, et al., 2013



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**DiscardLess**

**Deliverables from WP5 are available at [www.discardless.eu](http://www.discardless.eu)**

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