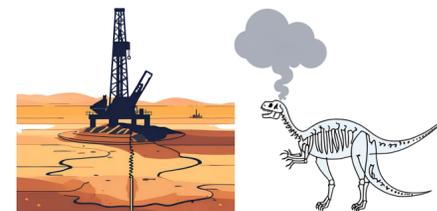


Biofuel as a solution for the sustainability of the Cantabrian fishing fleet

WHAT'S THE PROBLEM?

- Non sustainable fuel in fishing fleet
- Net carbon dioxide emissions
- Fish-waste



SOLUTION

- Sustainable fish-waste based fuel extraction close the loop to a circular economy
- Less carbon dioxide emissions



Fernando Pigazo

F. Sofía Gómez

Tamara Llano

Andrés Ortega -Piris

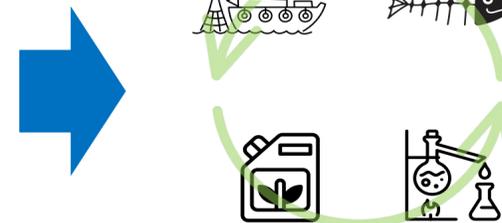
Emma Díaz -Ruiz-Navamuel

Alberto Coz

FROM LINEAR TO CIRCULAR ECONOMY



Linear fossil based fuel production-consumption system



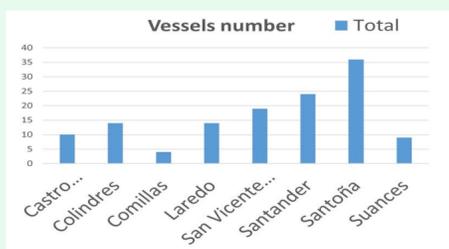
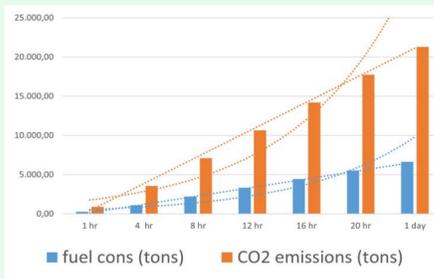
Circular fish-waste based fuel production-consumption system



SOSTENLAFLOTA PROJECT

Improving the sustainability of the fishing fleet and port services of Cantabria

1. FISHING FLEET ANALYSIS



2. WASTE PREPARATION

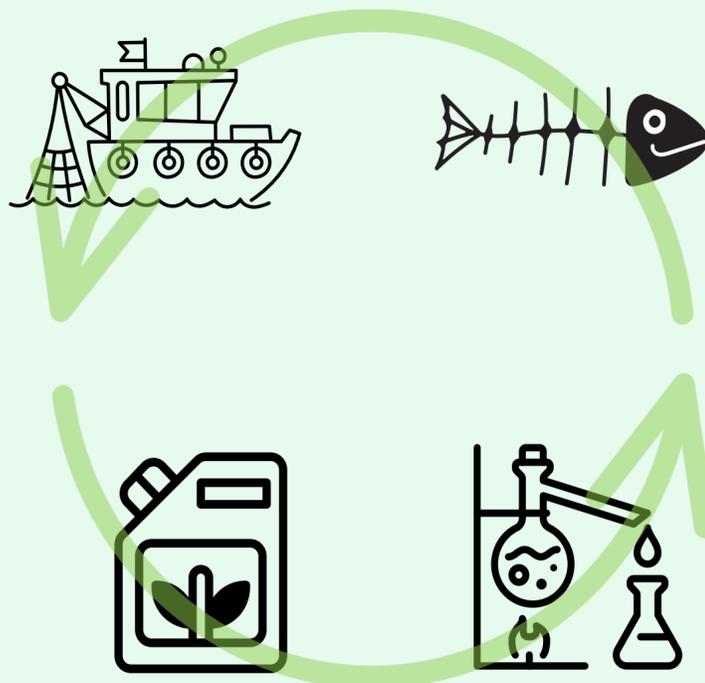
- Crushing and cooking



7. CARBON DIOXIDE EMISSIONS



Comparison from vessel engines using traditional diesel and biodiesel



3. OIL EXTRACTION

- Wet pressing
- Solvent extraction
- Supercritical extraction



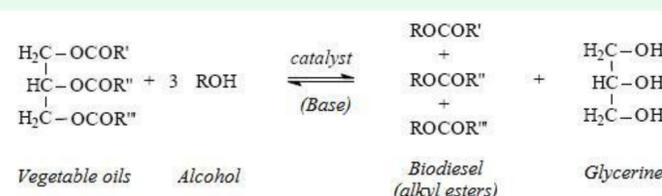
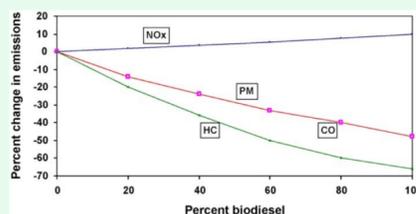
4. OIL PURIFICATION

5. TRANSESTERIFICATION

- Biodiesel obtaining

6. CHARACTERIZATION

- Density
- Iodine value (IV)
- Acid value (AV)
- Moisture content
- FTIR



Contact : Fernando Pigazo, Department of Chemistry and Process and Resource Engineering, University of Cantabria
Email : fernando.pigazo@unican.es

Reference: McCormick RL, Tennant CJ. Regulated emissions from biodiesel tested in heavy-duty engines meeting 2004 emission standards. SAE technical paper no. 2005-01-2200; 2005.

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