



## Achieving sustainability in fisheries through research and innovation



Thursday 11 November 2021, 14:00 – 16:00 CET  
Online Event

### Hosted by MEP Maria da Graça Carvalho

Vice-Chair of the Committee on Fisheries (PECH) of the European Parliament &  
Co-chair of the Ocean Governance Working Group of the European Parliament Intergroup on 'Climate Change, Biodiversity and Sustainable Development'

This online event highlighted how research and innovation play a key role with regards to achieving sustainable fisheries. Moreover, it showed the great potential the European Union has to lead the example with respect to driving smart and innovative fishery practices, both within its territorial waters and worldwide.

Speakers:

- **MEP Maria da Graça Carvalho**
- **David Røisland**, COO & Co-founder of Innomar
- **Øystein Orten**, Fishingboat Captain and Co-owner
- **Thomas Gugler**, President WORLDCHEFS, the World Association of Chefs' Societies (WACS)
- **Xavier Vanderbeken**, CEO, Frais Embal SA
- **Elisabetta Balzi**, Head of B4 Unit on 'Healthy Oceans and Seas', DG RTD, European Commission
- **Annette Hurrelmann**, Head of C3 Unit on 'Scientific Advice and Data Collection', DG MARE, European Commission
- **Daniel Voces de Onáindi**, Managing Director, Europêche
- **Fredrik Myhre**, Acting Team Leader on Ocean, WWF Norway

## Welcome Remarks

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*MEP Maria da Graça Carvalho*

***“We need to promote science-based policies, by providing more accessible scientific knowledge to policy-makers.”***

As an opening note, MEP Ms. Maria da Graça Carvalho emphasized the need to **cut the link between economic growth and unsustainable resource extraction**, which is particularly evident in the fisheries sector. To decouple the two, **science and new technologies** play a vital role. Following this narrative, she highlighted three important pillars. The first one is the **importance of scientific knowledge for policymaking**. She informed the audience that one of her priorities in the PECH Committee is indeed to include technology and innovation and promote science-based policy. As an example, she mentioned her contribution to the scientific opinion “Food from the Oceans” (produced by the European Commission) and the inclusion of marine issues in the new **Horizon Europe** – for which MEP Ms. Carvalho is the rapporteur. As a second point, she highlighted the **vital role of implementing new technology**, mentioning AI, robotics, space technology, sensing, monitoring, data from the space, digital cameras, machine learning. Such technology must be made **available in order to reach sustainability**, efficiency, and also to attract more qualified people to the sector. Lastly, the available EU budget is high, but the **application and investments in new technologies need to be more prioritized**. In this regard, MEP Ms. Carvalho invited the civil society to put pressure on decision-makers to make sure that the money is well used and well applied for these scopes.

## Presentations

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*David Røisland, COO & Co-founder of Innomar*

***“New technologies allow us to keep track of the fishing gear and minimize its loss, and thus to reduce ghost fishing.”***

**Mr. David Røisland** gave a presentation about **Innomar Ocean Technology**, which since 2016 has focused on interconnectivity in the oceans, improving the fishing economy and maintaining sustainability. Innomar's goal is to make a **digitalized and healthy ocean through the introduction of new solutions for responsible fishing and optimized resource management**. Their systems **allow fishermen to control their fishing equipment while also facilitating regulators in accessing data and monitoring the operations**, to ensure sustainable practices. In 2020, Innomar was awarded by European Union € 6.3 million and currently has offices in Norway and Canada. Innomar is trying to bring innovation in a context where fisheries still often use traditional methods, he explained. Currently, there are debates on the use of sea bottom trawling, which is shown to endanger sea habitat, and of gillnets, which are a great source of bycatch and provide low-quality fish. To tackle the issues of microplastic pollution and ghost fishing caused by conventional fishing methods in the oceans, Innomar has developed the Innocath system, which consists of four elements. There is a **digital web platform** that can allow fishermen and regulators to monitor fishing gear. This software communicates with a **smart buoy**, that locates the equipment and tracks its status. In addition, wireless **biomass monitors attached** to traps show in real-time the content and the catch. Innomar's **smart fish traps**, finally, are gentle to the seabed and minimize bycatch. Mr. Røisland emphasized that reporting by the industry with precision where and by who a fish was taken ensures full traceability in the supply chain. **Innomar technology minimizes loss of fishing gear and optimizes fishing**, which translates in less bycatch, ghost-fishing and pollution. Specifically, Innomar's impact goals are to reduce bycatch by 37.000 tons, save 2000 mammals from ghost fishing, reduce emissions by 336.000 tons of Co2 and reduce plastic pollution by 12.000 tons.

*Øystein Orten, Captain and Co-owner of the Fishing boat MS Ragnhild Kristine*

***“Combining fish quality with profit and much less burden for the environment. This is really the way we have to go in the fishing industry now.”***

As anticipated by the previous speaker, the boat MS Ragnhild Kristine mainly uses long-line and gillnets but their environmental impact is tangible. Its Captain, Mr. Orten, is implementing Innomar solutions, such as smart buoys and sensors, to optimize fishing. In the case of gillnets,

the quality of the fish and therefore the economic returns are reduced while, in the case of long-lines, the quality is higher but so are the costs of operationality. He stated that his crew **will keep increasing the use of traps, as they see in them new and good opportunities for fishing.** Using fishing traps requires fewer costs and optimizes the quality; in addition, it is possible to target a specific species and harvest underutilized fish stocks. **Fishing traps are therefore a good cost-effective option, with much less impact on the environment.** Captain Mr. Orten concluded acknowledging the problem of bycatch and the plastic pollution from gillnets believed that innovation is the way to go for the fishing industry.

## Interventions

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*Thomas Gugler, President WORLDCHEFS, the World Association of Chefs' Societies (WACS)*

***“For chefs around the world, it is important to support sustainable fishing methods, emphasize quality-driven products, support local fishermen and make sure that underrated quality fish have their platform.”***

Mr. Thomas Gugler highlighted the importance of **developing right practices when it comes to food provision.** According to him, aggressive fishing is not the right direction. Technology is vital to feed the world in a more appropriate way. He explained that **the quality of the fish depends on the catching method,** as a high level of stress increments adrenaline in the animal and impacts the product. He acknowledged that sometimes consumers focus on the quality rather than the origin or the methods of production. He commented the methods like those proposed by Innomar as solutions for quality and sustainability. **Clear traceability must be implemented as it is already done for farm animals** and caught fish must be displayed for his quality and sustainability record. Furthermore, he encouraged drawing attention on **local fishermen and support local markets.** Another important aspect is to **consider on seasonal fisheries,** which are in a stable condition but often ignored – as opposed to overfished stocks. Mr. Gugler explained that WACS cares about the environmental aspect, using as an example the problem of bycatch, and the social aspect, with the charity World Chefs Without Borders that provides food for people in need. He praised the use of fishing traps, which reduce bycatch and target specific fish. He stated that for chefs is **important to support sustainable**

**fishing methods, emphasize quality-driven products, support local fishermen and also make sure that underrated quality fish have their platform to become more known and served.** Finally, he urged to work together to create a more sustainable fishing industry.

*Xavier Vanderbeken, CEO, Frais Embal SA*

***“If we are not able to tell the story of the fish to the customer, this is standardization, and we cannot have sustainability with standardization.”***

**Mr. Xavier Vanderbeken presented Frais Embal**, a fish packaging company based in France that has been working according to **sustainability values**. In 2020, the company had an economic turnover of € 280 mln, with 16 controlled purchasing areas in France and Northern Europe and 3 sale channels, namely retail, foodservice and industry. **Frais Embal’s sustainability efforts include utilizing eco-labels**: since 2016, all of the fish they process comes from sources that are certified ASC or MSC. The company provides salmon and white fish, which, Mr. Vanderbeken reminded, comprises the last savage species that can be found in the retail. The supply from coastal French fishing shrunk from 25% to 3% in the last 10 years but Frais Embal is trying to reverse this trend. **Supplying from local fisheries means to have fresher fish, better yield, and therefore more profits and less waste**. Mr. Vanderbeken showed the biggest customers of Frais Embal’s blockchain, highlighting that the demand for certified sustainable fish is increasing. If the seller does not know the story behind the catch of a fish, it is standardization and, according to Mr. Vanderbeken, **there is no sustainability with standardization**. Furthermore, he emphasized the role of segmentation and how Frais Embal is supplying high-level catering companies. In this regard, he stated that chefs should help promote the consumption of diverse fish. Finally, he summarized the win-win outcome of providing good quality, long-lasting fish with a good yield.

*Elisabetta Balzi, Head of B4 Unit on ‘Healthy Oceans and Seas’, DG RTD, European Commission*

***“The sustainability of fisheries and of the ocean is key for the Green Deal, there cannot be a Green Deal without the blue part”.***

**Ms. Elisabetta Balzi started her intervention by stating that sustainability of fisheries is key for the Green Deal.** She then proceeded to show what are the research and innovation initiatives that the EU is supporting, to reach sustainability in fisheries but also maintain healthy seas and oceans. After having supported fisheries and aquaculture already between 2014 and 2020, **the new Horizon Europe provides many opportunities to support ocean sustainability**, most notably under cluster 6, “Food, Bioeconomy, Natural Resources, Agriculture and Environment”. Relevant projects that were previously supported under Horizon Europe included the handling of bycatch and the support for ecosystem-based management in European fisheries. Moreover, projects like SmartFish and SYMBIOSIS focused on implementing new technologies in fisheries for a more environmentally friendly sector. She informed the audience that **currently there is a proposal open on the topic of innovative food from marine and freshwater ecosystems, that aims at testing solutions for more sustainable and low carbon fishing and aquaculture.** Ms. Balzi then introduced the new “EU Mission”, which aims at mobilizing broad initiatives to address five challenges that go beyond innovation. One of them is **to restore oceans and waters by 2030** and it is based on three objectives: protect and restore marine and freshwater ecosystems and biodiversity, prevent and eliminate pollution of the ocean, seas, and waters and make the Blue economy carbon neutral and circular. **This mission can be reached**, she explained, **with a system of digital knowledge of oceans and water, and with public transformation and engagement.** In practice, the Mission is being operationalized through the expansion of **four “lighthouses”**, which are the Danube River basin, the Atlantic and Arctic sea basin, the Mediterranean sea basin, and the Baltic and the North Sea basin. These initiatives, which have to be included in a bigger framework of efforts, revolve around **restoration, fighting pollution, and decarbonization.**

*Annette Hurrelmann, Head of C3 Unit on ‘Scientific Advice and Data Collection’,  
DG MARE, European Commission*

***“Data and science will become even more relevant ingredients for managing fisheries and marine ecosystems; there will be challenges, but the CFP is already well-equipped to tackle them, because confidence and reliance on science are already deeply enshrined in the Policy.”***

**Ms. Annette Hurrelmann** began her intervention by stating that the **Common Fisheries Policy (CFP)** is a science-based policy and the **EU supports the release of scientific advice and collection of data**, also at the international level. This work is supported by a **independent advice providers**, such as ICES and STECF, and experts under framework contracts. In addition, the EU is one of the main providers of scientific contributions for international fisheries management, like in RFMOs. **These workstreams are supported through the European Maritime, Fisheries, and Aquaculture Fund** and internally by the Joint Research Center and CINEA. Ms. Hurrelmann also mentioned the important synergy with Horizon Europe, where DG MARE works with DG RTD to bring in fisheries and blue economy research topics. Ms. Hurrelmann then stressed the **importance of having reliable and complete data to support the scientific process**. The EU has a Data Collection Framework and Member States also coordinate data collection between each other through Regional Coordination Groups. A challenge ahead is to **ensure the contribution of the CFP to the Green Deal objectives, specifically how to achieve the more ambitious goals about conservation and restoration of marine biodiversity**. She pointed out that there will be and already are **increasing demands to integrate environmental consideration in fisheries management objectives**, which means that fisheries science needs to go **beyond just looking at single fish stocks and embracing a holistic view on ecosystems**. **Ecosystem-Based Management is already an integral part of the CFP**, but it needs to be made more operational and concrete for fisheries management. Ms. Hurrelmann emphasized that this will go hand in hand with **future needs for a bigger amounts of data** to guide decisions. There are rapid technological processes that can support fisheries management and a better analysis of data, for example, remote electronic monitoring system and the use of AI. She stressed that there are huge benefits of **cooperation between the private sector and fishermen**. As her concluding point, Ms. Hurrelmann acknowledged that the **increasingly important role of data and science for managing fisheries and marine ecosystems brings challenges**. However, due to its reliance on science, the CFP is already well-equipped to answer them.

*Daniel Voces de Onáindi, Managing Director, Européche*



***“Energy efficiency is one of the key factors to achieve the goals of the EU Green Deal; according to STDF, in the last decade we saw a reduction of 18% of fuel consumption and Co2 emissions in the fishing sector in Europe.”***

As an opening note, Mr. Daniel Voces stated that **sustainable fishing goes hand in hand with research and innovation** as well as science plays a fundamental role in ocean management. He stressed that all fishing fleets can be sustainable and legal fishing gears should not be all demonized, but rather look at their use and regulation. Mr. Voces expressed skepticism for some data presented previously in the event, pointing out that the actual fishing discard is only around 10%, since some bycatch is eventually landed and consumed. He also challenged the claims regarding plastic litter, reporting that the one from the fishing industry is only around 10% of the total, and probably even less at the EU level. Since 2010, indeed, in the EU there is the obligation to identify and retrieve lost fishing gear. Mr. Voces highlighted that **wild-caught fish gives the most protein with the lowest carbon footprint**. In addition, all **EU fleets are engaging in projects for catching and energy efficiency, traceability, product technology**, and also in clean-ups. All considered, Mr. Voces stated that the **fishing industry has been trying to improve their environmental impact over the years with better technology**. On the issue of energy efficiency, he informed that the **EU fishing sector has almost halved emissions since 1990**. This is due to the improvement of fish stocks and innovation. Mr. Voces then flagged **that innovation and efficiency are often wrongly associated with overfishing**. A challenge is that many vessels require more space onboard for innovation, both for new technologies and improvement of living conditions. The progress in this area is however often jeopardized by the EU limits on fishing capacity. He concluded by reiterating that the ambitious goals set up by the EU Green deal can only be achieved with innovation and, in this context, he mentioned the European Fisheries Technology Platform.

*Fredrik Myhre, Acting Team Leader on Ocean, WWF Norway*

***“Technology cannot solve overfishing alone. We need to make sure that decision-makers follow scientific advice for the fish stocks.”***

**Mr. Fredrik Myrhe** started off by showing data according to which, in the last 50 years, **marine populations dropped by 36%**. Additionally, he reported that **93% of commercial fish stocks is**



**either fully exploited or already overfished**, which means that commercial fish species cannot be harvested at a higher rate. Regarding ecosystem-based management, he flagged the lack of data on species and habitat interactions. While acknowledging the role of technology in solving overfishing, Mr. Myrthe stressed that other factors need to be looked at, such as the **increased demand for multiple species models, the bycatch problem, and the climate footprint of fisheries**. As with other sectors, fisheries must go carbon neutral by 2050. **Fisheries policy should take into account new science when it comes to bottom trawling**, which releases a lot of emissions and fuels ocean acidification by disrupting the ocean floor. Another problem is **the relation between maritime spatial planning and ecosystem-based management, which requires technology and a common set of rules to avoid conflicts between sectors**. Not all activities can coexist in the same part of ocean, he stated. **Technology is necessary to monitor active fishing gear**, locate the lost one but also to investigate if the lost gear is being reported. He also suggested a deposit scheme for used fishing gear, as a measure to avoid pollution. **Technology has also a huge role to share data and results and thus establish best practices to follow**, while also contributing to a stronger knowledge platform and a better management regime. Despite the vital role of innovation for ocean health, Mr. Myrthe underlined that **technology cannot solve overfishing alone, and decision-makers must follow scientific advice to avoid overexploitation of fish stocks**.

## Q&A Session with the audience

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When asked about Innomar's contribution to ocean data, Mr. Røisland explained that their systems can currently gather sub-sea data and that they are testing additional sensors for buoys; these would **gather data and monitor other factors**, such as salinity and oxygen levels, **that might be useful for other stakeholders and other goals in the blue economy**. When asked about the vision for the future, Mr. Orten stated that he sees **coastal fishing as becoming more sustainable and quality-based** and that this approach will be slowly followed by bigger vessels as well. Answering the same question on behalf of Europêche, Mr. Voces declared that it is **a responsibility of the fishing industry to invest in new technology to mitigate their impact**. There is no one-fit-all solution, as any fishing vessel or gear will have some kind of problems. Regulators, he continued, **must ensure that the legislative framework**

**supports the inclusion of new technologies.** Referring to a previous presentation, Mr. Voces called for avoiding counting together sustainable and unsustainable fishing and reported that almost 80% of the fish being eaten comes from sustainable sources, according to FAO. Talking about the fish market, Mr. Vanderbeken confirmed that **there is demand for a wider variety of high-quality, sustainably caught fresh fish in the retail and HoReCa segment.** Mr. Gugler reiterated that **the fishing method is important for the quality of fish,** which should therefore be caught with the most care possible.

To conclude the session, panelists were asked to express some key take-aways. According to Mr. Røisland, **the fishing industry should use technology to bridge the cooperation with regulators and other stakeholders.** Mr. Orten highlighted that **to move towards sustainability it is necessary to develop profitable fishing technology.** Ms. Balzi highlighted that **technology and innovation are important for a healthy ocean,** not only for fisheries, and **cooperation must be done across sectors.** This last point was echoed by Ms. Hurrelmann, who also underscored the need to keep developing and cooperating on science and data, in order to operationalise it for fisheries management and understand the ecosystem impacts. Mr. Gugler also emphasized the importance of working together. For Mr. Myrhe, it is vital to **listen to scientific advice and have technology that can contribute to environmental solutions.** He repeated the data on fisheries exploitation and called for urgent action. Mr. Vanderbeken encouraged communication and, related to fish consumption, **the spread of knowledge about different species.** Mr. Voces put attention on **the need for economic and social drivers,** the **willingness of governments to cooperate,** and a leveled playing field. Ms. Balzi concluded by calling all actors and stakeholders to engage and cooperate.