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Abstract	The deliverable 2.1 is compounded by two summaries of two high-level events organised on 6th November 2024 and 29th June 2023: The latest high-level event took place at the forty-seventh session of the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture

<table>
<tr><td rowspan="1" style="background:#2e4b7b"></td><td>Organization of the United Nations (FAO), held in Rome, Italy (04-08.11.2024) as a dedicated Fish-X event. The side event took place on 6th November 2024, 13:00-14:00 CEST.

The second high-level event happened at the European Parliament, titled "Digital transition in EU Fisheries, how to better implement the Common Fisheries Policy?" on Thursday, 29th June 2023, 11:00-12:30 CEST</td></tr>
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4.0	19.12.2024	Final Draft	Final Draft Review	Jana Stünkel (TMT) Andrew Thorsen (TMT)

Table of Content

Acronyms and abbreviations

Abbreviation	Meaning
AI	Artificial Intelligence
AIS	Automatic Identification System
CFP	Common Fisheries Policy
DG Mare	Directorate-General for Maritime Affairs and Fisheries
EC	European Commission
eCDS	electronic Catch Document Scheme
EEZ	Exclusive Economic Zone
EMFF	European Maritime and Fisheries Fund
ERS	Electronic Reporting System
EU	European Union
FAO	Food & Agriculture Organisation of the United Nations
FISHWeb	CLS Web-platform for the management of VMS and ERS data
GFCM	General Fisheries Commission for the Mediterranean and the Black Sea
GPS	Global Positioning System
IUU	Illegal, Unreported, and Unregulated fishing
MCS	Monitoring, Control, and Surveillance
MPA	Marine Protected Areas
MS	Member States
NAOS	CLS satellite tracking buoy for fishing gears
NEMO	CLS VMS for SSF
REM	Remote Electronic Monitoring
RFMO	Regional Fisheries Management Organisation
RPOA-SSF	Regional Plan of Action for SSF
SDG	Sustainable Development Goals
SSF	Small-Scale Fisheries
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
VMS	Vessel Monitoring System

Fish-X Side Event at the 47ᵗʰ session of the General Fisheries Commission for the Mediterranean (GFCM)

1. Executive summary

WWF Mediterranean hosted a side event during the 47ᵗʰ General Fisheries Commission for the Mediterranean (GFCM) session to present the outcomes of the **Fish-X Project**.[1] This initiative focuses on leveraging technology and open-source solutions that supports the **Common Fisheries Policy (CFP)**, **EU Green Deal**, **Farm to Fork Strategy**, and the **GFCM Regional Plan of Action for Small-Scale Fisheries (RPOA-SSF)**.

The event provided policymakers and stakeholders with valuable insights into innovative strategies for sustainable fisheries management. Discussions cantered on:

1. **Data collection and sharing:**
   - Addressing challenges in collecting data from **small-scale and recreational fisheries**.
   - Promoting fisher-inclusive data-sharing models to improve reliability and transparency.
2. **Access, management, and utilisation of data:**
   - Showcasing the Fish-X Traceability Platform, enabling real-time data sharing to enhance **monitoring, control, and surveillance (MCS)** measures.
   - Supporting decision-making aligned with ecological and economic goals.
3. **Advancing sustainability in EU fisheries:**

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[1]This year, 20 countries and the European Union took significant steps to advance the sustainability of fisheries and aquaculture by adopting 17 key decisions, including 12 binding recommendations, during the 47th session of the General Fisheries Commission for the Mediterranean (GFCM) under the FAO, held in Rome, Italy. As the regional fisheries management organization for the Mediterranean and the Black Sea, the GFCM holds the mandate to issue binding recommendations on fisheries and aquaculture development. During its annual session, members engaged in in-depth discussions to evaluate and approve proposals for recommendations and resolutions, all grounded in the best available scientific evidence. Here is WWF MMI press release about the 47ᵗʰ GFCM session: https://www.wwf.mg/?15751941/Step-by-step-towards-more-sustainable-fisheries-in-the-Mediterranean---47th-GFCM-Commission-meeting-closed-today and here is the website of GFCM: https://www.fao.org/gfcm/news/detail/en/c/1719251/

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o Strengthening traceability systems to verify catch origins and sustainability, aligning with the **Farm to Fork Strategy** and **EU Green Deal** objectives.

Key takeaways include:

- **Collaboration is key:** Effective solutions require input from fishers, particularly small-scale operators.
- **Data drives sustainability:** Transparent, reliable data is critical for sustainable fisheries management.
- **Technology enables progress:** The Fish-X platform demonstrates the potential of open-source tools to address fisheries challenges.
- **Global and regional alignment:** Fish-X supports the Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF) and broader sustainable development commitments.

The side event highlighted Fish-X's transformative potential, drawing positive feedback from delegates and attendees paving the way for continued innovation in fisheries management.

Figure 1: Plenary of the GFCM Commission © GFCM, 2024

2. Keynote speakers

- Marco Costantini (Program Manager - Fisheries, WWF Mediterranean, Italy)
- Hrvoje Čeprnja (Project Officer for Fisheries and Aquaculture, WWF ADRIA, Croatia)
- Anna Conchon (Head of the Fisheries Expertise Team, CLS Group, France)

3. Panel discussion

Figure 2: Anna Conchon (CLS), Marco Costantini and Hrvoje Čeprnja (WWF) presenting Fish-X results at the GFCM Commission side event © Simone Niedermüller WWF, 2024

The Fish-X side event highlighted the pivotal role of technology in addressing challenges and unlocking opportunities for SSF and recreational fisheries in Europe, aligning with the goals of sustainable fisheries management. Followed by a briefing of the panel presentation and discussion.

Challenges for SSF

Small-scale and recreational fisheries face significant hurdles in adapting to modern data-driven management systems:

1. **Data collection and sharing**: Due to privacy concerns, cost and maintenance of equipment and not yet implemented regulatory requirements, convincing fishers to engage in data collection and sharing is a persistent challenge. Many view such processes as burdensome or irrelevant to their daily activities.

2. **Data utilisation by authorities**: Maritime authorities and other stakeholders often struggle to access, manage, and utilise SSF data effectively, which undermines the development of sustainable fisheries management systems that benefit all.

Opportunities for SSF

The Fish-X project has created avenues for small-scale fishers to address these challenges and secure their place in the evolving fisheries landscape:

- **Visibility and recognition**: By providing proof of activities and fishing grounds, SSF can prevent the closure of economically vital areas due to competing maritime projects like offshore energy plants, aquaculture or Marine Protected Areas (MPAs). This increased visibility ensures that SSF perspectives are integrated into maritime spatial planning.

- **Fair participation in fisheries management**: SSF fishers are empowered to contribute actively to sustainable European fisheries through co-creation of systems that are fair and inclusive (e.g., alarm systems notifying fishers to avoid entering MPAs or other similar protected areas).

- **Reduction of stigmatisation**: The project helps SSF escape the stigma of illegal, unreported, and unregulated (IUU) fishing through traceable and transparent practices.

- **Economic equity**: Enhanced data and traceability systems ensure fair economic returns for fishers by documenting the journey of their catch and emphasising sustainability.

Fish-X project results

The event showcased the project's key deliverables, including:

- The **Insight Platform**, **Data Space**, and **Traceability Platform & App**, implemented through case studies in Portugal, Ireland, and Croatia.

- The ongoing work on the **Fisheries Industry Roadmap** and policy recommendations derived from research, stakeholder consultations, and AI-driven models to inform future fisheries management strategies.

Alignment with RPOA-SSF principles

Fish-X aligns strongly with the principles of the Regional Plan of Action for Small-Scale Fisheries (RPOA-SSF), providing a strategic tool to enhance SSF participation and sustainability. Key thematic contributions include:

- **Scientific research**: Fish-X integrates fisher knowledge to deepen understanding of ecosystem interactions and socio-economic impacts, advancing regional data accuracy.

- **Data systems**: The project promotes participatory and localised data collection, ensuring SSF contributions are documented and valued (e.g., the interoperability of Insight could integrate information from across Europe and the GFCM area using standardised formats).

- **Management measures**: Tools provided by Fish-X improve monitoring, reduce bycatch, and protect habitats, fostering equitable and sustainable fisheries.

- **Decision-making participation**: Fish-X empowers SSF fishers to co-manage resources and engage in marine spatial planning and MPA management.

- **Capacity-building**: Fishers are equipped with training to interpret data and apply sustainable practices, supporting livelihoods and sector resilience.

- **Climate and environment**: The project aids SSF in addressing climate impacts, from ecosystem health monitoring to innovative practices like marine litter disposal and net recycling.

Fish-X outcomes gained significant attention as a valuable contribution to the panel discussion. One particular interest was the joint efforts of the EU and GFCM in strengthening collective actions to eradicate IUU fishing and ensure compliance through effective tools and platforms. The event was attended by numerous GFCM Commission participants, including delegations from Morocco, Tunisia, Egypt, Italy, Croatia, Türkiye, and the European Union. In addition, several environmental NGOs, the Mediterranean Advisory Council (MEDAC), and the

GFCM Secretariat actively participated, underlining the broad interest in the topic. The discussions highlighted the relevance of Fish-X in advancing sustainable fisheries management and innovation, aligning with the GFCM's conclusions and its ongoing commitment to fostering regional collaboration for the health of Mediterranean and Black Sea ecosystems.

4. Conclusion

Fish-X presents a transformative model for integrating SSF into sustainable fisheries management. By addressing challenges, leveraging opportunities, and aligning with RPOA-SSF principles, the project ensures SSF's active participation in shaping a sustainable, equitable future for European fisheries.

5. Acknowledgement

Figure 3: Alessio Satta, Marco Constantini, Alessia Bacchi, Simone Niedermüller, and Hrvoje Čeprnja (WWF) at the GFCM Commission @GFCM, 2024

We extend our heartfelt gratitude to Miguel Bernal, Executive Secretary of GFCM FAO, and Matteo Starnoni, Programme and Liaison Assistant at GFCM FAO, for providing a platform to present the Fish-X Project. Special thanks go to the WWF official delegation to the GFCM Commission for their technical support: Alessio Satta, Marco Constantini, Alessia Bacchi, Simone Niedermüller, and Hrvoje Čeprnja (Figure 3). We also acknowledge Luca Eufemia for the event's organisation, Alessia Caliendo from WWF MMI administration for expertly managing event logistics, and Anna Conchon from CLS Group for her support in ensuring the success of this event.

Fish-X High-level event at the EU Parliament

6. Background information

The high-level event was initiated by the Fish-X project and organised by WWF European Policy Office (EPO). MEP Guerreiro (Portugal, Greens/AFE) and MEP Pierre Karleskind (France, Renew), Members of the European Parliament, kindly co-hosted the event. The event was entitled "Digital transition in EU Fisheries, how to better implement the Common Fisheries Policy?" and took place on Thursday, 29th June 2023, 11:00-12:30 CEST.

Following up on the Common Fisheries Policy (CFP) review report[2] and moving forward on better implementing the CFP, the high-level event aimed to further engage in the discussion at EU level on existing small-scale fisheries (SSF) digital tools and opportunities to overcome the remaining challenges. The event gathered presentations on IT development towards sustainable and traceable seafood, and fully documented fisheries across fleet segments to support the effective implementation of the CFP. The presentations were followed by a panel discussion with four panellists and a Q&A.

This event forms part of a series of Fish-X events to mobilise and engage with stakeholders involved in the digitalisation of the European SSF sector. More information about Fish-X can be found on social media (Twitter, LinkedIn), its website or by subscribing to the newsletter.

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[2] https://oceans-and-fisheries.ec.europa.eu/publications/common-fisheries-policy-today-and-tomorrow-fisheries-and-oceans-pact-towards-sustainable-science_en

Figure 4: Picture of the high-level event, @Laure Guillevic, WWF

The speakers included (in the order of appearance):

Pierre Karleskind, Member of the European Parliament, Chair of the Committee on Fisheries at the European Parliament, Renew, France

Dr. Antonia Leroy, Head of Ocean Policy, WWF European Policy Office

Marcel Louwers, Back-end developer, north.io

Francesca Arena, Head of Unit D4 (Fisheries Control and Inspections) at DG MARE, EU Commission

Dr. Jose A. Fernandes, Senior Scientist in Big Data for Marine Research and Innovation, Basque Research and Technology Alliance (AZTI)

Dr. Rachel Tiller, Chief Scientist, SINTEF Ocean for the Department of Fisheries and New Biomarine Industry

Ramón de la Figuera Morales, Fisheries Counsellor to the Spanish Permanent Representation to the EU

Francisco Guerreiro, Member of the European Parliament, Member of the Committee on Fisheries, Greens/European Free Alliance, Portugal

7. Keynote speakers

Figure 5: From left to right: Dr. Igor Gladkov (EUTECH), MEP Francisco Guerreiro, MEP Pierre Karleskind, Dr. Antonia Leroy (WWF EPO), Marcel Louwers (North.io), Sarah Gebauer (North.io)

Pierre Karleskind, Member of the EU Parliament, introduced the event. He noted that, on the 27 of June 2023, the agreement on the revised control regulation was just adopted by the parliamentary committee on fisheries[3]. The negotiation of the control regulation required five years of work and six hundred hours of inter-institutional negotiation. It is now a matter of implementation for the sake of fishers, consumers and of the environment.

Five years were spent to integrate the digital aspects for control and traceability. In the next five years, even more new digital tools will be out there. Along with digital evolution, the control regulation will have to adapt. As an example, the vessel monitoring system (VMS) was not adapted for small vessels before, but now this is easily accessible, even from a smartphone. These are key solutions for a better monitoring of fisheries.

Regarding traceability, thanks to all these tools, the catch area and the fish stock status can be known while fighting illegal, unregulated and reported (IUU) fishing.

The European Maritime, Fisheries and Aquaculture Fund (EMFAF) has been negotiated with an objective to support the digital transitions, and so we have to take advantage of it.

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[3] https://www.europarl.europa.eu/news/en/press-room/20230626IPR00821/pech-committee-approves-deal-on-new-eu-fishing-control-rules

Dr. Antonia Leroy, Head of Ocean Policy at WWF European Policy Office (EPO), presented the Fish-X project.

The Fish-X project was initiated following a call from the EU Commission on the digital transition for sustainable fisheries to achieve the objectives of the Farm to Fork Strategy, of the Sustainable Blue Economy Strategy and of the Common Fisheries Policy (CFP). The Fish-X name derived from Gaia-X, which is the leading EU framework for data sharing.

It is a consortium of 7 partners: TransMarTech (coordinator of the project), EUTECH, CLS, north.io, OURZ, Sciaena and WWF (EPO, Adria, ANP/Portugal and Mediterranean Marine Initiative – MMI)[4]. The project team is composed of non-governmental organisations (NGOs) who create the link with small-scale fishers and technical partners working on vessel localisation, block chain and data space to enable stakeholders to take better informed decisions. The project started in June 2022 and will be running for three years, with a total budget of 6 million euros. Three use cases will take place in three sea basins: Mediterranean, Baltic, and Atlantic.[5]

It was considered important by the consortium to focus on players that are less represented such as the small-scale fishers (SSF) who are crucial for the future of the EU fishery sector.

The goals of the project are to tackle IUU fishing, promote sustainable use of natural resources, support honest fishers with fair economic returns and foster synergies between maritime authorities and fishers. This would ultimately advance the digital transition for SSF and recreational ones and contribute to healthy and traceable food. All of these are aligned with the newly voted revision of the control regulation.

As a concrete step, the Fish-X project will deploy NEMO transmitters, a simple VMS device made for small boats, in the three above-mentioned sea basins. Based on the generated data, three products of the Fish-X project will be developed: the Fish-X Data Space, the Insight Platform and the Traceability Platform. Policy recommendations will also be designed towards the end of the project.

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[4] Since Spring 2024, the Fish-X consortium expanded to 9 partners with the Low Impact Fishers of Europe (LIFE) and the Irish Ireland Marine Resource Organisation (IIMRO).
[5] With the onboarding of IIMRO, a new use case has been an added in Ireland.

Marcel Louwers from north.io, working on the Fish-X Data Space's development, provided the audience with an analogy of the Data Space.

A shipping container would be needed in the physical world to transfer goods from one place to another, adequate for all types of goods and recognised worldwide. Shipping containers work all over the world with the same standards. This is the same principle applied with the Data Space that enables all types of data to be exchanged in a qualitative way according to technical and policy frameworks. It ensures fishery-related data to be consumed by authorities in a secure manner while the fishers keep the ownership of their own data.

Antonia Leroy concluded her presentation of the Fish-X project.

By the end of the project, a roadmap for leading the way on the digitalisation of SSF by 2030 will be published and participants will be welcome to contribute with their initiatives. This will be aligned with the EU Control regulation and the new requirements for SSF to have VMS on board by 2030. A digital traceability system will be mandatory as well for them. The Fish-X project is providing concrete application of these new legislative requirements.

Finally, the project is in compliance with the CFP objectives to incentivise fishers using low impact fishing techniques, testing low-tech devices to ultimately end overfishing and help restore fish stocks.

8. Panel discussion

As part of the panel discussion, four panellists were invited to present their views and experience on the digitalisation of small-scale fisheries.

Figure 6: From left to right: Dr. Jose A. Fernandes (AZTI), Ramón de la Figuera Morales (Spanish permanent Representation to the EU), Francesca Arena (EU Commission, DG Mare), Rachel Tiller (Sintef, EVERYFISH Project)

Francesca Arena, Head of Unit D4 (Fisheries Control and Inspections) at DG MARE, EU Commission kicked off the panel discussion to detail the position of DG Mare on the topic.

Francesca Arena expressed her satisfaction by the positive outcome of the vote on the control regulation. She also highlighted the new and young faces in the room which are promising for the future.

She questioned whether fisheries and digitalisation are really two separate worlds. Everything depends on the scale and on the purpose of exploiting new technologies. Large scale vessels are already well-equipped with the best available technology, that allows them to optimise fishing operations, notably by maximising the quantities caught in a fishing trip. Technology and digitalisation are also essential when it comes to control activities, to make sure that fishing activities are carried out according to the EU laws, without illegal fishing. With that in mind, digitalisation was a "leitmotif" of the revision of the EU fisheries control system, with the objective to improve the quantity and quality of data, which will in turn have positive effects not only on fisheries monitoring and control, but also on the quality and robustness of scientific stock assessments, resulting in better fisheries management decisions.

It is essential to ensure easier data access and interoperability. Hopefully, one of the Fish-X deliverables will go in that direction. More data is necessary to improve control and monitoring. In addition, more data will help better traceability.

When it comes to SSF, the future is with geo-localisation of every vessel and electronic reporting of catches. To complete the geo-localisation process, six years of transition will be necessary to ensure that the entirety of the EU fleet is tracked by 2030. User-friendly tools such as apps on mobile devices should be used to remove burden for fishers and the Commission will develop a tool to support the Member States. The same goes for recreational fisheries, for which electronic catch reporting will gradually become compulsory for certain species. Further to an EU project promoted by the EU Parliament, the EU Commission already developed a web-based platform on catch reporting for recreational fisheries that will be further upgraded in the coming years.

Another key improvement lies in the revised traceability rules. For the first time, full digital traceability will be mandatory along the supply chain. This will be a breakthrough for the authorities as well, enabling them to cross-check data and to tackle illegal fishing. After two years, this provision will apply to fresh and frozen products, while for prepared and preserved products, as well as algae, the transition period will be of five years.

The mandatory use of new control technologies, such as remote electronic monitoring, including CCTVs, is also another important feature of the revised EU control system, with the objective to fully align it with the requirements of the Common Fisheries Policy.

Finally, everything becomes electronic (all catch registration documents, such as landing declarations, sales notes, transport documents) around control, as well as inspection reports.

The European Commission has secured funding for research on digitalisation under Horizon Europe. In the 2023 Work Programme of Horizon Europe, other topics are also covered such as automatic catch identification and AI. Hopefully, the Fish-X project will go in the right direction and be delivered so that its results can feed in the implementation process of the new rules.

Dr Jose A. Fernandes, **Senior Scientist in Big Data for Marine Research and Innovation, Basque Research and Technology Alliance (AZTI), explained the possible use of artificial intelligence for the EU fishery sector.**

Jose Fernandes co-authored a study on the use of artificial intelligence (AI) for the fishery sector, delivered to the PECH Committee in May 2022[6].

AI definition in EU new legislation is very broad, since it is changing very fast and needs to be robust for future developments. AI can have numerous applications such as mapping fisheries, assessing plankton and phytoplankton stock, support spatial planning to resolve conflicts between fishery and aquaculture, route optimisation to save fuel and emissions, electronic monitoring, or also quota management.

AI has an impact on jobs. However, our experience is that it does not reduce them, but rather creates more highly skilled jobs (e.g. development, maintenance, engineering).

He underlined the need to build trust and to show the win-win situation that AI can bring to the industry and the environment. Initial cost is high, and AI projects have to be run on a long-term basis (5 to 10 years) to make the technology fully effective and trustable.

As an example, the SusTunTech project worked with tuna fisheries using electronic monitoring and route optimisation[7]. AI was tested to automatically count and measure fisheries beyond statistical validation using 10 years data. It provided a comparison between manual sampling at ports and automatic validation of samples. Modern electronic monitoring was going on for years with cost-effective onboarded cameras. The generated data can be useful, not only for control purposes, but also for climate change adaptation to advise fishers on where to fish and mitigation (route optimisation).

SusTunTech project has proved that AI can be applied to analyse climate change's effects (decreased species' size, reduced economic return). Models are developed to study the

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[6]https://www.europarl.europa.eu/RegData/etudes/STUD/2022/699643/IPOL_STU(2022)699643_EN.pdf

[7] https://www.sustuntech.eu/the-project/

distribution of tuna catches, to monitor quota's consumption, and avoid areas with higher risks of by-catches.

Dr Rachel Tiller, Chief Scientist at SINTEF Ocean for the Department of Fisheries and New Biomarine Industry, coordinates the EVERYFISH project.

EVERYFISH is a sister project of Fish-X and focuses on automatic catch identification systems using AI and machine learning for monitoring and control. Catch registration is a challenging job for fishers today, with the manual logbook recording. As for the workspace of the fishers, however, it is not always easy to digitalise and there is some reluctance to change to this digital work environment. The monitoring and control argument is also not very popular for fishers.

EVERYFISH aims to count every fish as it comes onboard the vessel though, automatically. As we are in the middle of a biodiversity crisis with changing distribution patterns and stock shifting of fish, there is a need to increase the knowledge of the marine ecosystems to enable the possibility of increased harvest more from the ocean.

AZTI, the Spanish scientific and technological centre, is a member of this transdisciplinary consortium as well. EVERYFISH will develop sensors that create 3D models and digital twins of the fish. As the fish comes out on a sorting table or on the conveyor belt, the AI will be trained to recognise the size, weight and species of the fish. By doing this, fishers, consumers and managers can therefore gain knowledge of what fish was caught and where. It also locks in data and transfers this, so that when landing the fish, the data is fully transparent and the reporting burden for fishers has also been lifted, and trust can increase. Consumers will also be able to scan a QR code to get more data about seafood products in the future.

Ten different technologies will be developed for several fisheries (tuna, pelagic, demersal, recreational and SSF). For SSF, smartphones will be the primary tool to estimate the weight and species' recognition.

Ramón de la Figuera Morales, Fisheries Counsellor to the Spanish Permanent Representation to the EU, detailed ongoing Spanish initiatives to digitalise fisheries[8].

On the revised control regulation, Spain welcomed the agreement. Spain works closely with the EU Fisheries Control Agency (EFCA) that is located in Vigo, Spain.

The Spanish government tries to be in advance of the control regulation with the iPESCA project for small vessels using the phone for geolocalisation and catch data. There is a test with operators to gather data on control for the sake of science and for fishers operating near the coast.

Thanks to the resilience and recovery fund of the EU[9], the Spanish government released a call for grants for the digitalisation of the Spanish fisheries. Fifteen projects received funding already, such as the Smart Fish aiming to give more information to consumers by the national fishmonger's association. Another project called MarineView, co-developed by AZTI and marine instruments, intends to install an oceanographic analysis system. The system comprises different types of information, including temperature, chlorophyll concentration current, depth of thermocline, and buoy information. It brings better knowledge of the fishing area, optimises routes to save gas use and reduce bycatch. It can also help to comply with the margin of tolerance for bycatches.

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[8] Sidenote by the author of the summary report: the Spanish Presidency of the EU Council started on 1st of July 2023 and will go on until the end of December 2023. Its priorities are listed in the Programme, stating the following for fisheries (p49): "*As regards fisheries, the Spanish Presidency will promote the decarbonisation of the fishing industry, fostering the search for sustainable alternatives that are economically and functionally viable, through investment in sustainability, innovation and digitalisation.*"

[9] https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en

9. Questions and answers

After the presentation of each panellist, there was a 'questions and answers' session moderated by Antonia Leroy.

- *How do we ensure that fishers adhere to this digital transition? What incentives do they need?*

Rachel Tiller: Fishers have to see the benefit by emphasising the economic benefits (saving time and avoiding fines). It is important to bring them along in the process from the beginning to make it work.

Francesca Arena: Consumers ask for more and more information (who, what fish, where) which can be fulfilled through good reporting. By ensuring reporting is made easy, operators may increase the value of seafood products. The other factor is that it is hard to convince everyone if not all are on board across the EU continent. The ones who do not comply have to be sanctioned.

Jose Fernandes: We need to recognise the hard work and difficult working conditions at sea for fishers. The key support for the SusTunTech project came from a fishing company. There was strong communication, and some time was taken at the beginning to sit down and discuss with a wide range of actors. It is important that all involved parties are around the table and willing to cooperate. Also, there is the perception that fishers are being asked for things that are not requested for others regarding sustainability and control, whereas there are imports not complying with EU rules. This perception is persistent, even though biased, and needs to be tackled.

Ramón de la Figuera Morales: Artisanal vessels want to fish better by avoiding bycatch, reducing fuel consumption. Once the technology is settled, all of them will come on board.

Marta Cavallé, Low Impact fishers of Europe (LIFE): To add on to the same question, LIFE realised in the last years that the exemptions for SSF undermined the sector, with less access to quotas for example. LIFE is welcoming this revised control regulation. The digitalisation faces some challenges with regards to the ageing of the sector but this can also be a driver for the new generation. The technology should be used to fish better and have a better life, reducing the administrative burden. The collected data can help differentiate SSF products from large-scale vessels to sell better. Another important issue is that this data collected by technology shall still belong to the fishers to enable them to use it for co-management and ecological knowledge development.

- *For the Fish-X Data Space, how do you intend to combine data availability and ensure data quality?*

Marcel Louwers: The Data Space works by sharing information about data you want to share in a very explanatory way. One aspect to ensure quality is how much the data is described, the better it is, the better the quality will be. The second option is to have an AI pipeline to scan the data. For Fish-X, each data file will be checked up.

10. Conclusion

Finally, the high-level event concluded with Francisco Guerreiro's speech, Member of the EU Parliament.

As a result of the conversation, the first key word is cooperation within several layers of society (EU institutions, NGOs, IT, fishers). Science is being undermined, with the latest example of the Nature Restoration Law (NRL). The second key word is trust, fishers should be actively participating in all these pilots as there are the first recipients and their exemplary practices should be showcased.

Everyone is a politician, everyone votes, politics means being active in society. Being a scientist for instance is a political job. That is a very important project geopolitically speaking as the fishing industry in the single market deals with other stakeholders that do not apply the same methods, such as social standards. The EU needs to invest in this transition, and to bring everyone on board. The Fish-X project can lead by example and propose solutions for the future.

11. Acknowledgement

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