

TSG 1 Strategic Project Implementation

FishTourAIR - Fishing tourism and ichthyotourism diversification activities in the Adriatic-Ionian Region

The general objective of the FishTourAIR project is to assess the status of fishing tourism and ichthyotourism diversification activities in the Adriatic-Ionian (A-I) Region including both marine and freshwater bodies. A series of issues will be surveyed in the A-I Macroregion Countries, including infrastructure at national, regional and local level (depending on the partners that will be involved), seasonality, legal status, Safety of fishing vessels for passengers, types of vessels and vessel registries, vessel licensing rules and procedures, Broadening the context of the fisheries-related tourism in the A-I macroregion, training and certification needs and creation of support units for these activities like the successful FARNET for FLAGS.

Work plan and activities of the project idea

Infrastructure: National, regional, and local investments will support improved connectivity, access, and fishing facilities in a sustainable way. The infrastructure will aid fisheries-related tourism and regenerate maritime, river, and lake infrastructures.

Seasonality: This issue will be addressed through local events, museums, theme parks, and communication campaigns to provide year-round activities.

Legal status: Legal basis for fisheries-related tourism varies within the AI Macroregion Countries and the EU, necessitating harmonization, including defining fishing activities related to tourism, taxation regimes, and licensing procedures.

Safety of fishing vessels: Uniform safety regulations for tourist trips on fishing vessels are needed, including potential vessel redesign for safety and comfort, and provisions for commercial fisheries.

Broadening the context of fisheries-related tourism: The EU should define and harmonize "fisheries-related tourism" to promote responsible enjoyment of natural resources.

Training needs: Training courses should be developed for fishermen, their families, and locals, ensuring necessary skills for welcoming tourists and promoting local knowledge.

Support units: An A-I macroregion fishing network should be established, using environment-friendly business models and working closely with local action groups.

Expected results of the project include:

- Establish a list of required infrastructure,
- Address seasonality by proposing year-round activities,
- Recommend harmonization or creation of legislation, including for brackish and freshwater bodies,
- Study passenger safety on fishing vessels and funding options,
- Foster partnerships with the fishing tourism sector, particularly in MPAs and Natura 2000 sites,
- Develop custom training courses for fishermen, their families, and locals,
- Promote women's roles in the fishing tourism sector,
- Establish an A-I fishing tourism network similar to FARNET,
- Investigate socio-economic and environmental impacts of fisheries-related tourism,
- Enhance funding access through a business plan draft.

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AIM-FRISH - Evaluating freshness and authenticity with real-time non-destructive methods to increase the value added of Adriatic Ionian macroregion produced fish

The AIM-FRISH project aims to evaluate fish freshness and predict shelf life of various species using sensory, chemical, natural, and microbiological methods, with portable devices. This will help estimate time since catch/harvest swiftly and accurately. We'll also verify authenticity and origin to combat fraud and enhance traceability. The project focuses on both high-priced and high-volume species. Freshness assessment will use techniques like organoleptic evaluation, ATP levels, biogenic amines, TVB-N, VOCs, texture, color, pH, NIR, and microbiological analyses. Goals include developing assessment models, calibrating portable devices, detecting adulteration, exploring non-destructive quality/authenticity evaluation, creating a quality control protocol, labeling products for safety, improving enterprise competitiveness, recording catches and purchasing trends, applying real-time freshness determination, maximizing value through a quality label, and developing seafood traceability solutions.

Work plan and activities of the project idea

The project consists of three work packages (WPs), alongside management and dissemination tasks. WP1 evaluates fish quality and authenticity via lab methods like organoleptic evaluation, biochemical tests (ATP levels, biogenic amines, TVB-N, VOCs), physical analyses (texture, chromatometry, pH, NIR), microbiological assessment, and nutritional value examination. Deliverables include interim and final reports on quality and authenticity assessment.

WP2 studies the implementation of a quality and authenticity label for EUSAIR countries' fish and shellfish. It involves creating questionnaires, assessing vulnerability to food fraud, developing a quality control protocol, and conducting a feasibility study for costs of labelling application.

WP3 implements non-destructive devices for real-time quality and authenticity checks and develops solutions for seafood traceability and data transmission. It includes recording catches, sample collection, pilot tests of portable devices, and traceability system development.

Expected results of the project include:

The project aims to:

- Develop fast techniques for freshness determination of important AIM commercial species.
- Calibrate portable devices for freshness assessment and non-destructive quality and authenticity evaluation.
- Develop a quality control and authentication protocol for AIM seafood products.
- Label fishery products for increased safety and reduced fraud risk.
- Enhance AIM fresh fish producing enterprises' competitiveness.
- Apply real-time non-destructive freshness determination in the supply chain.
- Maximize the added value of fresh AIM fish through quality labels.
- Develop traceability solutions and electronic data transmission.

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SeaSusPack - Sustainable packaging of fish and seafood based on marine bioresources

The main aim is to optimize new value-chains for fish and seafood destined for the EU market, enhancing product handling and transportation for better quality and reduced post-harvest losses. Key objectives include:

- Introducing eco-friendly, low carbon packaging derived from marine biomass to maintain product quality from harvest to consumption.
- Increasing sustainability in the fish and seafood sector by extending perishable products' shelf life, thus reducing food waste.
- Lowering packaging waste with non-plastic, biodegradable solutions.
- Comparing the sustainability of new packaging methods with standard fish and seafood packaging.
- Supporting the implementation of Blue Growth objectives and the European integrated food safety policy.
- Facilitating interdisciplinary knowledge exchange to improve career prospects in and outside academia, bolster regional and EU competitiveness and growth, enhance food security, and boost exports.

Work plan and activities of the project idea

This project aims to create and test new biodegradable packaging systems for fish and seafood to improve product quality and safety. Two academic partners from Greece and Croatia will develop packaging from marine biomass, create new packaged fish and seafood prototypes, and evaluate the sustainability of these systems. The goal is to address the perishability of fish and seafood, which currently limits their marketability and causes waste. The project will leverage recent research into biopolymers from marine organisms, offering environmentally-friendly alternatives to synthetic plastics.

Expected results of the project include:

This project addresses significant fish and seafood waste due to spoilage during storage and transport. We aim to develop novel, efficient packaging solutions to enhance product quality, extend shelf life, and decrease waste. Key outcomes include:

- Innovative, safe fish and seafood product prototypes with high sensory appeal.
- Extended shelf life to reduce energy usage, food waste, and associated costs.
- Building a multidisciplinary team to drive innovation in the fish and seafood supply chain.
- Contributions to the European Bioeconomy strategy's goals, including food security, sustainable resource management, and job creation.

The project will boost competitiveness for SMEs and larger enterprises by offering innovative, sustainable solutions. We plan to develop at least 3 low-carbon packed fish and shellfish prototypes with improved quality and extended shelf life.

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EURYNOME - The Effects of anthropogenic pressures and climate change in the nutritional and commercial value of two small pelagic fish species of importance to ADRION region fisheries: Biodiversity and energy flow from the Ecosystem to the final product

This study aims to explore how climate change affects the diet and nutritional value of two important Mediterranean fish species - the sardine and the European anchovy. These fish, primarily consuming phytoplankton and zooplankton, are key sources of energy and fatty acids like EPA and DHA for higher trophic levels, including humans. Climate change's potential impacts on marine ecosystems might alter the quantity and quality of this energy flow. By examining how climatic conditions and geographical areas influence the fish's diet and subsequent nutritional properties, the study aims to predict climate change's effects on these species' fisheries and the overall energy flow in the marine environment.

Work plan and activities of the project idea

The project involves three main Work Packages (WPs):

WP1: Design and implement sampling from selected geographical areas at three levels: fish, plankton, and water (1-24 months). Deliverable: Report summarizing sample strategy and collection (Month 24).

WP2: Conduct taxonomical, biochemical, chemical, and genetic analyses of collected samples to identify differences due to seasonal/temporal changes, temperature, and geographical location (1-30 months). Deliverables: Reports detailing seasonal/temporal changes in planktonic organisms, biochemical components in fish muscle tissue and stomach contents, and physicochemical characteristics of water samples (Months 25-30).

WP3: Correlate physicochemical data to planktonic diversity and the fish species' nutritional characteristics. Establish relationships between environmental factors, plankton biodiversity, fish diet composition, and the presence of specific molecules like EPA and DHA. Develop mathematical models to predict climate change impacts on energy flow between trophic levels (1-36 months). Deliverables: Report on potential correlations (Month 30) and a mathematical model predicting possible effects of climate change (Month 36).

Expected results of the project include:

The project consortium will leverage extensive experience to deliver several outcomes:

- Enhance the value of sardine and anchovy fisheries by highlighting their nutritional qualities and potential regional/climate-related characteristics, in cooperation with fisheries associations, fish mongers, and regional authorities.
- Supply the processing industry with useful data on regional/seasonal qualities of raw material for optimal use in different processing methods.
- Support sustainable exploitation of regional stocks by identifying fishing periods where the fish offer the greatest nutritional value and/or conditions for producing high-quality processed products.
- Enhance understanding of planktonic biodiversity in the ADRION region and identify potential climate change risks, through comprehensive environmental sampling and advanced taxonomy/genomic/biochemical technologies.

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AMOS - Developing a cost – effective observatory system, tailored to the needs of Aquacultures with remote access, real-time data and forecast capabilities

The AMOS project plans to develop innovative, cost-effective marine monitoring technology for the aquaculture industry. Its objectives include analyzing current systems, defining the functions and requirements of new systems, designing a common system architecture to reduce costs, conducting lab and field tests, and finally, implementing it in coastal and aquaculture areas.

Work plan and activities of the project idea

The project is divided into three main work packages (WPs):

WP1: Design of the proposed observatory system (M1-12). Activities involve analysis of current marine water quality monitoring systems, defining requirements for new hardware and software components, and designing innovative products and services. Deliverables include a report on the current status and market research, technical specifications, and a design of the proposed system.

WP2: Development of the observatory (M1-30). The focus is on system architecture, developing hardware and software components, and producing a prototype and final observatory system. Deliverables are reports on the development of each component, the production of the system, and an integrated system report.

WP3: System testing and certification (M24-48). This includes laboratory and field testing of the prototype and final system, updates, and comparison with existing observatories. Deliverables are reports on each type of testing and system installation.

Additionally, two other WPs for management and dissemination are included.

Expected results of the project include:

- The expected results/outcomes of the project include:
- Facilitates the continuous monitoring of the marine environment in areas of high interest in the coastal zone by transmitting data from the marine observatory sensors at regular intervals.
- Contributes to technologically innovative solutions and methods for the development of new applications.
- Improves the quality of drawing conclusions by retrieving large amounts of data in real time.
- Proposes a new, sustainable and innovative business model that ensures cost effect and significant savings in the management of marine observatories while combining research with the modern availability of Internet and telecommunications services and mobile devices.
- Ensure the management production plan of aquacultures and connect it with environmental real-time data.