



EcoScope



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EcoScope Project Newsletter

Ecocentric management for sustainable fisheries and healthy marine ecosystems

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EcoScope is a Horizon 2020 research project funded under the Blue Growth Call

The Ecoscope project is co-ordinated by the Aristotle University of Thessaloniki (AUTH) and brings together 24 international partners from 18 countries across the UK, Europe, Scandinavia, Israel, Canada and the Philippines. The partners include universities and research institutions, NGO's, technology companies and businesses.

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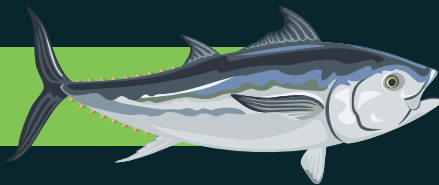


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Credits

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Project Summary



The EcoScope Project aims to promote effective and efficient, ecosystem-based approach to fisheries management. EcoScope will develop 3 key products: an interoperable platform (the EcoScope Platform), a robust decision-making toolbox (the EcoScope Toolbox), and a series of online courses (the EcoScope Academy). These tools will be available through a single public portal (EcoScopium), to promote an efficient ecosystem-based approach to the management of fisheries and achieve maximum and continuous participation of stakeholders.

The four-year (2021-2025) project addresses ecosystem degradation and anthropogenic impact that cause fisheries to be unsustainably exploited in several European Seas and promotes efficient, holistic, sustainable, ecocentric fisheries management that will aid towards restoring fisheries sustainability and ensuring balance between food security and healthy seas.



The project is co-ordinated by Aristotle University of Thessaloniki

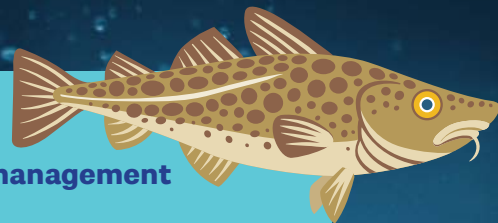
"Very much needed and ambitious project. I am interested to keep in touch and investigate together as a follow up how you could integrate the needs of the upcoming EC policy initiatives."

- EcoScope workshop participant from the European Commission

Editorial

Paradigm shift from anthropocentric to ecocentric fisheries management

Athanassios C. Tsikliras



Budget:
€7,919,413.75



Project Duration:
48 Months



Partners:
24 Partners

Fisheries exploitation has historically been considered as the strongest driver of fish population dynamics, while overfishing is the main cause of fish stock depletion at a global scale. Existing fisheries management practices have been rather unsuccessful in sustainably exploiting fish stocks because of weaknesses in management approaches, improper implementation, illegal fishing, and data deficiencies.

Commercial and recreational fishing strongly impact all levels of biological organisation and community structure including organisms, habitats and ecosystems raising a pressing need for a paradigm shift from anthropocentric (human-centred) to an ecocentric (ecosystem-centred) fisheries management, i.e., a holistic approach to managing fisheries in the context of an ecosystem.

EcoScope (Ecocentric management for sustainable fisheries and healthy marine ecosystems - Grant 101000302) is an H2020 funded project (BG-10-2020 work programme topic "Fisheries in the full ecosystem context") that aims to address ecosystem degradation, anthropogenic impacts and unsustainable fisheries and to co-design and promote efficient, holistic, sustainable, ecosystem-based fisheries management that will aid towards restoring fisheries sustainability and ensuring balance between food security and healthy seas.

The interdisciplinary consortium consists of 24 partners representing academia, research, NGO and SMEs with an extended geographical coverage across Europe that encompasses all European marine ecosystems included in the project. The total budget allocated to the EcoScope project is 7.92 million euros and the project duration is 48 months (2021-2025).

The overall objective of EcoScope will be achieved through the development of an interoperable platform and a robust decision-making toolbox that can be easily used by policy makers and advisory bodies. Various groups of end-users and stakeholders will be involved in the design, development and operation of both the platform and the toolbox that will be adaptive to their capacity, needs and data availability. The EcoScope tools, products services and outputs, will be available via

the EcoScope Portal, which will provide a single point of access.

The EcoScope Platform will organise and homogenise climatic, oceanographic, biogeochemical, biological and fisheries datasets across European Seas to a common standard type and format that will be available to the users through interactive mapping layers. The EcoScope Toolbox, a scoring system linked to the platform, will host the output of ecosystem models, socio-economic indicators, fisheries and ecosystem assessment tools that can be used to examine and develop fisheries management and marine policy scenarios. Temporal and spatial simulations will be performed using Ecopath with Ecosim (EWE) ecosystem models that will be developed in eight case study areas under uncertainty and deep uncertainty. A new edition of the Maritime Spatial Planning simulation platform (MSP Challenge simulation platform) will be developed in the eastern Mediterranean Sea to advance robust decision making under dynamic ecosystem conditions, varying climate projections and deep uncertainty. A series of sophisticated capacity building tools, such as online courses, documentary films, webinars and games, will be available to stakeholders through the EcoScope Academy. Finally, an EcoScope App will be developed to engage citizen science.

The specific objectives of EcoScope have been designed to fulfil the requirements of the Common Fisheries Policy (CFP), and the Blue Growth Strategy (BG) while also aiming to achieve Good Environmental Status (GES) for the descriptors of the Marine Strategy Framework Directive (MSFD), which all require an ecosystem-based approach. All Work Packages (WP) are aligned with the EU Green Deal, the EU Biodiversity Strategy for 2030, and the Maritime Spatial Planning (MSP) Directive.



The EcoScope Platform

A novel, interdisciplinary data visualisation, forecasting and analysis tool for fisheries management

Simon Keeble



The EcoScope Platform will be a novel, modular, interdisciplinary e-tool integrating met-ocean, biogeochemical, environmental, biological, fisheries, and socio-economic datasets, covering all European Seas. The e-platform will provide both primary data and on-demand derived data services including forecasts, through a single public portal to various end-user groups, stakeholders, and the broader public.

Through the EcoScope Platform, complex ecosystem functions and interrelations between abiotic-biotic-human components will be revealed and their spatio-temporal variability will be assessed and visualised. Data on oceanography, marine biogeochemistry, food webs, and ecosystem productivity within the framework of

climate change and increased anthropogenic forcing will be aggregated.

Data will be collected and homogenised in terms of data types and formats according to international standards (where these exist, e.g., WMO, SeaDataNet, FishBase) in accordance with fair data principles (FAIR).

The EcoScope Platform will be accessed through the EcoScope Portal.

The EcoScope Toolbox

A decision support tool for policymakers and fisheries managers

Dan Gerstenfeld



The EcoScope project is currently in the process of developing the EcoScope Toolbox, a novel, decision support tool, which will be available by the end of the project.

The Toolbox will use an ecosystem scoring system integrating oceanographic, climatic, environmental, habitat, biological, community, fisheries, and economic indicators aiming to provide a robust decision-making tool for the successful implementation of ecosystem-based fisheries management.

The Toolbox will be co-designed by end users and stakeholders, mainly policy makers and fisheries managers, based on their needs and will simultaneously consider a range of interdisciplinary indicators. The innovative Toolbox will be built using a Shiny app, which is useful to communicate information as interactive data explorations instead of static documents.

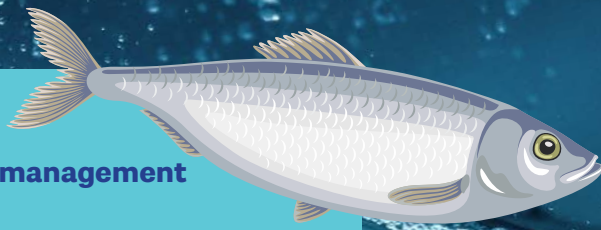
The main idea behind developing it is that the EcoScope Toolbox will become a universal tool for managing fisheries within the full ecosystem context and a global tool for fisheries management. The Toolbox will be validated and tested in all of the EcoScope case study areas and at different resolution levels. It will be available to access through the EcoScope Portal.



The EcoScope Academy

Comprehensive training materials for fisheries management

Dan Gerstenfeld



The EcoScope Academy will offer a wide variety of course and learning materials to all those interested in fisheries management. The materials will be available to access through the EcoScope Portal.

The EcoScope Academy includes a collection of online, self-paced, courses, webinars, hybrid courses, and online games. It will provide educational materials to postgraduate and undergraduate students, young scientists and policymakers.

The knowledge created in the EcoScope Toolbox and EcoScope Platform, as well as the scientific output of the EcoScope project, will be shared through capacity building in the EcoScope Academy, which will promote cross-community education and knowledge sharing.

The EcoScope Academy is based on the material from courses that are currently run by EcoScope partners, but will also create new material based on the outputs of the EcoScope project.

As part of the EcoScope Academy, an introductory course on ecosystem-based fisheries management is already available. Other courses, which have been planned within EcoScope include:

- Advanced Stock Assessment seminar courses delivered by GEOMAR, Helmholtz-Centre for Ocean Research, Institute of Ocean and Fisheries, University of British Columbia and the School of Biology, Aristotle University of Thessaloniki.
- Summer school in Oceanography and Fisheries run by the Democritus University of Thrace and the Aristotle University of Thessaloniki.
- Stock assessment courses run by Quantitative Aquatics, GEOMAR, Helmholtz-Centre for Ocean Research and the Institute of Ocean and Fisheries,

University of British Columbia

- Ecological modelling training courses of the Ecopath International Initiative



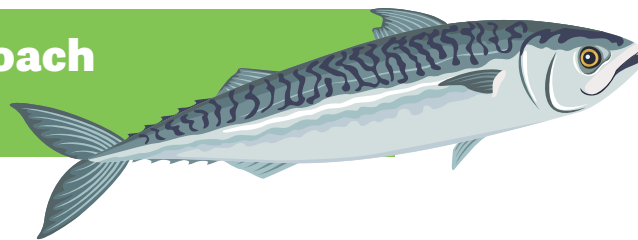
Promoting cross community education and sharing.

Material from these courses will be put together in a syllabus used for both traditional courses and life-long learning, or will be used to support online lectures. Scientific results from journals, ecological models, videos, photos and presentations will also be used to enrich the course content and promote interdisciplinarity.



End-user-focused Approach

Ana Rodriguez

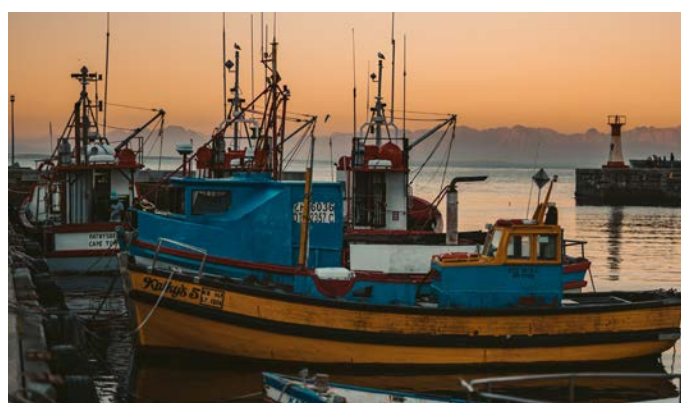


A key component of the EcoScope project is active and continuous engagement and input by related stakeholders. The EcoScope tools are intended for a wide range of users from decision-makers, regulators and advisory bodies to NGOs, scientists, fishers, and others interested in exploring different full ecosystem management options. This means that the requirements of end-users can vary dramatically – from end-users that want easy-to-understand summary results to those that need details, statistics, and the possibility to dig further and understand the background. It is therefore important to understand the needs of end-users and that these are addressed appropriately during the development of the tools. To this end, EcoScope strives to co-develop the EcoScope tools with end-users and stakeholders by involving them in the design and development of the tools.

Since the start of EcoScope in September 2021, EcoScope has performed two key stakeholder engagement activities, namely an online survey and a workshop. The survey was sent on 15 December 2021 to 33 stakeholders from 21 different organisations representing key European stakeholders in fisheries management. The aim of the survey was to understand the main needs, challenges and barriers stakeholders will have to use the EcoScope tools and/or their outputs. The second major activity was a stakeholder workshop (First EcoScope Foresight Workshop) held on 16 February 2022, in which stakeholders were asked to provide substantive feedback on the ongoing design and elaboration of the EcoScope e-tools. Twenty-four stakeholders (including policy/ regulatory stakeholders, advisory bodies and other groups, such as environmental NGOs, scientific associations and Ocean data aggregators) participated in the workshop, which also included 11 EcoScope Consortium members. The workshop used a set of scenarios as a starting point to obtain feedback on the EcoScope tools. In addition, three topics were selected for further discussion during the workshop: (i) addressing and communicating

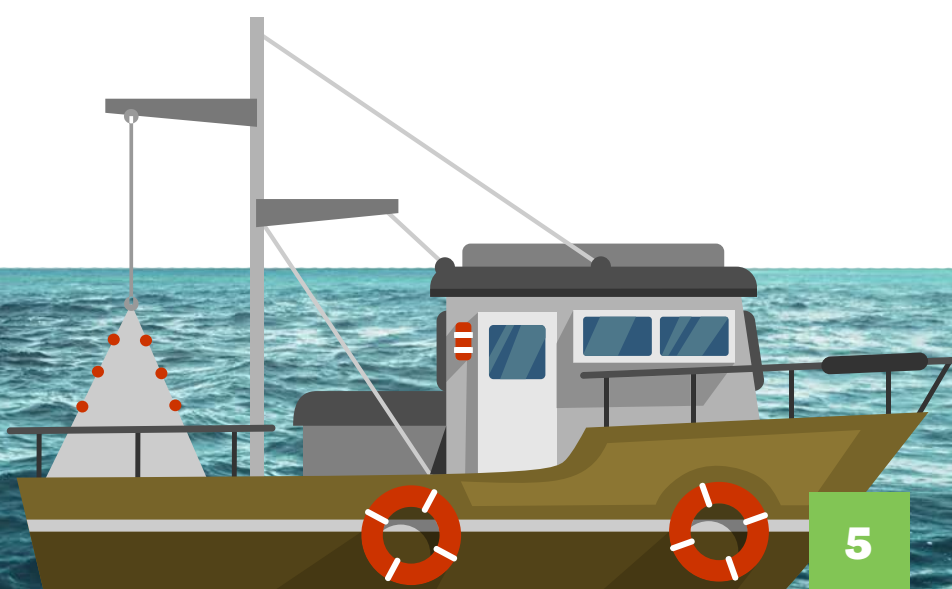
uncertainties; (ii) incorporating socio-economic data; and (iii) presenting data and information to different audiences.

These stakeholder engagement events are highly valuable for the development of the tools and have already provided important insights into key topics and issues to be considered as the project moves further. Further stakeholder engagement workshops are planned to continue to obtain feedback at various stages of the project, as well as to identify and address potential constraints.



Continuous engagement with stakeholders has been undertaken.

The Stakeholder Knowledge Exchange Forum comprises all interested stakeholders and end-users, and includes all stakeholder who have registered for it through the EcoScope website. This Forum will be a responsive and flexible venue that will be able to adopt the form of any working group, at any level (local, national, international) as needs arise. The project also invites public authorities (local, regional and national authorities dealing with environmental, fisheries, maritime, economic affairs, and related regulatory bodies) to be involved by co-designing and endorsing the project objectives and results. They will be kept updated on the results and will be invited to workshop and stakeholder meetings.



End-user-focused Approach (Continued)

Ana Rodriguez



In the near future the online EcoScope Academy will be created to improve the knowledge and skills of stakeholders and end-users on the ecosystem-based fisheries management. It will host sophisticated education material for online training courses, webinars and games. The Academy will be for end-users and related stakeholder communities, including scientists and fishers, who will benefit from the toolbox and platform for long-life learning on ecosystem-based fisheries management as well as for improving their professional skills. It will be based on the courses currently run by EcoScope partners, in a syllabus usable for traditional courses and life-long learning. The EcoScope Academy will also include live webinars, hybrid courses, digital games and self-paced online courses. Additional educational training will be provided in summer schools, master classes and seminar courses.

The final aspect of stakeholder engagement will be the EcoScope App. The EcoScope App will be a mobile application for promoting user engagement to marine ecosystem protection. The app will enable citizens to report on marine hazards, illegal fishing practices and removal or stranding of protected species.

All EcoScope tools (i.e. the EcoScope Platform, EcoScope Toolbox, EcoScope Academy and EcoScope App) will all be available in the EcoScope Portal and will be maintained after the funded phase of the project finishes (in August 2025). The sustainable operation and maintenance of the products and services of EcoScope will allow balancing free access to (primary) data and on-demand, derived information with innovative products and services for policy-makers and end users. The EcoScope Consortium, and especially the industrial

partners, will focus on developing strategies to maintain the innovative nature of the EcoScope products and services to appeal to the end-users, and will assess the market create business plans for the exploitation of these products and services.

If you are interested in the EcoScope project and its tools and you want to stay in touch please subscribe to our Stakeholder Knowledge Exchange Forum. You can also subscribe through the EcoScope website (by clicking on "Stakeholder Forum Registration" on the top of the website).



Discussion during the First EcoScope Foresight workshop on key needs and concerns of stakeholders.







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