

Üniversitemizden Karadeniz Balıkçılığına Uluslararası Bilimsel Katkı

8 Ekim 2026

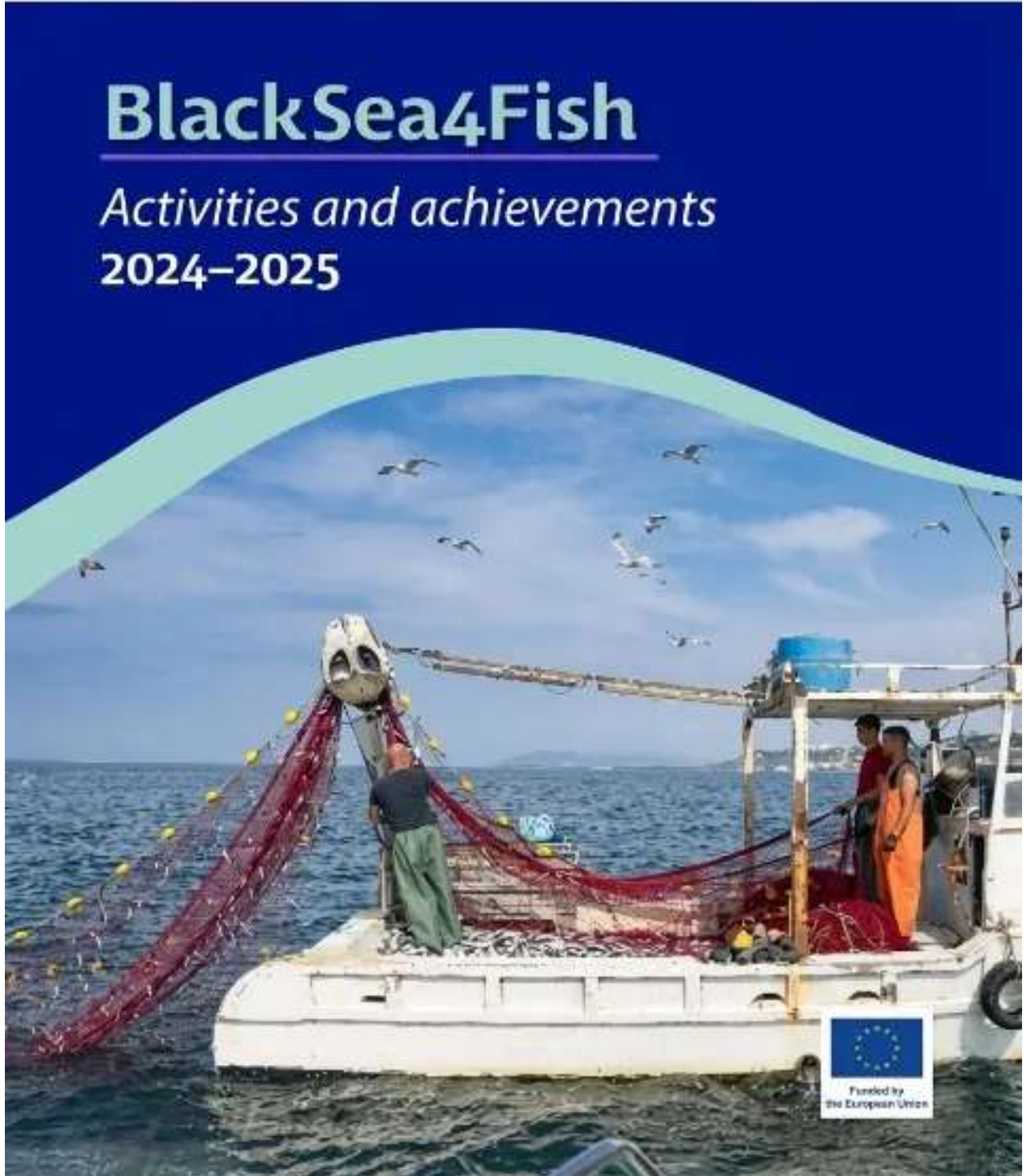
Paylaş



Food and Agriculture
Organization of the
United Nations



General Fisheries
Commission for
the Mediterranean



Üniversitemiz Su Ürünleri Fakültesi Avlama ve İşleme Teknolojisi Bölüm Başkanı Prof. Dr. Hüseyin Özbilgin'in koordinatörlüğünde yürütülen BlackSea4Fish Programı'nın 2024–2025 döneminde gerçekleştirdiği 36 faaliyeti ve elde edilen kazanımları bir araya getiren kitap, Birleşmiş Milletler Gıda ve Tarım Örgütü (FAO) tarafından yayımlandı.

BlackSea4Fish – Activities and Achievements 2024–2025 başlıklı yayında; balık stoklarının değerlendirilmesi, bilimsel araştırma ve deniz sörveyleri, küçük ölçekli ve amatör balıkçılık, izleme ve denetim sistemleri, ıskarta ve hedef dışı avların azaltılması, hassas türlerin korunması, seçici av araçlarının geliştirilmesi, sosyoekonomik araştırmalar, eğitim ve bölgesel iş birliği gibi geniş bir alanda gerçekleştirilen çalışmalar ele alınıyor. Kitap, söz konusu faaliyetleri BlackSea4Fish'in beş temel çıktısı altında sunarak Karadeniz ülkelerindeki bilimsel ve teknik kapasitenin güçlendirilmesine yönelik iki yıllık çalışmaların somut sonuçlarını ortaya koyuyor.

BlackSea4Fish, Akdeniz Genel Balıkçılık Komisyonu'nun (GFCM) Karadeniz'e yönelik kapasite geliştirme programlarından biri olarak 2016 yılından bu yana yürütülmekte olup; Program, Karadeniz ülkelerindeki bilimsel ve teknik uzmanlığın geliştirilmesini, ülkeler arasında ortak bilimsel yöntemlerin yaygınlaştırılmasını ve sürdürülebilir balıkçılık yönetimine yönelik bilimsel tavsiyelerin güçlendirilmesini amaçlıyor.

Aynı zamanda GFCM'nin Akdeniz ve Karadeniz'de sürdürülebilir balıkçılık ve su ürünleri yetiştiriciliğine yönelik 2030 Stratejisi'nin uygulanmasına katkı sağlayan program, Avrupa Birliği'nin ana finansal desteği ve farklı uluslararası proje ve ortakların katkılarıyla gerçekleştiriliyor. Programın koordinasyonunun Üniversitemiz Su Ürünleri Fakültesi öğretim üyesi Prof. Dr. Hüseyin Özbilgin tarafından yürütülmesi, Üniversitemizin balıkçılık bilimleri alanındaki bilgi ve deneyiminin FAO ve GFCM çatısı altında Karadeniz ölçeğinde bilimsel çalışmalara ve sürdürülebilir balıkçılık yönetimine aktarılmasına önemli katkı sağlamakta.

[Kitaba Erişmek İçin Lütfen Tıklayınız.](#)

Basın ve Halkla İlişkiler Şube Müdürlüğü

Fotoğraf Galerisi





Food and Agriculture
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General Fisheries
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the Mediterranean

BlackSea4Fish

Activities and achievements 2024–2025



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the European Union

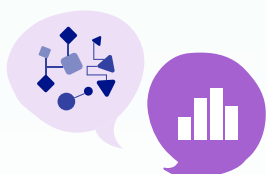
Executive summary

Established in 2016, BlackSea4Fish is one of the two capacity development programmes of the General Fisheries Commission for the Mediterranean (GFCM). Since its inception, it has played a central role in advancing the objectives of the GFCM 2030 Strategy for sustainable fisheries and aquaculture in the Mediterranean and the Black Sea (GFCM 2030 Strategy).

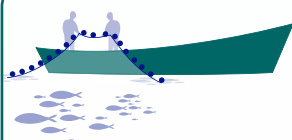
It provides scientific and technical support to the work of the GFCM in the region, while coordinating the priority activities of the GFCM Subregional Group on Stock Assessment in the Black Sea (SGSABS) and the Scientific Advisory Committee for the Black Sea, which has replaced the Working Group on the Black Sea (WGBS) as of November 2025.

BlackSea4Fish is implemented as an umbrella programme, with funding from its main donor, the European Union, along with additional contributions from the Global Environment Facility-funded “Fisheries and ecosystem-based management for the Black Sea” project (FishEBM BS) and in-kind support from select countries.

This brochure summarizes the BlackSea4Fish activities and achievements over the 2024–2025 biennium, grouped according to their relevance to the five main outputs of BlackSea4Fish, reflecting its integrated approach. Over 2024–2025, BlackSea4Fish implemented a total of 36 activities to strengthen regional expertise and technical capacities.



Under **Output 1**, BlackSea4Fish organized data preparation meetings and age reading workshops, supported benchmark assessments of priority species, and conducted standardized demersal trawl surveys and comparative hauls under the International bottom trawl survey in the Black Sea (iBotS) programme. These efforts were complemented by rapa whelk beam trawl surveys and the standardization of pelagic acoustic surveys.



Under **Output 2**, BlackSea4Fish improved knowledge on small-scale and recreational fisheries by conducting local ecological knowledge (LEK) studies, analysing the socioeconomic aspects of small-scale fisheries and launching the research programme on recreational fisheries.



Under **Output 3**, BlackSea4Fish strengthened national monitoring, control and surveillance (MCS) frameworks through legislative and institutional workshops. It also piloted several vessel monitoring system (VMS) solutions.



Under **Output 4**, BlackSea4Fish improved discard and bycatch monitoring through observer coverage programmes and selectivity trials within the framework of the pilot project to assess cetacean bycatch in Black Sea turbot gillnet fisheries and to test measures to mitigate the incidental catch of cetaceans (CetaByM) and the discard monitoring programme.



Under **Output 5**, BlackSea4Fish reinforced regional cooperation and disseminated results through stakeholder meetings, awareness-raising campaigns and trainings on the safe handling and release of vulnerable species.



Output 1

Scientific advice in support of fisheries management

Over 2024–2025, BlackSea4Fish supported a range of activities addressing data gaps and harmonization needs identified by the SGSABS, with the aim of strengthening scientific advice for Black Sea priority species.

These activities included:

- the standardization of demersal trawl surveys;
- the implementation of eight rapa whelk beam trawl surveys;
- the coordination of six workshops and three meetings focused on improving data quality for stock assessment;
- progressing on the sturgeon pilot project and the research programme on piked dogfish; and
- working towards the standardization of pelagic acoustic surveys.

Activities and achievements in numbers

Demersal species

5

standardized demersal trawl surveys

20

pairs of comparative hauls

106

stations sampled

2

regional evaluation meetings to review the rollout of the surveys

2

age reading workshops

Rapa whelk

8

beam trawl surveys

290+

hauls

Sturgeon

329

structured interviews

641

hot spot areas mapped

544

gear-specific bycatch records documented

1

technical review conducted in 5 countries

International bottom trawl survey in the Black Sea

update of the manual

Piked dogfish

2

studies of at-vessel mortality and short-term vitality

247

individuals studied

96

interviews conducted to gather local ecological knowledge

Small pelagic species

1

acoustic survey protocol prepared and 1 training held

2

age reading workshops

Stock assessment for Black Sea priority species

3

data preparation meetings



Black Sea anchovy
Engraulis encrasicolus



European sprat
Sprattus sprattus



Horse mackerel
Trachurus mediterraneus



Whiting
Merlangius merlangus



Turbot
Scophthalmus maximus



Red mullet
Mullus barbatus



Rapa whelk
Rapana venosa



Piked dogfish
Squalus acanthias

Achievement 1. Standardization of demersal trawl surveys in the Black Sea

The iBotS programme aims to harmonize fishery-independent data collection through standardized protocols, delivering comparable indices for four GFCM Black Sea priority species:



turbot (*Scophthalmus maximus*)



piked dogfish (*Squalus acanthias*)



red mullet (*Mullus barbatus*)



whiting (*Merlangius merlangus*)

Between winter 2023 and autumn 2025, the iBotS programme implemented and evaluated standardized demersal trawl surveys in Georgia and Türkiye, as well as comparative hauls in Bulgaria and Romania. It also updated the iBotS manual, addressing technical issues identified during field implementation and incorporating expert feedback.



Testing of the standardized demersal trawl in Trabzon, Türkiye.

Technical activity 1. Implementation of standardized demersal trawl surveys

2023–2025

Bulgaria, Georgia,
Romania and Türkiye

Five standardized demersal trawl surveys were implemented under the iBotS programme (three in Türkiye and two in Georgia), as well as 20 pairs of comparative hauls, with ten conducted in Bulgaria and ten in Romania. The surveys followed the standardized protocols of the iBotS manual, while the comparative hauls focused on evaluating fishing gear performance and methodological alignment. Together, these activities aimed at strengthening regional harmonization and expanding the fishery-independent dataset needed to assess the stocks of Black Sea priority species.

Results

In Türkiye, the Central Fisheries Research Institute (SUMAE) conducted two standardized surveys in winter 2023–2024 and autumn 2024, sampling 66 stations per season and collecting data on all priority species. The institute also completed an additional survey, in autumn 2025, deploying standardized fishing gear across all designated strata and providing an additional annual data point for priority species distribution and abundance.

In Georgia, the National Environment Agency (NEA) implemented its first standardized demersal trawl survey under the iBotS programme on 30 January–2 February 2025, sampling 20 stations across all depth strata. The agency also completed an additional survey on 5–8 May 2025, providing seasonal data and confirming marked shifts towards shallower habitats for several species.

In Bulgaria, the Institute of Fish Resources carried out ten comparative hauls in autumn 2025, applying standardized iBotS fishing gear requirements, with two Romanian trawl survey experts on board to support implementation.

In Romania, the National Institute for Marine Research and Development (NIMRD) carried out ten comparative hauls in winter 2025, demonstrating the improved catch efficiency of standardized fishing gear, notably for whiting, red mullet and piked dogfish.



Onboard handling of a thornback ray caught as bycatch during demersal trawl survey operations in Georgian waters.

Technical activity 2. Evaluation of standardized demersal trawl surveys

30 January 2024 and 7 April 2025
Online

Two regional evaluation meetings were held to review the rollout of the five standardized demersal trawl surveys. The first meeting focused on discussions and operational considerations following Türkiye's initial implementation of the standardized protocols of the iBotS manual, while the second meeting gathered national experts to discuss survey implementation across countries, methodological alignment and coordination of forthcoming activities under the iBotS programme.

Results

The evaluation of Türkiye's first demersal trawl survey highlighted the importance of optimal seasonal timing due to winter anoxic conditions in deeper strata and the need to resolve minor inconsistencies between fishing gear technical drawings and their construction.

In April 2025, the regional evaluation meeting reviewed progress not only in Türkiye, but also in Georgia and Romania, and noted Bulgaria's commitment to initiate comparative hauls in autumn 2025. Discussions focused on improving catch processing workflows, refining subsampling procedures, ensuring greater consistency in maturity staging and strengthening the documentation of interactions with vulnerable marine ecosystems and protected species. Additional training needs were identified, including practical, hands-on training in trawl-sensor deployment.

A proposal was introduced to monitor fuel consumption during surveys as an environmental performance indicator.

Links

[Report of the evaluation of the first demersal trawl survey conducted in Türkiye](#)

[Report of the evaluation of the 2024 Black Sea demersal trawl surveys](#)

Technical activity 3. Update of the International bottom trawl survey in the Black Sea manual

Following the evaluation of the first standardized demersal trawl survey in Türkiye, the iBotS manual underwent two rounds of updates to address technical issues identified during field implementation, incorporate expert feedback and further harmonize data collection procedures across Black Sea countries. These updates aimed to enhance clarity, accuracy and consistency in the implementation of standardized demersal trawl surveys.

Results

In February 2024, version v1.1 of the iBotS manual was issued, including minor corrections to sampling gear technical drawings and to the templates for time-zero and periodic gear checks. The subcategories of marine litter in the Type L file templates were revised to improve reporting consistency and the catch-processing workflows for piked dogfish was updated so that age reading is conducted only on dead individuals.

In April 2025, an updated version of the iBotS manual (v1.2) was released, incorporating guidance on documenting vulnerable marine ecosystem interactions and introducing fuel consumption as a new indicator within the environmental performance monitoring framework.

Link

[iBotS manual](#)

Achievement 2. Rapa whelk beam trawl surveys

The WGBS agreed that, despite its invasive nature, rapa whelk (*Rapana venosa*) should be exploited within biologically safe limits and managed accordingly.

In this respect, the GFCM adopted Recommendation GFCM/42/2018/9 on a regional research programme for rapa whelk fisheries in the Black Sea (geographical subarea 29), under which fishery-independent beam trawl surveys have been conducted regularly since 2020 to strengthen the scientific, technical and socioeconomic knowledge of the fishery.

Between autumn 2023 and spring 2025, coordinated beam trawl surveys were carried out in Bulgaria, Georgia, Romania and Türkiye to further monitor the spatial distribution and abundance of rapa whelk in the Black Sea.



Processing of rapa whelk samples during beam trawl survey operations in Turkish waters.

Technical activity 1. Rapa whelk beam trawl surveys

Spring and summer 2024,
spring 2025
Bulgaria, Georgia,
Romania and Türkiye

Five surveys were conducted in Bulgaria, Georgia, Romania, and eastern and western Türkiye between spring and summer 2024. Survey coverage continued in Bulgaria and both regions of Türkiye in spring 2025 through three additional surveys. These surveys aimed to continue the collection of fishery-independent data to support stock assessments in the Black Sea.

Results

In 2024, more than 290 hauls were conducted in total, and 243 stations were sampled during the spring 2025 surveys.

Data quality was checked using the RomeBS routine developed specifically for this survey. Data from all survey periods were then analysed using the BiIndex routine.



Beam trawl survey operations in Turkish waters.

Achievement 3. Information for stock assessment of priority species improved

Progress in improving stock assessment inputs for priority Black Sea species advanced substantially over 2024–2025. Two workshops supported stock assessment work and strengthened the application of surplus production models. In parallel, data preparation meetings contributed to the standardization, validation and quality control of both fishery-dependent and fishery-independent datasets for priority species, resulting in more consistent and reliable inputs for stock assessments and benchmarks.

In addition, four age reading workshops were organized for European sprat, turbot, whiting and horse mackerel, leading to improved consistency in otolith interpretation, harmonized age–length methodologies and progress towards shared regional protocols. The age–length keys (ALKs) required for stock assessment modelling were produced based on collective age readings from these workshops.

Technical activity 1. Workshop on surplus production models

5–7 March 2024
Online

This workshop aimed to strengthen the capacity of Black Sea national experts by providing theoretical and practical knowledge on the implementation of the Stochastic Production Model in Continuous Time (SPiCT) and Just Another Bayesian Assessment (JABBA) models to support the work of the SGSABS.

Results

The workshop addressed issues related to analysing and interpreting input data, building and explaining a range of scenarios underlying different stock dynamic assumptions, evaluating the assessment of both quality and plausibility through diagnostics, performing sensitivity analysis and defining stock status.

Participants gained elements to study and improve the assessments of Black Sea anchovy, European sprat and rapa whelk, each under benchmark, as well as piked dogfish.

The assessments of Black Sea anchovy, rapa whelk and piked dogfish were performed with SPiCT. To date, approximately 38 percent of the assessments for priority species in the Black Sea use this surplus production model to provide advice on the status of the stock.

Link

[Report of the workshop on surplus production models](#)

Technical activity 2. Workshop on validating and creating stock input data to perform stock assessment

3–5 April 2024
Constanta, Romania

This workshop aimed to strengthen the technical capacity and autonomy of Black Sea national experts in stock assessment by providing training and introducing a standardized framework for analysing and preparing inputs such as length–frequency data, growth parameters and catch-at-age information. Using European sprat as a case study, participants learned how to conduct quality checks and generate the stock inputs required for assessment models.

Results

Standardized data inputs were agreed, requiring all countries to use the updated stock template and stock assessment forms, apply harmonized size bins, document any data change, report methods consistently, and use adapted R scripts for processing.

Responsibilities for stock coordinators were clarified, including compiling and checking all data, adjusting templates as needed, reviewing landings, justifying any deviations, and collaborating with experts on assessment assumptions.

Data quality control was strengthened, with all data quality checks to be completed prior to assessments. National experts should actively contribute to resolving data gaps or inconsistencies to ensure reliable stock assessment inputs.

Link

[Report of the workshop on validating and creating stock input data to perform stock assessments](#)



Participants in the workshop on validating and creating stock input data to perform stock assessments at the National Institute for Marine Research and Development centre in Constanta, Romania.

Technical activity 3. Data preparation meetings for stock assessment

3–7 June 2024
Online

9–13 June 2025
Hybrid, Batumi,
Georgia

10–14 June 2024
Hybrid, Constanta,
Romania

Between 2024 and 2025, the three data preparation meetings were held. They focused on compiling, reviewing, discussing and analysing fishery-dependent and fishery-independent data to support benchmark sessions for Black Sea anchovy and European sprat, as well as stock assessments for Black Sea priority species, including horse mackerel, turbot, whiting, red mullet, piked dogfish and rapa whelk.

Results

Excel stock objects with input data for Black Sea anchovy and European sprat were prepared and quality checked in view of the benchmark sessions, and detailed workplans were agreed in the context of providing scientific advice for these species.

A new stock template was adopted in 2024 for Black Sea priority species to simplify future work by storing all information in a single file updated annually. Roadmaps were created to address key data issues, improve data quality and support subsequent assessments.

These roadmaps were updated in 2025 and two additional roadmaps created for European sprat and Black Sea anchovy. Data gaps for each priority species were identified and earmarked for completion ahead of the SGSABS meeting. It was agreed that, where feasible, initial trial runs of the stock assessment models used in the previous year would be conducted using the currently available datasets. It was also agreed the 2025 SGSABS meeting would proceed with different scenario and sensitivity analyses.

Links

[Report of the data preparation meeting on Black Sea anchovy and European sprat](#)

[Report of the 2024 data preparation meeting on Black Sea priority species](#)

[Report of the 2025 data preparation meeting on Black Sea priority species](#)

Participants in the 2024 Subregional Group on Stock Assessment in the Black Sea data preparation meeting at the NIMRD centre in Constanta, Romania (right).



Participants in the 2025 Subregional Group on Stock Assessment in the Black Sea data preparation meeting at the National Environment Agency centre in Batumi, Georgia.

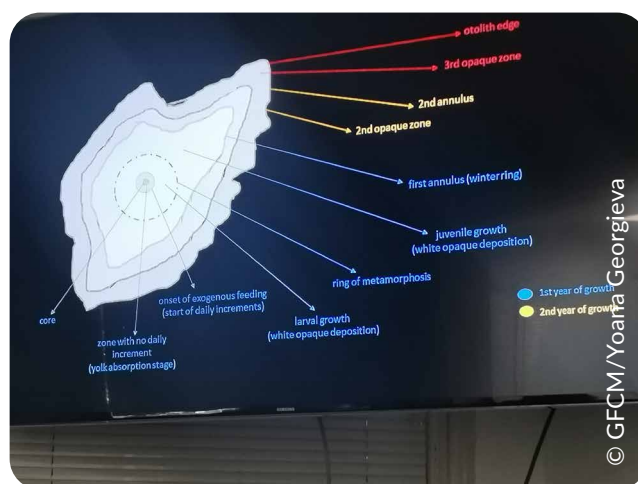
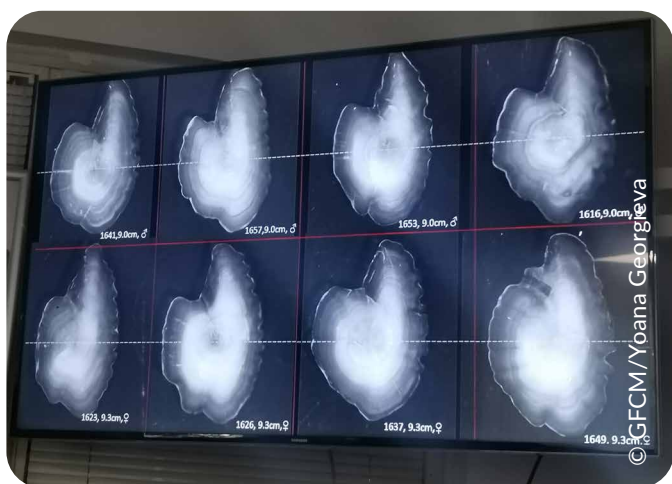
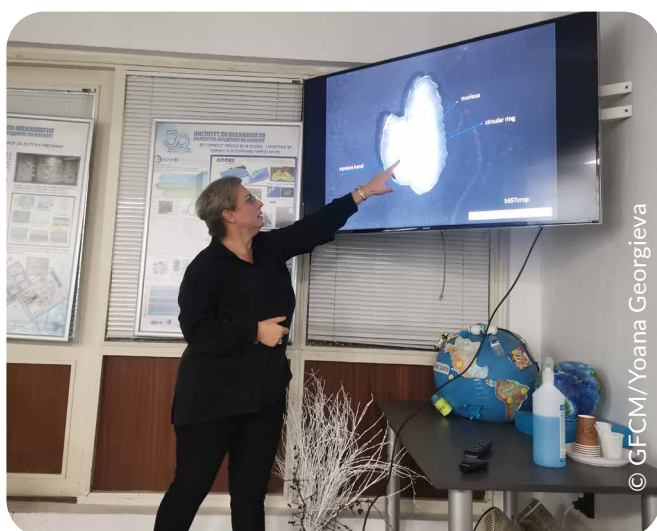
Technical activity 4. Workshops on age reading of European sprat, horse mackerel, turbot and whiting

18–22 November 2024 Varna, Bulgaria	4–8 November 2025 Batumi, Georgia
3–7 February 2025 Trabzon, Türkiye	26–30 May 2025 Trabzon, Türkiye

Between 2024 and 2025, BlackSea4Fish delivered substantial work on age reading through four workshops on European sprat, horse mackerel, turbot and whiting. These workshops brought together 13, 9, 13 and 11 experts respectively from five countries (Bulgaria, Georgia, Romania, Türkiye and Ukraine) with the aim to strengthen regional consistency in age determination practices. Building on needs identified by the SGSABS, these workshops focused on assessing regional differences, harmonizing age reading methodologies and developing standardized age determination guidelines for each species.

Results

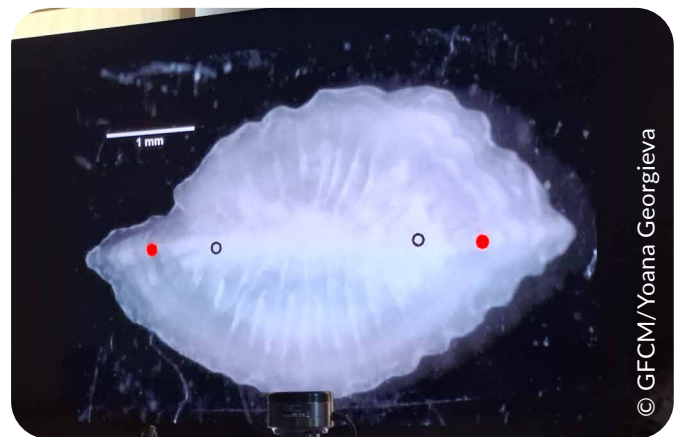
During the European sprat age reading workshop, approximately 200 otoliths were collaboratively read, revealing clear regional differences in European sprat growth and ALKs. Weak agreement among readers suggested that cohort inconsistencies stemmed not only from biological variation but also from differing otolith interpretations, highlighting the need for harmonized age determination criteria and regular age-reading workshops every three to four years to update ALKs and support length–frequency distribution-based catch-at-age estimates. Bulgarian size class grouping differed from that of other countries, creating inconsistencies in length–frequency distribution. Participants developed a high-quality consensus-based dataset and endorsed the creation of a regional portal for reference material and training, with support from the GFCM through BlackSea4Fish.



Experts presenting European sprat age reading.

(Continued)

During the horse mackerel workshop, Bulgaria, Georgia, Romania, Türkiye and Ukraine agreed to continue collecting horse mackerel otoliths, providing samples with full biological data (length, weight, sex, date and region) for future workshops. Participants recommended a follow-up workshop to review the workflow and complete age validation under the guidance of a reference reader.

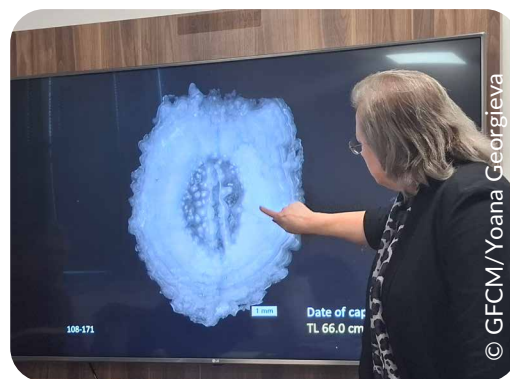
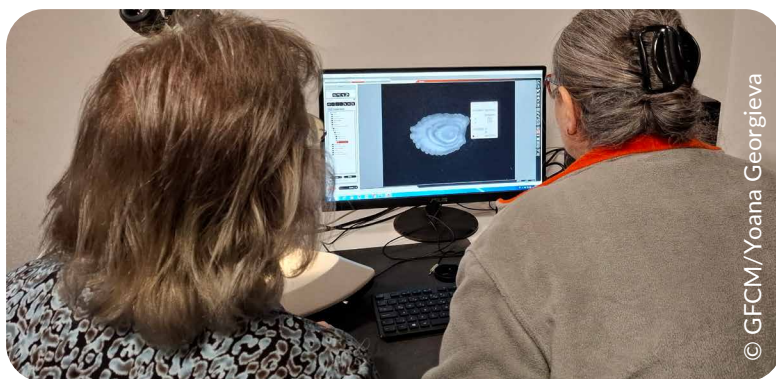


Experts presenting European sprat age reading.

During the turbot age reading workshop, a Black Sea turbot age-reading protocol was developed. Participants also highlighted the need for a regional otolith archive to verify historical age estimates, as past turbot ages appeared to have been overestimated. The discussions further underscored important sampling limitations affecting ALKs and growth estimates, since most samples originated from surveys with few large or older individuals, resulting in incomplete age representation and high variability in younger age classes. While readers showed good agreement when ageing young turbot, ageing accuracy declined significantly with fish age, making the interpretation of older individuals more difficult and inconsistent.

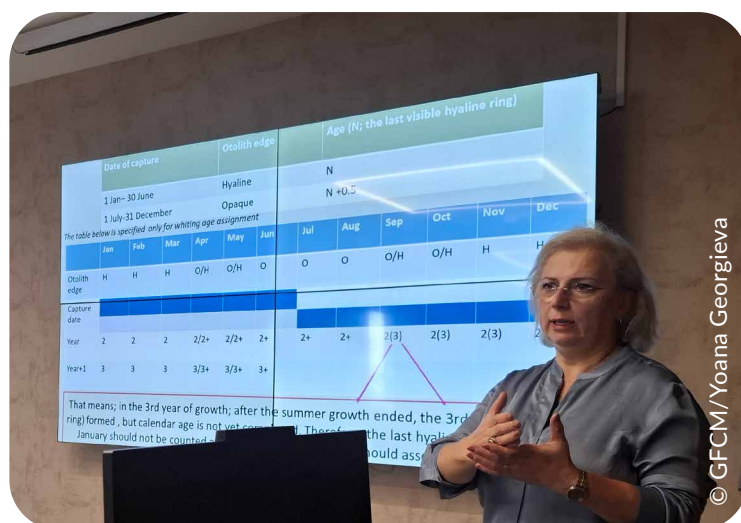


(Continued)



Experts and participants in the workshop on turbot age reading.

During the whiting age reading workshop, ALKs and weight-at-age data were derived from 320 otoliths, although several data gaps and sampling inconsistencies were identified, including the absence of samples from Ukraine and the lack of age-0 fish in Bulgarian samples, suggesting potential sampling bias. Georgian samples were excluded from the pooled analysis because the fish were generally larger due to sampling selectivity, and their weight-at-age data were therefore analysed separately to avoid bias. In addition, inter-country differences in otolith morphology and incomplete overlap in length ranges limited regional stock comparisons and constrained the assessment of stock differentiation across the Black Sea.



Experts presenting whiting age reading.



Links

[Report of the workshop on European sprat age reading](#)

[Report of the workshop on horse mackerel age reading](#)

[Report of the workshop on turbot age reading](#)

[Report of the workshop on whiting age reading](#)



Achievement 4. Pilot project on sturgeons



The pilot project on sturgeons (Acipenseridae), launched in 2023, aims to strengthen regional cooperation and knowledge on the marine phase of sturgeon life cycles, with a focus on bycatch, illegal, unreported and unregulated (IUU) fishing and safe release practices. Implemented under the coordination of the GFCM Black Sea Technical Unit, the project involves Bulgaria, Georgia, Romania, Türkiye and Ukraine. Over 2024–2025, activities were primarily implemented in Bulgaria, Georgia, Romania and Türkiye through a LEK study, awareness-raising activities and a comprehensive regional technical review of sturgeon interactions with marine fisheries.

Technical activity 1. Harnessing fishers' local ecological knowledge of sturgeons

2024
Bulgaria, Georgia,
Romania and Türkiye

Building on the first phase of the LEK study conducted in 2023, the second phase, launched in January 2024, focused on documenting fishers' knowledge and direct experience of sturgeon bycatch in the Black Sea. The second phase used a more structured and standardized questionnaire to gather detailed information on fishing locations and geographic areas, fishing gear-related practices, and perceptions from experienced fishers, including some retired respondents, ensuring both reliability and historically informed insights. The study aimed to identify bycatch hot spots, improve understanding of regulatory perceptions and introduce participatory mapping, providing essential inputs for future monitoring and mitigation strategies.

Results

A total of 329 structured interviews were conducted through questionnaires with local fishers across Bulgaria, Georgia, Romania and Türkiye.

Participatory mapping yielded 641 hot spot areas, annotated with fishing gear type, target species and season, reflecting the fishers' LEK accumulated over multiple years rather than a single year.

A total of 544 gear-specific records related to sturgeon bycatch incidents in 2023 were documented during the survey.



Interviewing Turkish fishers to learn from their local ecological knowledge of sturgeons.

Technical activity 2. Review of sturgeon interactions with marine fisheries in the Black Sea

2025

Bulgaria, Georgia,
Romania, Türkiye
and Ukraine

A comprehensive technical review was conducted to assess interactions between sturgeons and marine fisheries in the Black Sea, consolidating knowledge on bycatch trends, regulatory frameworks, enforcement capacity and data gaps. Drawing on country informed inputs, the review provides an integrated analysis of the main conservation and monitoring challenges associated with sturgeon bycatch and supports the development of policy and technical recommendations to strengthen regional protection efforts.

Results

The review compiles data and insights from Bulgaria, Georgia, Romania, Türkiye and Ukraine, covering: i) documented and undocumented bycatch, legal frameworks and species protection status; ii) monitoring efforts, enforcement challenges, and areas of non-compliance; and iii) stakeholder engagement efforts, including LEK and awareness activities.

Sturgeon species were included in Appendix F of the GFCM Data Collection Reference Framework (DCRF).

Link

[Technical document on the review of sturgeon interactions with marine fisheries in the Black Sea](#)



National Institute for Marine Research and Development expert about to release a sturgeon in Romania.

Achievement 5.
Research programme on
piked dogfish



Following Recommendation GFCM/39/2015/4 on management measures for piked dogfish in the Black Sea, precautionary measures were introduced for this species. The recommendation also called on contracting parties and cooperating non-contracting parties to engage in capacity development and cooperative research to improve knowledge of this vulnerable species. Building on the participatory approach set out in Recommendation GFCM/44/2021/10 on management measures for sustainable piked dogfish fisheries in the Black Sea (geographical subarea 29), a series of coordinated activities were implemented over 2024–2025 to further strengthen the evidence base needed to inform future management plans. These comprised data collection on bycatch interactions, the preparation of research reports, and multiple studies, including on LEK.

Technical activity 1.
Data collection on bycatch
interactions through self-reporting

2025
Türkiye

Engaging fishers in data collection is essential for addressing the bycatch of vulnerable species such as piked dogfish, as their contributions help address knowledge gaps on incidental catch during commercial fishing operations. Building on observer training conducted in Türkiye, commercial fishers have begun providing vital data on bycatch interactions through project partners, strengthening the evidence base needed to better understand bycatch patterns and diversify information sources to support mitigation efforts.

Results

Bycatch interactions were reported across fishing gear (Table 1). Fishers also reported that piked dogfish often aggregate around aquaculture cages.

Fifty-eight percent of individuals caught as bycatch were released alive.

Female individuals accounted for 86 percent of the total of caught individuals, of which 58 percent were reported as pregnant in both summer and autumn reporting by fishers in Trabzon.

Table 1. Number and share of recorded bycatch interaction events by fishing gear type and depth

Fishing gear type	Number of recorded bycatch events	Depth	Distribution of bycatch interactions (%)
Set gillnets	2	14 m (7–20 m)	21
Hooks and lines	8	50 m (40–63 m)	57
Mid-water trawlers	1	40 m	7
Bottom trawlers	3	102 m (101–104 m)	15

Notes: Percentages indicate the share of recorded bycatch interaction events by fishing gear type and should not be interpreted as gear-specific bycatch risk, as fishing effort was not accounted for.

Depth values are presented as mean and range (minimum–maximum).

Technical activity 2.
Background technical document in support of the management plan for the recovery of piked dogfish

A comprehensive background technical document was prepared to synthesize current knowledge on the status of the species in the region, on environmental and biological conditions, as well as on anthropogenic pressures and existing management frameworks. The document informs the implementation of precautionary management measures supported by the research programme, and provides a robust scientific basis for the development of an effective multiannual plan for the sustainable management of piked dogfish in the Black Sea.

Results The document was made available on the BlackSea4Fish webpage resources section in 2025, serving as a key reference for regional recovery planning and national policy alignment.

Link [Background technical document in support of the management of piked dogfish in the Black Sea](#)

Technical activity 3.
First study of at-vessel mortality and short-term vitality of piked dogfish caught in bottom-set longlines

August 2024–April 2025
Bulgaria

Understanding post-capture survival is essential for evaluating the effectiveness of live release practices for piked dogfish, a vulnerable species under regional management. This study provides the first systematic assessment in the Black Sea of both at-vessel mortality and short-term vitality following release, drawing on commercial bottom set longline trials and standardized vitality scoring methods to quantify survival rates and examine the influence of environmental and operational factors on piked dogfish survivability.

Results Three commercial longline trials were conducted in Bulgarian waters between August 2024 and April 2025.

A total of 108 individuals were studied using onboard flow-through survival tanks and a four-point vitality scoring system.

Thermal differential (ΔT ; between sea surface and bottom) and soak time were key predictors of mortality.

Under extreme summer conditions ($\Delta T = 14.5^\circ\text{C}$; 72-hour soak time), no individuals survived, whereas in winter, with minimal $\Delta T (\leq 0.8^\circ\text{C})$ and soak time ≤ 12 hours, 100 percent survival was recorded.

Survival experiments on piked dogfish caught in bottom-set longlines in Bulgaria.



© GFCM/Konstantin Petrov

Technical activity 4.
First study of at-vessel mortality
and short-term vitality of piked
dogfish caught as bycatch in
demersal trawls

July and December 2024
Türkiye

Over 2024–2025, the three data preparation meetings were held. A short-term post-release mortality study was conducted in Turkish waters to evaluate the at-vessel mortality and short-term vitality of piked dogfish caught as bycatch in demersal trawl fisheries. Using the same standardized onboard observation methodology applied in the longline study (Output 1, Achievement 5, Technical activity 3), research was carried out aboard the SUMAE research vessel *Sürat Araştırma-1* during demersal trawl surveys in July and December 2024. The activity aimed to assess survival rates and identify operational and biological factors influencing the species' post-capture survivability in Turkish waters.

Results

A total of 139 piked dogfish individuals were studied, during nine tows at depths of 50–113 m.

The sample comprised 59 males, 78 females, and 2 undetermined individuals, with length ranging from 30.4 cm to 117 cm (mean 71.6 cm $\pm$ 2.4 cm), indicating a well-distributed sample across length classes.

All individuals were tagged and transferred to flow-through seawater tanks (approximately 1 m³) immediately after capture. Vitality was assessed at time zero and again after three hours. At time zero, 100 percent of individuals were alive. After three hours, 80 percent remained in good condition, 13.7 percent were in moderate condition, and 5 percent were in poor conditions, indicating generally high short-term survivability under demersal trawl conditions.



Biological sampling of piked dogfish during the standardized demersal trawl surveys in the Black Sea.

Technical activity 5. Harnessing Black Sea fishers' local ecological knowledge of piked dogfish

2024
Bulgaria, Georgia,
Romania and Türkiye

Building on the first phase of the LEK study conducted in 2023, the second phase, launched in March 2024, was carried out across Bulgaria, Georgia, Romania and Türkiye to collect knowledge and qualitative inputs from experienced fisher, fish traders and processors on their interactions with piked dogfish. The study explored perceptions, experiences and narratives related to the past and present status of the species, including retention and discard practices, with the aim of informing bycatch reduction strategies and supporting future awareness raising and participatory management approaches.

Results

A total of 96 interviews were conducted: 53 in Georgia, 22 in Türkiye, 11 in Bulgaria and 10 in Romania.

Economic efficiency and market demand were the most cited reasons for piked dogfish retention, citing “good profit[s] for small-scale fishers” and “there is still a market for it”.

Discards occur due to fear of penalties, lack of buyers, or fishing gear damage, according to respondents.

Incidental catch and discards were most commonly associated with bottom trawl, gillnet and longline operations.

Personal recollections highlighted the historical significance of piked dogfish fisheries, particularly during the 1980s and 1990s, when factory processing was active.



Interviewing Romanian fishers to learn from their local ecological knowledge of piked dogfish.

Achievement 6. Pelagic acoustic surveys

The SGSABS has consistently emphasized the importance of small pelagic fish in the Black Sea, with each species assessed as a single stock and monitored by multiple institutions, as well as the need for high-quality fishery-independent data to support science-based management. Significant progress has been made towards harmonizing and strengthening pelagic acoustic surveys across the region, addressing key methodological inconsistencies and capacity gaps among countries.

Technical activity 1. GFCM pelagic acoustic survey protocol adapted to the specificities of the Black Sea

A GFCM pelagic acoustic survey protocol was prepared with the aim to harmonize and enhance the collection of fishery-independent acoustic data for small pelagic fish in the Black Sea, adapting existing GFCM and Mediterranean International Acoustic Survey (MEDIAS) guidelines to Black Sea conditions.

Results

The evaluation of existing hydroacoustic survey practices revealed the need for strengthened and standardized post-processing, data curation and analytical procedures, which are essential for ensuring consistency and reliability across institutions contributing to the regional time series.

A review of survey design principles identified gaps in transect orientation, spacing and the definition of geographical strata, confirming the need for a clearer stratified design adapted to the spatial variability of small pelagic stocks in the Black Sea.

The assessment of biotic data collection protocols revealed insufficient emphasis on otolith sampling and age reading, leading to the recommendation that these components become mandatory to ensure that acoustic surveys can support age-structured stock assessments.

The protocol review identified opportunities to incorporate additional ecosystem-level sampling, particularly zooplankton density and primary production, to improve the ecological context and support broader ecosystem monitoring needs.

The analysis of current practices noted that surveys may occasionally operate during nighttime hours, highlighting the importance of documenting potential biases associated with 24-hour data collection and providing guidance for adjusting methodologies accordingly.

Based on these findings, experts agreed on the need for a hands-on regional workshop to support harmonized implementation of the revised protocol among Black Sea countries.

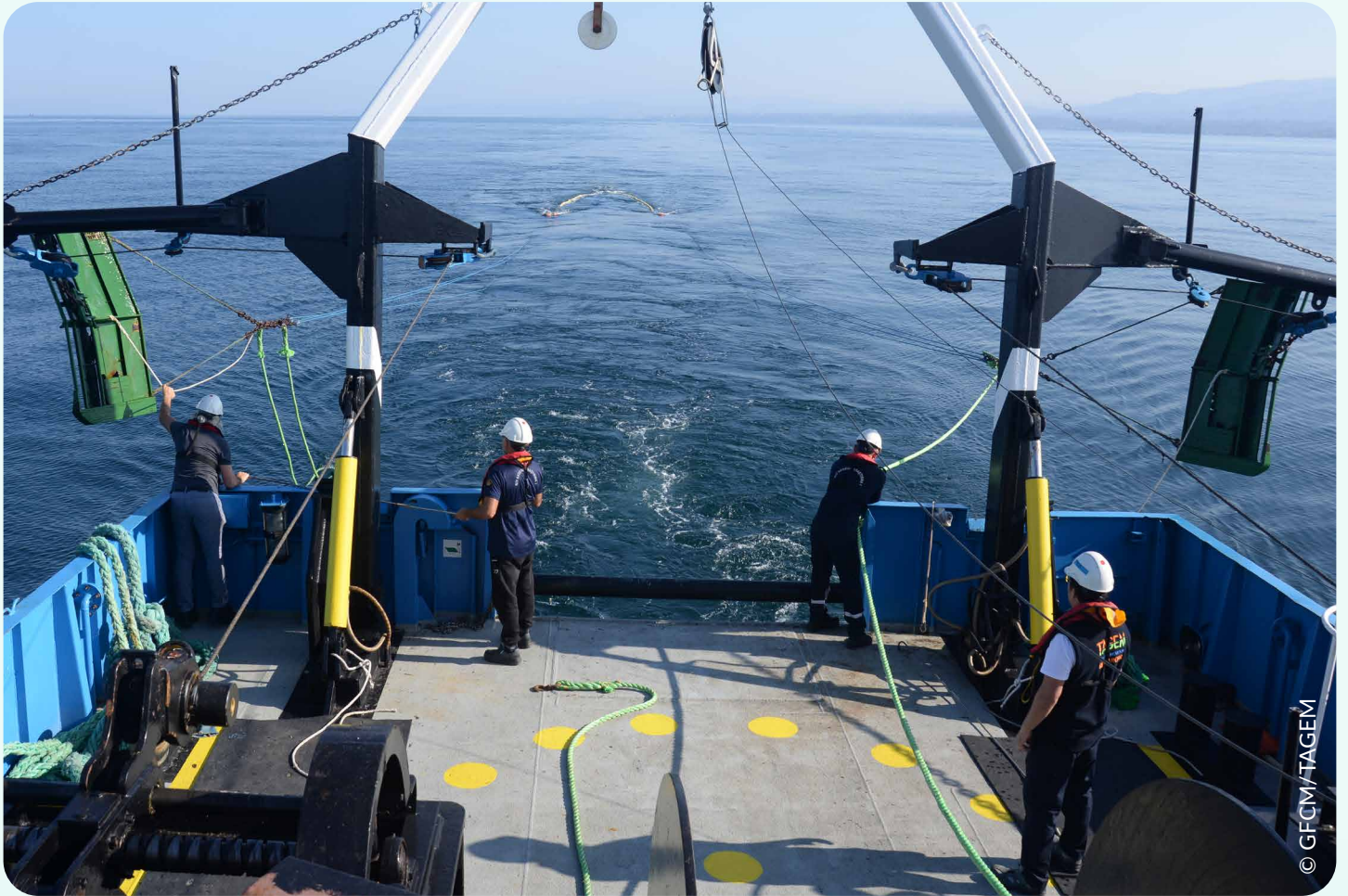
Link

[Technical document on GFCM pelagic acoustic survey protocol adapted to the specific characteristics of the Black Sea](#)

Technical activity 2.
**Report on the harmonization of
acoustic surveys in the Black Sea**
25-26 December
2024
Trabzon, Türkiye
4-6 February
2025
Batumi, Georgia

A report was drafted to evaluate the hydroacoustic survey methodologies used by Georgia and Türkiye, identify sources of inconsistency affecting biomass estimates, and define technical, methodological and capacity development requirements to harmonize data collection, processing and analysis across both countries.

Results	Complete assessments of both national survey systems were conducted, reviewing infrastructure, equipment, survey design, calibration procedures, biological sampling and post-processing workflows at NEA and SUMAE, revealing key differences affecting biomass estimates.
	Methodological and operational challenges were documented, including diel fish behaviour, day-night survey discrepancies, transect design, vessel noise, species separation difficulties, interference from gelatinous organisms, weather-related interruptions, and limitations in data processing capacity.
	A coordinated set of harmonization requirements was defined, covering joint intercalibration surveys, scientist exchange during field surveys, standardized day-night comparison experiments, Echoview upgrades and missing modules, integration of 120 kHz for multifrequency species separation, improved deployment methods (e.g. tow bodies), targeted training in survey design, biomass estimation, coefficient of variation calculation, and post-processing.
	A roadmap for region-wide standardization was proposed, outlining a step-wise framework to align survey protocols, processing workflows and analytical outputs, enabling reliable and comparable acoustic biomass indices for future SGSABS stock assessments.
Link	Report on capacity development needs for standardized hydroacoustic surveys of small pelagic fish in the Black Sea



Release of sampling gear during a pelagic acoustic survey.



Measuring Black Sea anchovy samples from a pelagic acoustic survey.

Technical activity 3.
Training on acoustic data processing

17–22 November 2025
Mersin, Türkiye

A training was held at the Middle East Technical University in Mersin, Türkiye to establish a harmonized workflow for acoustic data post-processing and biomass estimation. The training was designed to guide Georgian participants through each step of the hydroacoustic data post-processing and biomass estimation methodology, from raw data cleaning to geostatistical preparation, using their national dataset as the core working example.

Results

All Georgian acoustic surveys (2020–2025) were fully reprocessed, including raw data cleaning, noise removal, layer detection, school delineation, and nautical area scattering coefficient (NASC) integration for the entire time series.

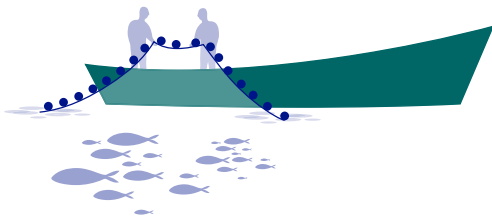
Standardized EchoView project files and validated NASC outputs were produced, with reorganized metadata and unified export formats compatible with basin-wide analyses.

Biomass estimation steps were completed, applying target strength equations, converting NASC values to density estimates and generating preliminary biomass indices for each survey year.

The Georgian dataset was prepared for spatial–temporal modelling (VAST/sdmTMB). The final dataset (latitude, longitude, NASC, time, strata) was formatted for the first phase of the modelling workflow, enabling immediate use in spatial interpolation, uncertainty assessment and further integration into the full Black Sea basin-level model.

Link

[Report on the standardization of winter acoustic indices for Black Sea anchovy using a joint spatio-temporal approach](#)



Output 2

Improved knowledge of small-scale and recreational fisheries

Over 2024–2025, significant efforts were made to strengthen knowledge of small-scale and recreational fisheries in the Black Sea.

These activities included:

- a small-scale fisheries (SSF) study conducted in 2024 to gather LEK;
- socioeconomic studies to enhance the socioeconomic data submitted to the GFCM through the DCRF; and
- the launch of a research programme on recreational fisheries.

Activities and achievements in numbers

Local ecological knowledge studies

Face-to-face surveys in **196** different locations across **4** countries

Research programme on recreational fisheries

Programme launched in 2024

Socioeconomic studies

3
studies across **2** countries

364
questionnaires completed in Türkiye

37
surveys conducted in Georgia



Technical activity 1. Small-scale fisheries local ecological knowledge study

2024
Bulgaria, Georgia,
Romania and Türkiye

The study aimed to enhance understanding of SSF in the Black Sea by examining their characterization and development over the past decade, studying the role of women in the sector and reviewing the status of implementation of the Regional Plan of Action for Small-Scale Fisheries (RPOA-SSF).

Results

Face-to-face surveys were conducted in 196 different locations across Bulgaria, Georgia, Romania and Türkiye.

The data analysis (excluding fishing gear inventory information) was published and shared during the eleventh WGBS meeting in Constanta, Romania.

According to the study, 81.4 percent of surveyed ports have registered fisheries organizations, and 64 percent of those are managed by the organizations themselves.

Link

[Report on the study of local ecological knowledge on small-scale fisheries in the Black Sea](#)

Technical activity 2. National socioeconomic study

2024
Türkiye

A socioeconomic study was carried out in 2024 by the Central Union of Fisheries Cooperatives, in collaboration with the General Directorate of Fisheries and Aquaculture, to assess the economic characteristics of the fisheries sector in Türkiye for the reference year 2023. Data were collected and analysed to provide a comprehensive baseline on the sector's socioeconomic status, towards supporting future evidence-based management decisions.

Results

A total of 364 questionnaires were completed between May and June 2024.

The data collected were analysed between 2024 and 2025, and the results were submitted to the Ministry of Agriculture and Forestry of Türkiye.

The administration submitted the results to the GFCM through the DCRF, thereby enhancing the quantity and quality of socioeconomic data reported.



Conducting an interview with a Turkish fisher in Mersin Koyu, Perşembe, Türkiye.

Technical activity 3. Small-scale fisheries socioeconomic studies

2024 and 2025
Georgia

Two socioeconomic studies were carried out between 2024 and 2025 by the National Environment Agency to assess the socioeconomic characteristics of the Georgian small-scale fisheries sector for the reference years 2023 and 2024. Data were collected and analysed to establish a comprehensive socioeconomic dataset for the sector, thereby providing a baseline against which the impacts of future fisheries management measures can be evaluated.

Results

A total of 37 surveys were conducted within the framework of the two socioeconomic studies.

The data collected were analysed, and the results were submitted to the Ministry of Environmental Protection and Agriculture of Georgia.

The administration submitted the results to the GFCM through the DCRF, thereby enhancing the quantity and quality of socioeconomic data reported.



Conducting an interview with a Georgian fisher in Kobuleti, Georgia.

Technical activity 4.
Launch of the research
programme on recreational
fisheries

2024–2026
Bulgaria, Romania,
Türkiye and Ukraine

Following Recommendation GFCM/45/2022/12 on the establishment of a set of minimum rules for sustainable recreational fisheries in the Mediterranean Sea, the GFCM launched a dedicated research programme in 2024, running through 2026, with partners from all Mediterranean subregions and the Black Sea, including Bulgaria, Romania, Türkiye and Ukraine.

The programme is structured into four work packages (WPs):

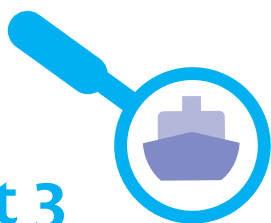
- WP 1 focuses on data collection to define the target population of marine recreational fishers;
- WP 2 develops a stock assessment framework;
- WP 3 addresses management measures; and
- WP 4 promotes stakeholder engagement.

Results will provide a basis for assessing the socioeconomic and economic impacts of recreational fisheries in the Mediterranean and the Black Sea, with information on fishers' behaviour, including avidity and preferred fishing methods, seasonality patterns, catch and release rates, most commonly targeted species and monthly expenditures.

Link

[Research programme on recreational fisheries](#)

Output 3



Assessment of illegal, unreported and unregulated fishing and operationalization of a modular approach to vessel monitoring systems

Over 2024–2025, BlackSea4Fish supported countries in strengthening MCS and advancing a more transparent, interoperable and data-driven fisheries governance.

These activities included:

- a workshop supporting the consolidation of legislative and institutional frameworks for SSF governance;
- a training on strengthening national legislation in relation to GFCM recommendations; and
- the piloting of multiple VMS.

Activities and achievements in numbers

Small-scale fisheries governance

1

workshop with participants from 4 key institutions

Georgian national task force established

Draft roadmap developed for strengthened frameworks

Compliance

1

training with 10 legal and technical representatives from 3 countries

Monitoring, control and surveillance

5

VMS technology solutions piloted

Market research conducted to identify maritime awareness platforms



Technical activity 1.
Workshop on implementing legislative frameworks for small-scale fisheries fleet registers and data collection

18–19 March 2025
Batumi, Georgia

This workshop aimed to support the enhancement of the legislative and institutional frameworks for SSF in Georgia, particularly fleet registers and data collection systems. Building on earlier technical assistance and data collection activities from 2023, the workshop facilitated regional knowledge exchange with experiences from Bulgaria, Lebanon and Türkiye. The activity aimed to assess existing gaps in Georgia's SSF governance and contribute to the development of a national roadmap for strengthened fleet registration and data systems aligned with regional and international standards, including the GFCM 2030 Strategy.

Results

The workshop brought together 15 participants from four key Georgian institutions, including the Ministry of Environmental Protection and Agriculture, the National Environmental Agency, the Department of Environmental Supervision and the Maritime Transport Agency, alongside international experts and representatives from Türkiye, FAO and the GFCM.

Strategic and technical discussions on the legislative and institutional challenges facing the SSF sector in Georgia were held, supported by national presentations and regional case studies, and facilitated the assessment of data gaps related to fleet registers and DCRF reporting obligations.

The event led to the establishment of a national task force, the presentation of recent socioeconomic and LEK data collection efforts, and the development of a draft roadmap to strengthen legislative, institutional and data collection frameworks for SSF in Georgia.



Participants in the workshop on implementing legislative frameworks for small-scale fisheries fleet registers and data collection in Batumi, Georgia.

Technical activity 2.
Training on strengthening national legislation in relation to GFCM recommendations

17–18 June 2025
Istanbul, Türkiye

This regional training aimed to strengthen the capacity of Black Sea countries to align national legislation with GFCM recommendations and broader international obligations. Building on previous technical missions and legal assessments conducted through the GFCM regional repository of national legislation (GFCM-Lex) and related compliance activities, the workshop provided a platform for legal and institutional dialogue, peer learning and practical exercises on fisheries governance, IUU fishing prevention, SSF and social protection mechanisms. The activity also aimed to support countries in transposing GFCM recommendations into domestic legislation, enhance legal coherence, promote compliance and advance the development of national GFCM-Lex profiles and national plans of action to combat IUU fishing.

Results

The training brought together around ten legal and technical representatives from Georgia, Türkiye and Ukraine, together with GFCM experts, to discuss national legislative frameworks and pathways for enhanced compliance.

A detailed presentation of the GFCM-Lex platform, including its architecture, methodology, and function as a regional transparency tool, was made, and a review of national profiles for Georgia and Türkiye was conducted.

Participants joined targeted sessions on legal transposition practices, IUU fishing frameworks, abandoned, lost or otherwise discarded fishing gear, and social protection in SSF, supported by country presentations and practical exercises.

Information collected through social protection questionnaires was reviewed and incorporated into draft GFCM-Lex profiles for Georgia and Türkiye, helping to reflect relevant national policies and identify gaps.

The event concluded with commitments from Georgia and Türkiye to initiate the development of national plans of action to combat IUU fishing, and from Georgia and Ukraine to provide formal feedback and finalize their national GFCM-Lex profiles with continued support from the GFCM.

Technical activity 3.
Piloting of vessel monitoring
systems to strengthen national
monitoring, control and
surveillance frameworks

2024–2025
Türkiye

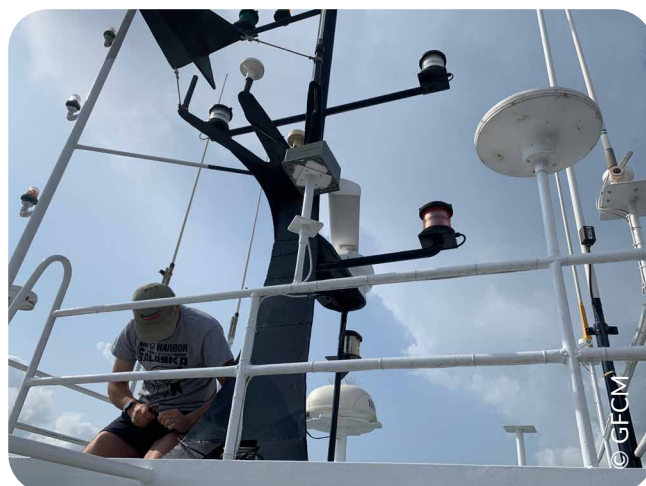
Over 2024–2025, a comprehensive assessment of the national MCS needs of Türkiye was conducted, leading to the piloting of multiple VMS solutions. Through a combination of remote coordination, onsite missions and targeted market research on maritime domain awareness tools, the activity aimed to identify viable technologies capable of supporting national MCS operations under real conditions while ensuring compatibility with regional frameworks. The work aimed to inform the modernization of national control systems and promote interoperability within the wider regional MCS framework.

Results

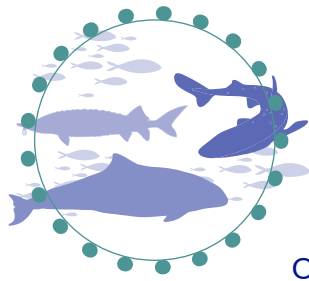
Five VMS technology solutions were piloted to evaluate their feasibility and performance under national conditions, supported by online coordination meetings and two in-country missions for transponder installation.

Findings from the assessment informed the selection of fit-for-purpose VMS options capable of supporting the operational needs of Türkiye's fisheries control authorities and aligning with regional compliance practices.

Complementary market research was conducted to identify maritime awareness platforms able to ingest and analyse control data from multiple sources, including VMS, electronic reporting systems, inspection report, and satellite imagery, contributing to the design of integrated MCS solutions for the region.



From top to bottom: the VMS transponder installation process.



Output 4

Improved monitoring of discards and bycatch of vulnerable species

Over 2024–2025, BlackSea4Fish continued coordinating and taking part in field work activities aimed at improving knowledge and testing measures to mitigate the bycatch of vulnerable species in the Black Sea. These activities were carried out within the framework of the CetaByM pilot project and the discard monitoring programme.

Activities and achievements in numbers

CetaByM		Discard monitoring programme	
47	24	464	144
additional sea trials for PAL tests	fishing operations to test mitigation measures	onboard observations	LEK questionnaires across 4 countries
CetaByM final report	1 700	Red mullet and whiting selectivity trials	
	stakeholders engaged		



Achievement 1. The CetaByM pilot project

In 2021, the WGBS identified the need for a dedicated pilot project to assess cetacean bycatch in Black Sea turbot gillnet fisheries and to evaluate mitigation measures. The resulting initiative, the CetaByM pilot project, was launched in 2022 as a coordinated, multiyear effort involving experts and stakeholders from Bulgaria, Georgia, Romania and Türkiye. Between 2024 and 2025 activities under the project expanded in scope, providing the most comprehensive regional overview to date on the scale, distribution and drivers of cetacean bycatch and on potential for fisher-led mitigation.

Technical activity 1. Commercial tests of wide-band porpoise alerting devices

2024–2025
Bulgaria, Romania,
Türkiye

Forty-seven sea trials were conducted under commercial fishing conditions: 6 in Bulgaria, 7 in Romania and 34 in Türkiye. These trials aimed to test the effectiveness of wide-band porpoise alerting devices (PALs) and to collect biological information. During each trial, half of the gillnet length was equipped with PALs, while the remaining half served as a control, ensuring a minimum separation distance of 500 m between the two setups. The total weight of targeted turbot and numbers of harbour porpoises (*Phocoena phocoena relicta*) caught as bycatch were recorded. Biological data were collected on turbot catch and harbour porpoise bycatch, contributing to the ongoing assessment of PAL efficiency.

Results

When combined with the sea trials conducted during the previous reporting period, the full dataset comprised 95 paired fishing operations across Bulgaria, Romania and Türkiye. Analysis of this complete dataset showed that wide-band PAL-equipped nets reduced harbour porpoise bycatch by approximately 69 percent compared with control nets, while no reduction in turbot catches was observed. Wide-band PALs did not affect turbot catch efficiency and a modest seasonal increase in bycatch was detected in July.

Trials also suggested that nets set at greater depths were associated with a lower bycatch risk.

Link

[Final report of the CetaByM pilot project \(Chapter 3\)](#)



Wide-band porpoise alerting device.

Technical activity 2. Experimental tests of mitigation measures and comparisons of soak time

April 2024–March 2025
Romania

Between April 2023 and March 2024, 24 fishing operations with an average soak time of 13 days were carried out in Romania to compare the capture probability of five modified turbot gillnets, including a control gear, each 1 km long, in terms of landed and discarded turbot catch and cetacean bycatch. The trials aimed to test different types of nets and wide-band PAL devices and to assess how each configuration influenced catch composition and bycatch.

Results

Gillnets rigged with wide-band PALs recorded zero harbour porpoise bycatch.

The multifilament net showed the highest number of bycatch events.

Link

[Final report of the CetaByM pilot project \(Chapter 4\)](#)

A harbour porpoise entangled in a turbot gillnet during sea trials.



Technical activity 3. Final report of the CetaByM pilot project

The final report of the CetaByM project consolidates findings, methods and stakeholder contributions from the multicountry pilot project. Through collaborative field trials, awareness-raising campaigns, extensive fisher interviews, stakeholder engagement and fishing gear performance evaluations, the project delivers the most comprehensive evidence to date on fishing effort patterns, discard practices and opportunities to reduce cetacean interactions with fisheries across Bulgaria, Georgia, Romania and Türkiye.

Results

The final report brings together the outputs of four work packages implemented between 2022 and 2024, encompassing:

- a large-scale awareness campaign engaging over 1 700 stakeholders, including fishers, national administrations and non-governmental organizations (NGOs);
- trials of wide-band PALs and evaluation of fishing gear modifications, such as higher, thinner and multifilament nets, compared with standard gillnets; and
- a regional overview of fishers' perceptions, species interactions and economic considerations linked to the turbot gillnet fishery.

Link

[Final report of the CetaByM pilot project](#)

Achievement 2. Discard monitoring programme

To improve knowledge on discard rates in the Black Sea, field activities were conducted under the GFCM discard monitoring programme, in line with the handbook *Monitoring discards in Mediterranean and Black Sea fisheries: Methodology for data collection* (FAO, 2019). The work combined onboard scientific observations, selectivity trials and a LEK survey, generating datasets on catch composition, discard ratios, vulnerable species interactions, marine litter and fleet perceptions.



From top to bottom (clockwise):

Discarding of a thornback ray caught as bycatch during bottom trawling operations. Mixed catch from a bottom trawler. Sorting of trawl catch.

Technical activity 1.
Onboard observer activities under
the discard monitoring programme
February–December 2024
Türkiye

Between February and December 2024, certified observers were deployed on Turkish fishing vessels across all main fleet segments in the Black Sea as part of the fourth year of the GFCM discard monitoring programme. During each haul, observers collected five key categories of information: i) weight and size composition of landed and discarded catch; ii) incidental catch of vulnerable species such as sharks, rays and marine mammals, including information on their vitality and sex; iii) amount of macro-benthic bycatch from the sea floor; iv) all marine litter, sorted by material type; and v) fuel consumption, haul duration and distance, and landed biomass. These data were used to compile an annual standardized dataset for each fleet segment across all categories.

Results

A total of 464 onboard observations were conducted across all major fleet segments.

Plastic was the most common material type found in marine litter.

Discard ratios are available in Table 2. More detailed results were shared with the General Directorate of Fisheries and Aquaculture.

Table 2. Discard ratios and median fuel use intensity per kilogram of catch by landed by each fleet segment during the discard monitoring programme

Fleet segment	Length overall	Discard ratio (%)	Median fuel consumption intensity (kg fuel/kg landed catch)
Purse seiners	> 24 m	0.56	0.21
Beam trawlers	6–12 m	2.80	0.63
Paired mid-water trawlers	12–24 m	28.40	Not available
Paired mid-water trawlers	> 24 m	2.60	0.29
Bottom trawlers	12–24 m	35.70	0.79
Bottom trawlers	> 24 m	32.50	0.82

Technical activity 2.
Bottom trawl local ecological
knowledge survey
2024
Bulgaria, Georgia,
Romania and Türkiye

A questionnaire was developed to strengthen existing knowledge on Black Sea bottom trawl fisheries through the collection of field data. The LEK survey was designed to improve the understanding of key aspects related to bottom trawl fisheries, such as targeted and discarded species, fisher behaviour towards discard reduction, perception of compliance and expectations for the future of trawl fisheries.

Results

A total of 144 questionnaires were completed across Bulgaria, Georgia, Romania and Türkiye.

The evaluation and analysis of the data collected are still underway.

Technical activity 3.
Bottom trawl codend
selectivity trials

Spring and autumn 2024
Türkiye

Selectivity trials were conducted on trawling grounds off Sinop, Türkiye, during the commercial fishing season and across two periods: spring (March 2024) and autumn (October–November 2024). All hauls were carried out using a commercial bottom trawler (22 m length overall and 89 gross tonnage) powered by a 540 hp engine. The vessel operated a standard Black Sea bottom trawl equipped with approximately 900 meshes in the belly and a 40 mm diamond-mesh codend. Size selectivity was assessed for commercial species, namely, red mullet and whiting, using a covered codend constructed from 14 mm knotless polyamide netting, kept open by two polypropylene hoops.

Results

Size selectivity (L_{50} – the length at which fish have a 50 percent probability of being retained by the codend) was estimated for red mullet and whiting across the spring and autumn trials (Table 3).

The trials provided a clear benchmark for the performance of the legal 40 mm diamond-mesh codend under commercial conditions and a solid baseline for future improvements.

The average codend discard rate was approximately one-third of the total catch weight, indicating significant scope for optimization through fishing gear or operational adjustments.

Detailed results were shared with the Ministry of Agriculture and Forestry of Türkiye.

Table 3. Results of the evaluation of diamond-mesh codend performance in bottom trawl codend selectivity trials for red mullet and whiting

Trial season	Species	L_{50} (cm)
Spring (March 2024)	Red mullet	10.89
Spring (March 2024)	Whiting	11.61
Autumn (October–November 2024)	Red mullet	9.99
Autumn (October–November 2024)	Whiting	11.57



Measuring of whiting during a bottom trawl codend selectivity trial.



Output 5

Cooperation, outreach and dissemination of results

Over 2024–2025, regional cooperation, stakeholder engagement and effective dissemination were strengthened to support sustainable fisheries management in the Black Sea in response to the need to enhance regional capacity in fisheries governance.

These activities included:

- stakeholder meetings to foster dialogue among fishers, scientists, administrations and NGOs;
- awareness-raising activities; and
- the dissemination of multilingual guides and outreach materials and the update of the BlackSea4Fish webpage.

Activities and achievements in numbers

Stakeholder meetings

2

stakeholder meetings

49

participants representing a range of stakeholders

Targeted awareness-raising and training

2

guides for the safe handling and release of piked dogfish and sturgeons in 6 languages

6

awareness-raising sessions across 3 countries

Updated webpage with publications, technical reports and Black Sea fisheries scientific database

Achievement 1. Stakeholder meetings

Two stakeholder meetings held in Bulgaria strengthened dialogue among fishers, scientists and administrations and supported informed management of piked dogfish and European sprat fisheries in the Black Sea. They reviewed management measures, highlighted the need for continued scientific work and captured key sector concerns, including economic pressures and regulatory challenges.

Technical activity 1. Piked dogfish stakeholder meeting

23 April 2024
Varna, Bulgaria

This meeting brought together 29 participants, including fishers, scientists and representatives of the Executive Agency of Fisheries and Aquaculture (EAFA), the fisheries local action group “Shabla-Kavarna-Balchik”, NGOs, the municipality of Varna and the GFCM. The meeting aimed to strengthen collaboration and dialogue between all stakeholders involved in Bulgarian piked dogfish fisheries, fostering continued discussion on fisheries management and the conservation of the species.

Results

The meeting supported maintaining current management and conservation measures, while remaining open to future discussions on seasonal closure periods and the allocation of fishing opportunities, pending robust scientific advice from national scientific institutes.

Scientists requested additional time for surveys and data analysis, noting the ongoing work at the GFCM level to expand the database and that results would be shared when available.

Representatives of the large-scale fisheries sector highlighted economic pressures resulting from COVID-19 and the current situation in Ukraine, as well as regulatory ambiguities at the national, regional and European Union levels in relation to fishing gear, access to fishing grounds, onboard finning rules and taxation. They called for national authorities to address these issues promptly.

Representatives of the SSF sector opposed seasonal closure periods, catch limits and designated landing points, and stressed the need for differentiated management regimes for small- and the large-scale fleets.



Piked dogfish stakeholder meeting in Varna, Bulgaria.

Technical activity 2. European sprat stakeholder meeting

30 April 2024
Burgas, Bulgaria

The meeting brought together 20 participants, including fishers, scientists and representatives of EAFA and the fisheries local action group “Burgas–Kameno”. It aimed to strengthen dialogue and collaboration among scientists, administrators and fishers from the different segments of the Bulgarian fleet targeting European sprat to support informed discussions on fisheries management and on the conservation of the species.

Results

The meeting supported maintaining current management and conservation measures, while remaining open to future discussions on the effectiveness of temporal or spatial measures, pending robust scientific advice from national scientific institutes.

Scientists acknowledged that ongoing work at the national and GFCM level was progressing in the right direction, enabling a thorough assessment of stock status and the provision of adequate scientific advice.

Representatives of the large-scale fisheries sector favoured maintaining the current management approach for European sprat fisheries, highlighting its role in ensuring business predictability, and supported efforts to develop the fishery to its full potential, including through opportunities provided by the European Maritime Fisheries and Aquaculture Fund.



Achievement 2.
Awareness-raising activities and training

In 2024–2025, a series of awareness-raising and training activities were implemented across Türkiye, Georgia and Bulgaria, in synergy with the research programme on piked dogfish and the pilot project on sturgeons. Through hands-on trainings, training of trainers workshops and stakeholder meetings, fisheries inspectors, fisheries managers, scientists and fishers strengthened capacities in species identification, safe handling, release techniques and data reporting. Activities were tailored to local operational contexts and supported by multilingual guides and outreach materials.

Technical activity 1.
Guides for the safe handling and release of piked dogfish and sturgeons in the Black Sea

Guides for the safe handling and release of piked dogfish and sturgeons in the Black Sea were prepared, with the aim to provide Black Sea fisheries stakeholders with practical guidance to correctly identify sturgeon and piked dogfish species, apply safe handling and release practices when incidental catches occur, and improve data collection to support sustainable ecosystem-based fisheries management.

Results	The guides were released and printed in Bulgarian, Georgian, English, Romanian, Turkish and Ukrainian and distributed to stakeholders during various awareness-raising campaigns and trainings, along with branded materials.	
Links	Safe handling and release of sturgeons in the Black Sea [EN, BG, KA, RO, TR, UK]	Safe handling and release of piked dogfish in the Black Sea [EN, BG, KA, RO, TR, UK]

Technical activity 2.
Awareness-raising and training on the safe handling and release of piked dogfish and sturgeons

8–9 September 2025 Trabzon, Türkiye	17 October 2025 Varna, Bulgaria
11–12 September 2025 Batumi, Georgia	21 October 2025 Balchik, Bulgaria
14 October 2025 Primorsko, Bulgaria	22 October 2025 Shabla, Bulgaria

In 2025, BlackSea4Fish organized six awareness-raising and training sessions on the safe handling and release of piked dogfish and sturgeons. The sessions in Türkiye and Georgia brought together fisheries inspectors, observers, enforcement officers, researchers and local fishers. In Bulgaria, four sessions brought together commercial and recreational fishers, scientists, national authorities, fisheries observers and other stakeholders. The sessions aimed to strengthen national capacities in species identification, safe handling and release, promote best practices for data reporting, and familiarize participants with GFCM processes, ultimately contributing to reduced post-release mortality.

Results	In Türkiye and Georgia, the sessions covered species identification, safe handling, vitality assessment, safe release techniques and appropriate documentation of piked dogfish and sturgeon interactions, supported by demonstrations using the newly designed guides (Output 5, Achievement 2, Technical activity 1). In Türkiye, discussions benefited from recent self-reporting data provided by local longline and gillnet fishers, helping tailor the training to actual operational conditions. In Georgia, emphasis was placed on the role of small-scale fishers, the importance of reporting interactions with vulnerable species and the involvement of Georgian experts in the regional capacity development process.
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(Continued)

In Bulgaria, the sessions engaged a broad range of stakeholders, promoted safe handling and release practices for piked dogfish and sturgeons and gathered feedback to inform future outreach efforts. These activities were supported by training-of-trainers workshops, held in Burgas on 13 October 2025 and in Varna on 16 October 2025, which strengthened the capacities of scientific focal points in species identification, safe handling and release techniques and data collection practices. During the sessions, participants reviewed standardized methodologies and contributed valuable suggestions to refine training materials and the design of future field activities.



From top to bottom:

Presenting and discussing with fishers safe handling and release techniques for sturgeons and piked dogfish in Balchik, Bulgaria.

Training on the safe handling and release of sturgeons at the National Environment Agency centre in Batumi, Georgia.

Presentation of awareness-raising materials on the safe handling and release of sturgeon and piked dogfish to stakeholders in Varna, Bulgaria.



Technical activity 3. Update of the BlackSea4Fish webpage

The BlackSea4Fish webpage continued to be updated to support outreach efforts by enhancing the visibility of the project activities and results.

Results

The resources section of the BlackSea4Fish webpage was updated to provide access to materials relevant to BlackSea4Fish activities, including publications, technical reports, and other supporting documents, as well as the Black Sea fisheries scientific database for researchers and stakeholders.

Link

[BlackSea4Fish webpage](#)

This brochure presents the BlackSea4Fish activities and achievements over the 2024–2025 biennium. Established in 2016 and implemented by the General Fisheries Commission for the Mediterranean, this capacity development programme contributes to the sustainable management of Black Sea fisheries by strengthening scientific knowledge, technical capacity and regional cooperation.

Throughout 2024 and 2025, BlackSea4Fish continued to support fisheries management through the implementation of scientific surveys and stock assessments, research on small-scale and recreational fisheries, the reinforcement of monitoring, control and surveillance systems, improvements in bycatch and discard monitoring, and enhanced regional collaboration and stakeholder engagement. In total, 36 activities were implemented.

BlackSea4Fish is implemented thanks to its main donor, the European Union, along with additional support from



The General Fisheries Commission for the Mediterranean is a regional fisheries management organization. With 24 contracting parties, its main objective is to ensure the conservation and the sustainable use of marine living resources as well as the sustainable development of aquaculture in the Mediterranean and the Black Sea.

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