AMARE MED

The Advanced school on Multispecies modelling Approaches for ecosystem-based marine REsource management in the MEDiterranean Sea

Final Report AMARE-MED 2026

22 - 26 June

Villa Bighi, Malta



OGS XJENZA MALTA Stazione Zoologica Anton Dohrn Napoli CNR IRBIM ISTITUTO PER LE RISORSE BIOLOGICHE E LE BIOTECNOLOGIE MARINE TLQS The Laboratory on Quantitative Sustainability

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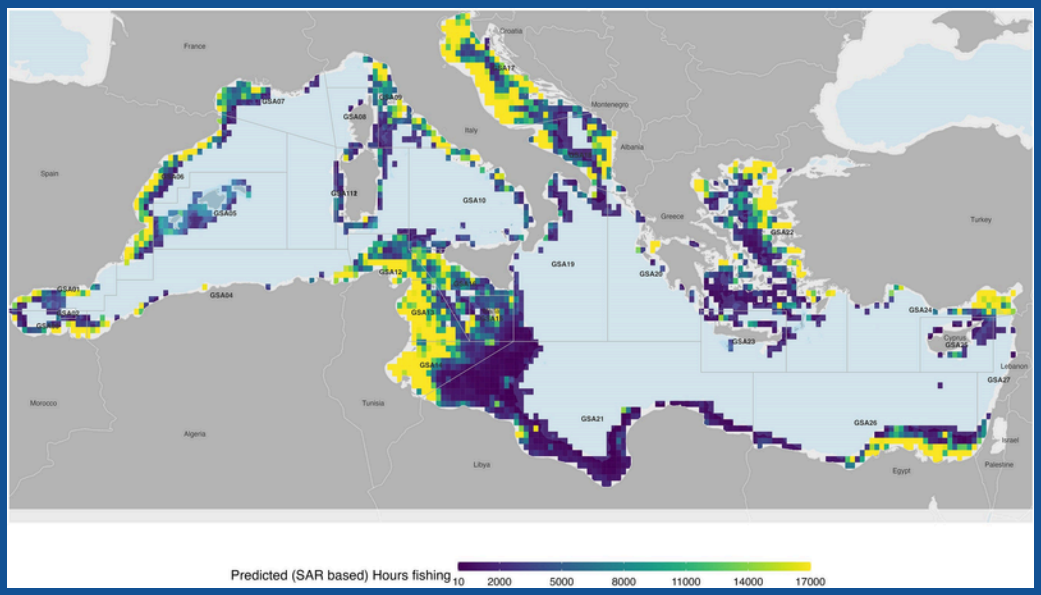
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This report can be cited as Burton Pogledic, S., Libralato, S. (2026) 'Final Report - AMARE-MED 2026'

THE AMARE-MED SERIES

The AMARE-MED concept is to develop an annual advanced school that would represent a high level point of reference for PhD students, researchers and policy makers involved in fisheries management. The school is an opportunity to learn about models and useful approaches for mixed fisheries and it has as its target the Mediterranean context, which is dominated by multiple gears and several target species.

Given an ever increasing need for holistic and ecosystem-based marine resource management in the Mediterranean and Black Seas, the Advanced School Series promotes multispecies modelling solutions. AMARE-MED is promoted by the Dynamics of Ecosystems and Computational Oceanography group in the Oceanography Section of OGS.



The School series has been organized in: Capo Granitola 2017 (Italy); Trieste 2018 (Italy); Venice 2019 (Italy); Split 2021 (Croatia); Larnaca 2022 (Greece); Lisbon 2024 (Portugal); and Tunisia (2025).

Above: *Map of the predicted trawl fishing activity as hours fishing for the whole Mediterranean Sea.* Marsaglia, L. et al. (2025). 'Shedding light on trawl fishing activity in the Mediterranean Sea with remote sensing data.' *ICES Journal of Marine Science, 82(2), p.fsae153,* https://doi.org/10.1093/icesjms/fsae153

AMARE-MED editions are dedicated to 25-30 students selected on the basis of experience, computational ability, subject knowledge and motivation.

Each edition includes the presentation and use (hands-on computer) of two or three different modelling approaches used for scientific analysis, useful for the management of marine renewable resources: MICE, GADGET, RPATH, CMSY, FISHPATH, ECOSPACE, SMART, SDMtmb, VAST, SS3, FEISTY (and many others).

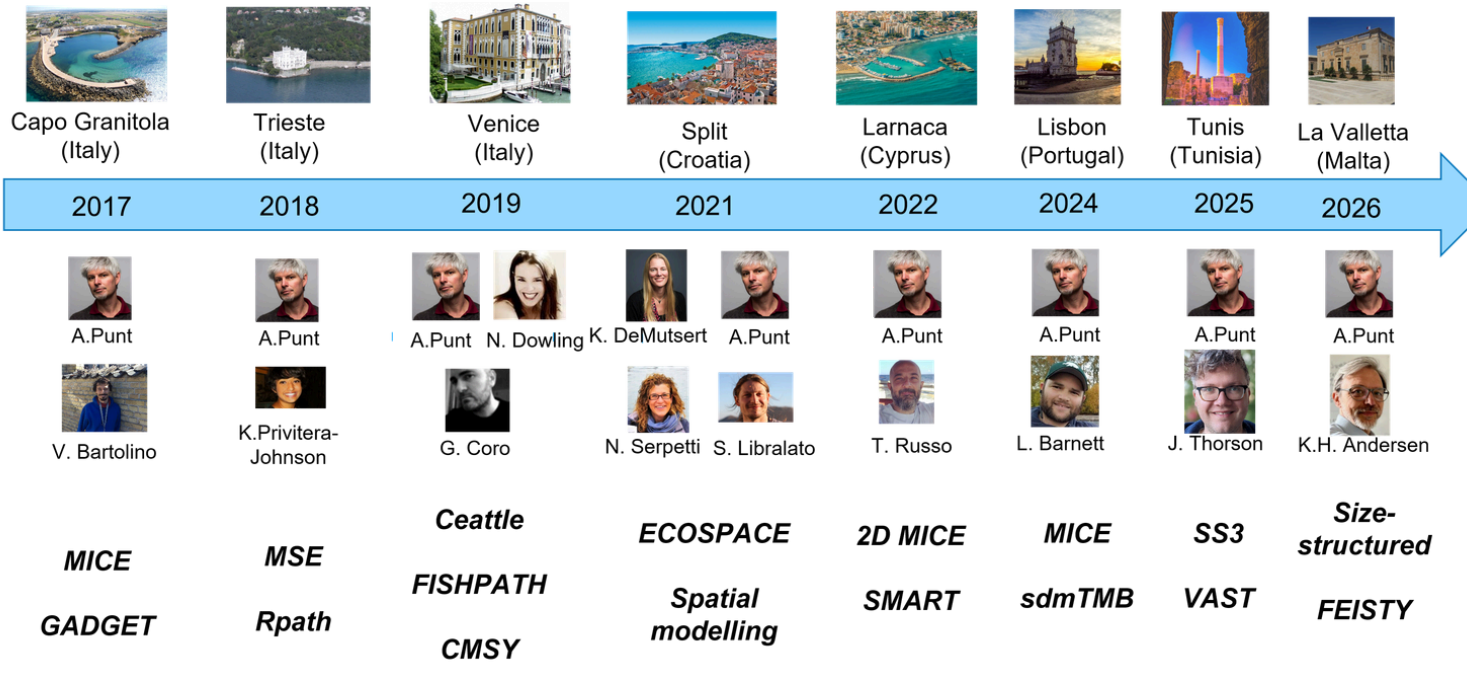


GENERAL AIMS OF THE AMARE-MED SERIES

- To provide theory and hands-on computer practice for understanding and to facilitate the use of multispecies models for fisheries and socio-economic models for fisheries management
- To cover topics and models that provide scientific practical advice for policy makers and management
- To provide in-depth understanding and functioning, applicability, capabilities and limitations of models and analytical approaches

AMARE MED

Internationally renowned scientists such as Andre Punt, Valerio Bartolino, Natalie Dowling, Giampaolo Coro, Kim De Mutsert, Natalia Serpetti, Simone Libralato, Tommaso Russo, Lewis Barnett, and James Thorson were speakers in previous editions, where different single, multispecies and holistic approaches (e.g., MSVPA, MICE models, size-based models, multispecies age-structured assessment model MSASA, Gadget, Atlantis, Osmose, ISISfish, Ecopath with Ecosim, Rpath and many others) were presented, discussed, compared and applied.

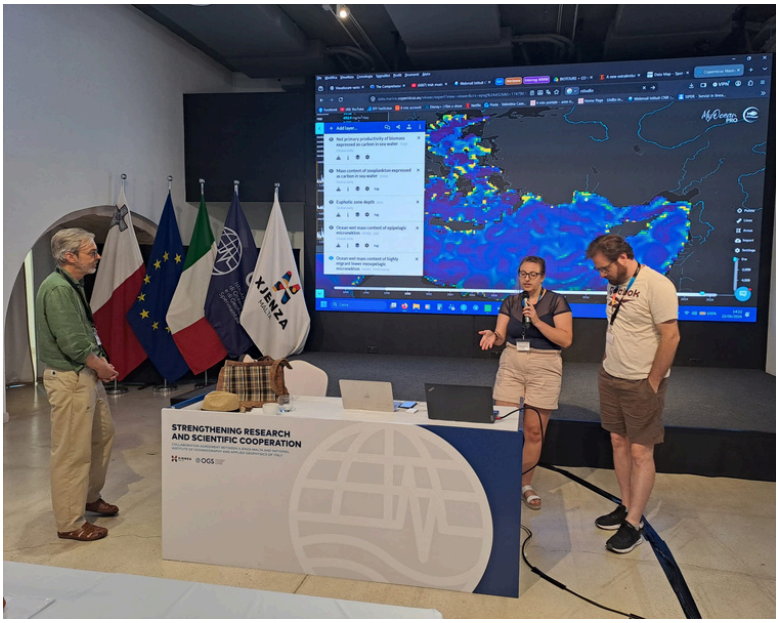


INTRODUCTION

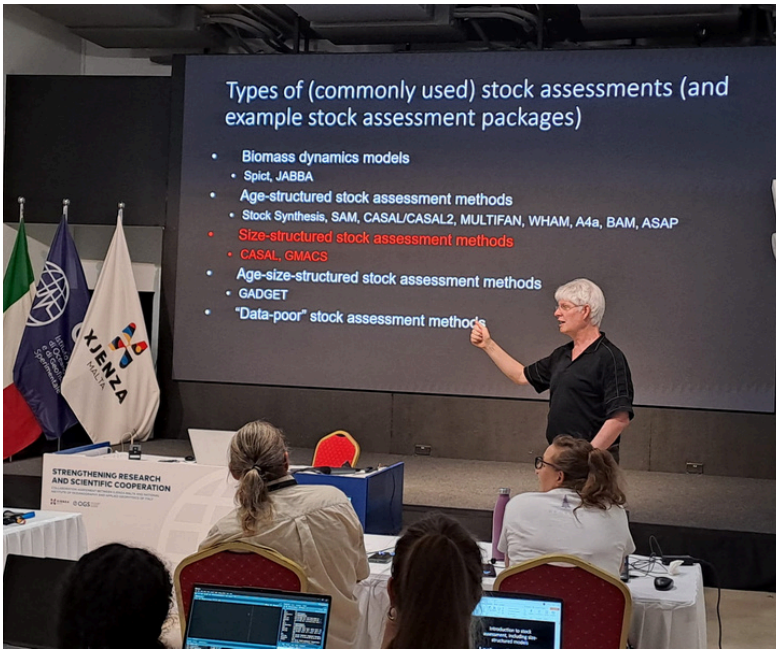
The Summer School underscores the importance of capacity building and regional collaboration in the Mediterranean and Black Sea. The Laboratory on Quantitative Sustainability (TLQS) programme has been supporting AMARE-MED since 2022 and through TLQS, a limited number of selected applicants from non-EU Mediterranean and Black Sea countries received support this year. Additional fellowships were provided by co-organising institutions.

The selection of participants is based on expertise, skills, and interest, as demonstrated through the online application process. Participation is free, reflecting the commitment to fostering inclusivity and access to cutting-edge knowledge.

This initiative continues to strengthen scientific dialogue, cooperation, and capacity building across the region, ensuring the effective application of innovative models and approaches for sustainable fisheries management.









SPECIFIC AIMS OF AMARE-MED 2026

In the context of advancing sustainable fisheries management and fostering capacity building, AMARE-MED 2026 focuses on **quantitative methods based on size-spectra and size-structured data**. AMARE-MED 2026 provided participants with theoretical insights and practical skills.

Contents of size-spectra modelling

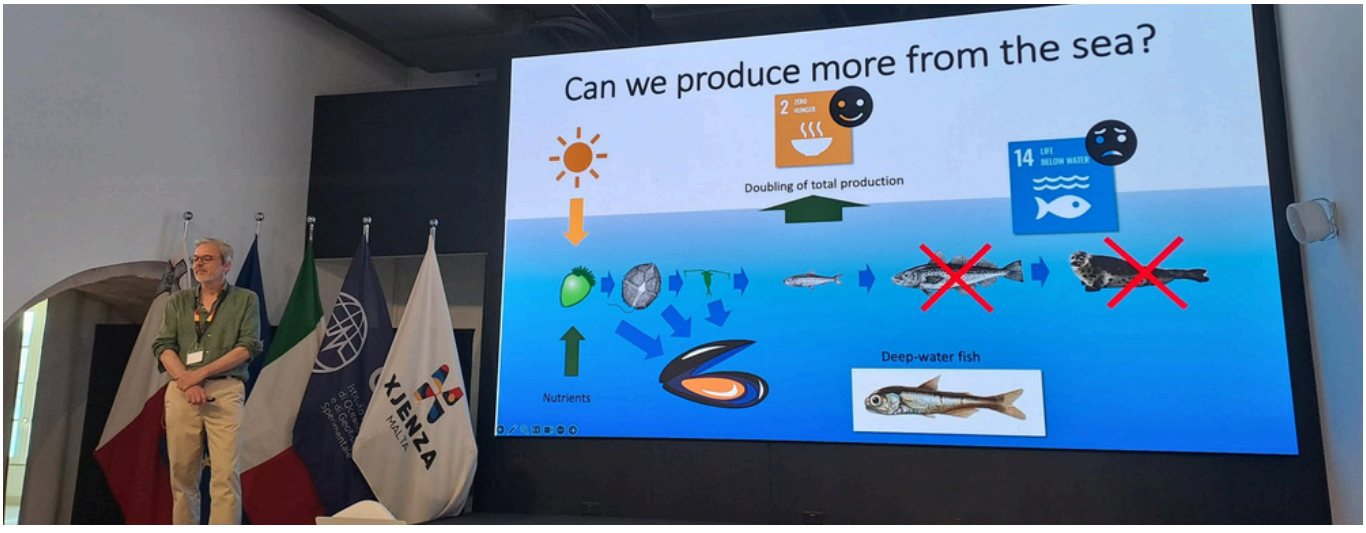
1. Introduction of FEISTY, a size-spectra fish community modelling framework that assesses the biomass, production, and carbon sequestration of the fish community
2. Use of the FEISTY model to test combined effects of zooplankton production, climate change, optimization of fishing exploitation in multispecies context and fishing pressure
3. Available as a R package, FEISTY hands-on sessions are also applied to the Mediterranean context for group work.

Contents of size-structured assessment modelling

1. Introduction to stock assessment methods based on size-structured population dynamics models: model fitting to data
2. Technical interactions among stocks/species with size-structured stock assessment methods: evaluation of the risk associated with alternative harvesting strategies
3. Practical examples in R involved fitting single and multiple species state-space versions of size-structured stock assessment methods.







ORGANISATION

Xjenza Malta was the local supporting insitute for AMARE-MED 2026, and is the Maltese government agency responsible for promoting and coordinating scientific research, technological innovation and scientific dissemination. AMARE-MED 2026 was held at Villa Bighi in Kalkara with full conference facilities.



ORGANISING COMMITTEE

Simone Libralato (OGS, Italy)
Maria Azzopardi (Xjenza Malta)
Emily Agius (Xjenza Malta)





SCIENTIFIC COMMITTEE

Simone Libralato (OGS, Italy);
Alexandra Silva & Carla Gomeiro (IPMA, Portugal);
Enrico Arneri (CNR-IRBIM, Italy);
Béchir Bejaoui (INSTM);
Olfa Benabdallah (INSTM);
Angelo Bonanno (CNR-IRMA, Italy);
Roberto Carlucci (CONISMA, Italy);
Piera Carpi (IMR, Norway);
Francesco Colloca (SZN, Italy);
Gianpaolo Coro (CNR-ISTI, Italy);
Fabio Fiorentino (CNR-IRBIM, Italy);
Germana Garofalo (CNR-IRBIM, Italy);
Valentina Lauria (CNR-IRBIM, Italy);
Saša Raicevich (ISPRA, Italy);
Giuseppe Scarcella (CNR-IRBIM, Italy);
Svjetlana Krstulović Šifner (University Split, Croatia);
Cosimo Solidoro (OGS, Italy);
Maria Teresa Spedicato (Coispa, Italy);
Athanassios Tsikliras (University of Thessaloniki, AUTH);
Nedo Vrgoč (IOF, Croatia)

INVITED LECTURERS



André Punt

School of Aquatic and Fishery Sciences, University of Washington – USA

Size-structured models for stock assessment for multiple species with technical interactions: fitting to data and evaluation of risks of alternative harvesting strategies

Ken Haste Andersen

Technical University of Denmark (DTU)

Introduction of FEISTY, a fish community modelling framework





André Punt & Ken Haste Andersen at the MoU signing, where they were invited to speak.

MEMORANDUM OF UNDERSTANING (MOU)

The first day of AMARE-MED 2026, Monday 22 June marked a significant milestone in the fields of research, innovation, and scientific training in the Mediterranean region with the signing of a Memorandum of Understanding (MoU) between OGS - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale and Xjenza Malta, the Maltese government agency responsible for promoting and coordinating scientific research, technological innovation, and scientific dissemination.

The agreement was signed in Malta by **OGS President Nicola Casagli** and **Xjenza Malta CEO Silvio Scerri**, representing an important step forward in a partnership already active through numerous European and Mediterranean initiatives, including JPI Oceans, the 5+5 Dialogue, BlueMissionMed, the Sustainable Blue Economy Partnership, the ONE Water Alliance, and Horizon Europe activities. The signing of the MoU coincided with the official opening of the AMARE-MED 2026 Summer School - to view the order of speakers, please go to page 10.









From top left clockwise: President Casagli & CEO Scerri, Cosimo Solidoro (OGS/TLQS), Simone Libralato (OGS/AMARE-MED) & Mounir Ghribi (OGS - International Cooperation)

AGENDA

Day 0 – Sunday, 21 June 2026
[Arrival of students and teachers]
17:00 AMARE-MED 2026 informal introduction
17:00-19:00 Introduction of the school, self-presentations, Software loading and installations (e.g. TMB; Rtools,)
19:00-21:00 Ice breaker (Terrace of The Manoel Hotel)

Day 1 – Monday, 22 June 2026
08:45-09:30: Welcome and Opening Ceremony

- Mr Silvio Scerri, Chief Executive Officer Xjenza Malta
- Prof. Nicola Casagli, President, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS)
- Hon. Clifton Grima, Minister for Justice, Research and Innovation
  Official signing of the MoU between OGS and Xjenza Malta

Opening of AMARE-MED 2026:
- The Laboratory on Quantitative Sustainability (TLQS) by Dr Cosimo Solidoro, Director Oceanography section, OGS
- Blue skills to feed jobs by Dr Mounir Ghribi, Director of International Cooperation and Research Promotion, OGS
- Official opening by Dr Maria Azzopardi, Director Internationalisation Unit, Xjenza Malta
- Dr. Simone Libralato, Member of the Scientific Council OGS and Coordinator of the AMARE-MED,

Introducing AMARE-MED Teachers:
- Prof. Andre Punt, Professor and Director School of Aquatic and Fishery Science, University of Washington
- Prof. Ken Andersen, Professor in Theoretical Marine Ecology, Technical University of Denmark, Deputy Chair Centre for Ocean Life

Classes by Ken Andersen
09:30-10:30 Overview #1 (45 min). What is FEISTY? What can it been used for?
10:30-11:00: *Coffee break*
11:00-12:30: Practical #1: Install and run FEISTY with Shiny app and from R
Present: selected result
12:30-13:30: *Lunch*
13:30-15:00: Inspirational lecture #2: Can fisheries be sustainable?
Practical #2: How does the FEISTY fish community respond to fishing?
Present: yield vs F; What is the MSY?
15:00-15:30: *Coffee break*
15:30-17:30: Theory lecture #3: Size spectrum theory with fishing
Inspirational lecture #4: Can fisheries become a “Nature based solution” to climate change?
Discussion: What could be relevant cases?

AGENDA

Day 2 – Tuesday, 23 June 2026

09:00-10:30: Practical #3: Time-varying setup (NWS and Global cases for different positions and for the entire area)
10:30-11:00: *Coffee break*
11:00-12:30: "Hackaton": Design your own use-cases around a "Research Question"
Practical #4: Work on your own cases
12:30-13:30: *Lunch*
13:30-15:00: Practical #4: Work on your own cases
15:00-15:30: *Coffee break*
15:30-17:30: Inspirational lecture #5: Size in the ocean
Practical #4: Finalize cases

Day 3 – Wednesday, 24 June 2026

09:00-10:30: Case presentations
10:30-11:00: *Coffee break*
11:00-12:30: Discussion: FEISTY strengths & weaknesses compared with other frameworks: MIZER, EwE, Atlantis, ...
Technical/inspirational lecture #5: Size-based plankton modelling: The Nutrient-Unicellular-Multicellular framework (NUM)
Course evaluation

12:30-13:30: *Lunch*

Classes by Andre Punt

13:30-15:00: A: Introduction to stock assessment, including size-structured models
15:00-15:30: *Coffee break*
15:30-17:30: B: Introduction to RTMB

Day 4 – Thursday, 25 June 2026

09:00-10:30: C: Size-structured models continued: fitting and quantifying uncertainty
10:30-11:00: *Coffee break*
11:00-12:30: Coding assignment 1: Fitting a state-space size-structured model
12:30-13:30: *Lunch*
13:30-15:00: D: Size-structured models and technical interactions
15:00-15:30: *Coffee break*
15:30-17:30: Coding assignment 2: Extending the state-space size-structured model

Day 5 – Friday, 26 June 2026

09:00-10:30: E: Projections, harvest control rules and comparing management options
10:30-11:00: *Coffee break*

AGENDA

11:00-12:30:	Coding assignment 3: Reference points for species impacted by technical interactions
12:30-13:30:	*Lunch*
13:30-14:30:	Coding assignment 3: Reference points for species impacted by technical interactions
14:30-15:30:	Coding assignment 4: Developing management plans for species impacted by technical interactions
15:30-16:00:	*Coffee break*
16:00-17:30:	Coding assignment 4 continued
17:30-18:00:	**Certificates and Closure**
18:00:	*Transport to Birgu*
18:30-19:30:	**Cultural Tour – Fort St. Angelo**
19:30-21:30:	Social Dinner
21:30:	*Transport to Valletta*

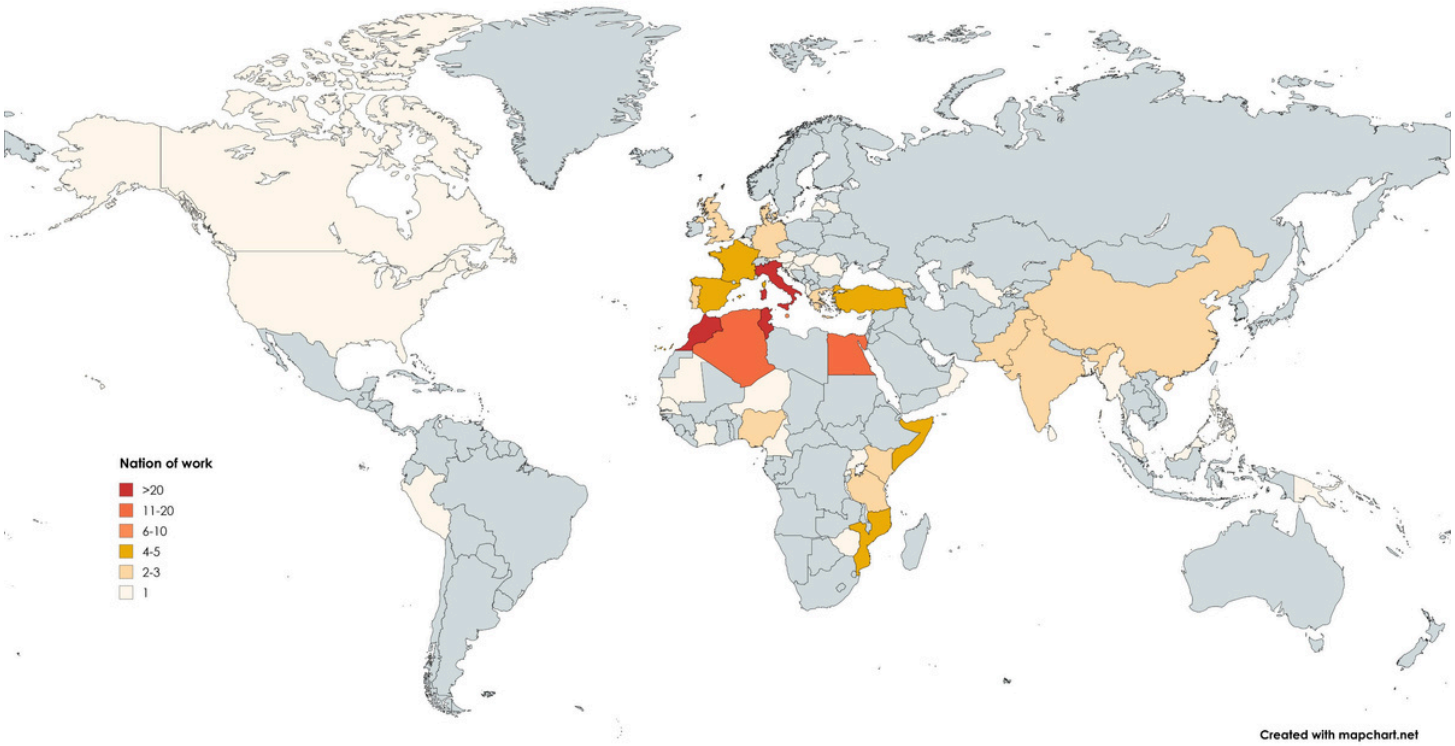


APPLICATION AND SELECTION PROCESS

The call to apply for AMARE-MED 2026 was launched on 13 March 2026 and closed at 23.59 CET on 31 March 2026. The application form was in a Google Doc format.

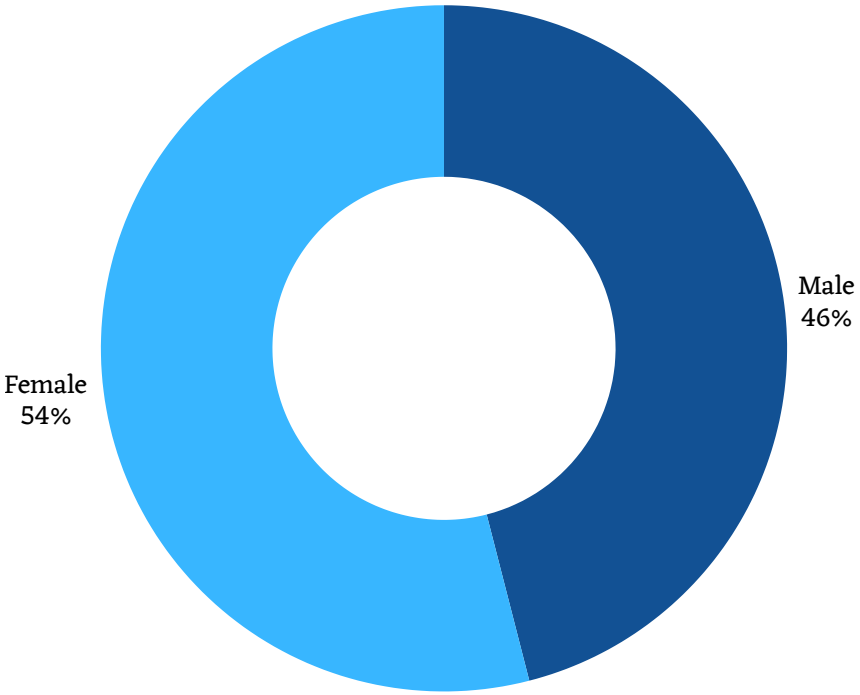
There were **186 applications** (29 more than in 2025) from among **52 nationalities** (13 more than in 2025) (see map below), which indicates that the dissemination of the AMARE-MED Call is increasingly reaching a wider target audience with each edition. The applications were reviewed and selected by the **Selection Committee**, consisting of *Simone Libralato and Igor Celic (OGS, Italy); Maria Azzopardi, Emily Agius and Sandrine Borg (XJENZA, Malta); Francesco Colloca (Stazione Zoologica Anton Dorhn - SZN); Giuseppe Scarcella, Valentina Lauria, Germana Garofalo and Fabio Fiorentino (Consiglio Nazionale delle Ricerche - CNR)* through a vigorous grading system before the final 30 were selected while a small number was placed on the waiting list. Programming skills, experience in the field, motivation, status as a young career scientist and representativeness of countries and institutions were all factors that were taken into account in the decision-making process.

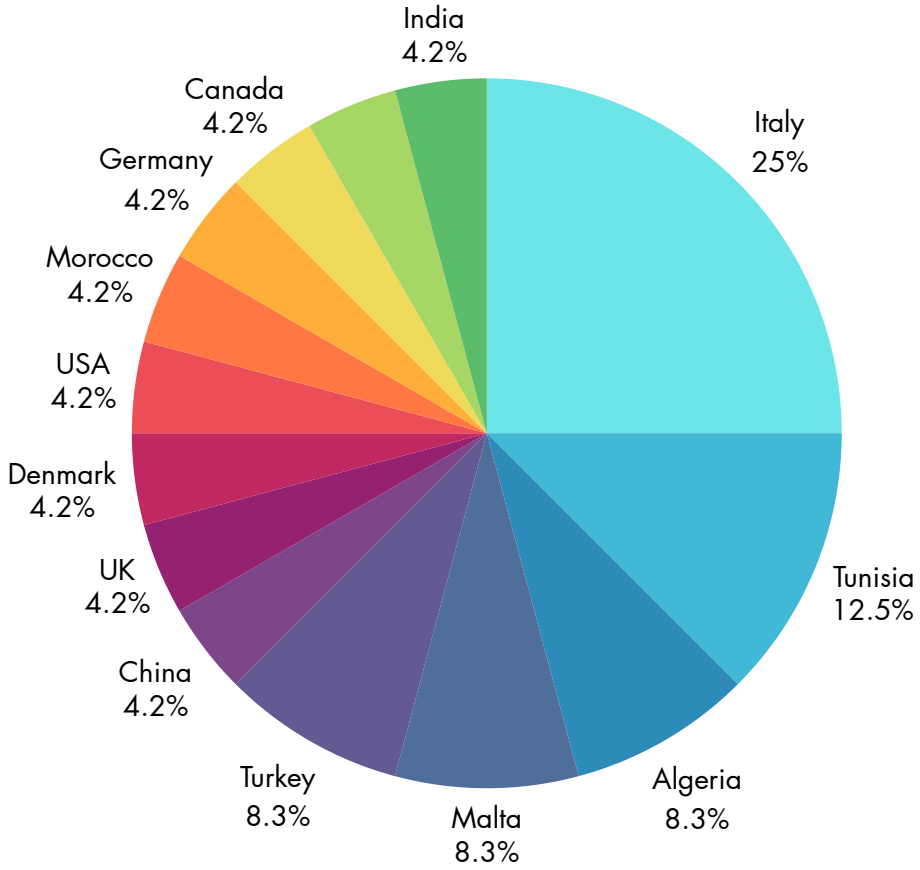
Unfortunately, a small number of seleted students had to withdraw due to last-minute issues, which led to the further selection of applicants from the waiting list. AMARE-MED 2026 welcomed 24 students.



Map of nationality of the 186 applicants - AMARE-MED 2026

PARTICIPANTS

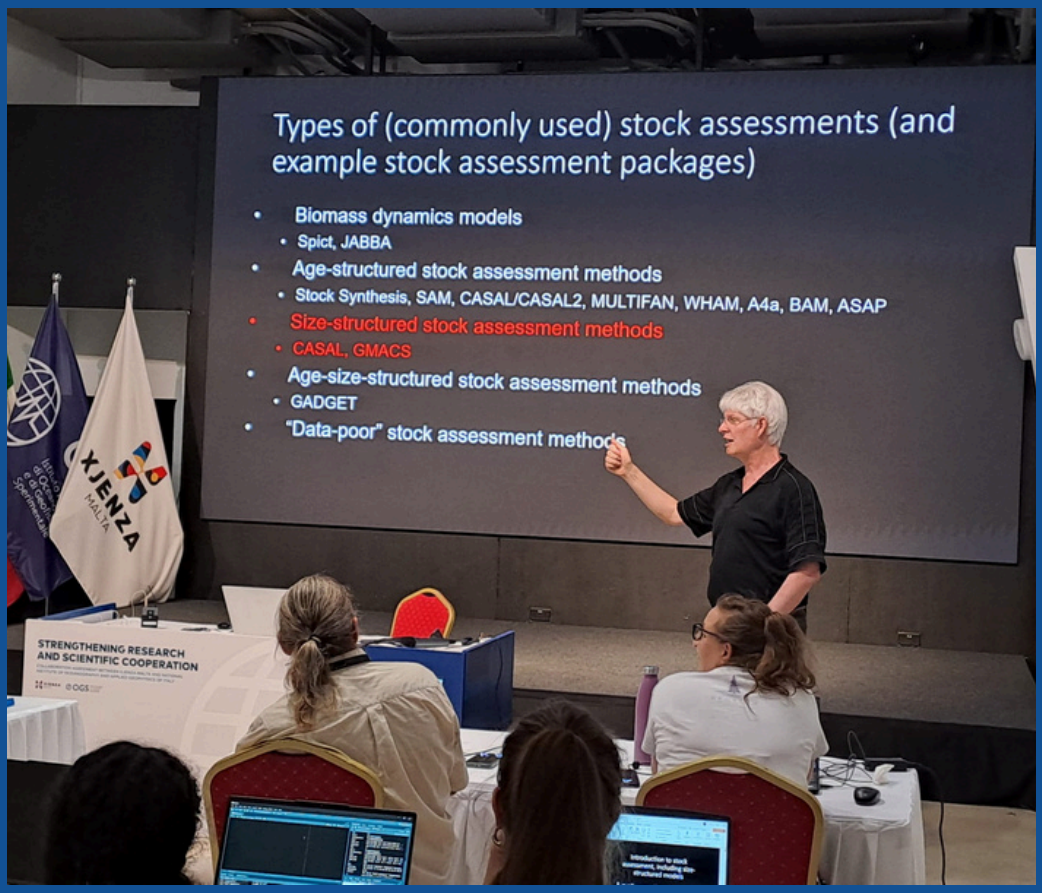




Participants brought experiences from Mediterranean and beyond

COURSE MATERIAL

Lectures started with an introduction to FEISTY by Prof. Ken H. Andersen, explaining the need for a quantitative approach able to capture the oceanographic bottom-up effects (temperature and primary production). Considering the need to represent multiple species, participants were led by the fact that size guides several biological processes, interactions in the food web as well as fisheries, so fish size is the key fundamental trait used by FEISTY to represent the community in the marine ecosystem. The model of size distribution was explained and made useable for all participants that had the possibility to link to oceanographic variables obtained from the Copernicus Marine Service. Doing the applications, participants were confronted with the need to define objectives clearly and with emerging secondary cascading effects on the food web due to changes in production and fisheries. During the classes, several questions and open discussions on philosophical, scientific and social questions were proposed by the lecturer to engage the participants.

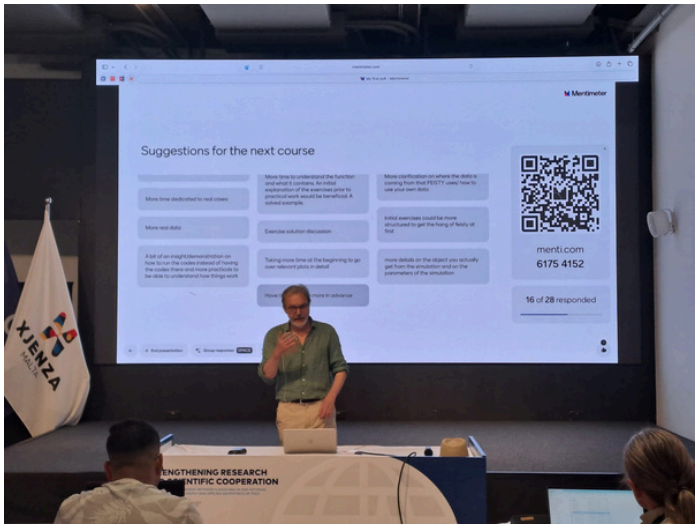


In the second part of the School, Prof. Andre Punt described the population dynamic model using size-structured data. Through theoretical presentation of increasing additional processes, lectures enabled the participants to understand how matrix calculations were involved to represent growth, reproduction, and fishing in a size-structured model. Likelihood and minimization functions were also the objective of the presentation in order to give the instruments to participants to work on real data.

With a set of data, the participants in fact were able to fit the model, estimate uncertainty and the log-likelihood profile, and for example, to estimate fish growth. Successively, multispecies effects were introduced through technical interactions in order to show how maximum economic yield is affected in a multispecies-multigear context. The lectures provided the occasion to introduce management options and the harvest control rule that are used in fisheries management and facilitated the group of participants to discuss the differences between the current Mediterranean management process and targets.

The shared Google Drive was effectively used to share presentations and work done during AMARE-MED 2026, as well as useful literature and photos.

EVALUATION OF COURSE BY PARTICIPANTS



Feedback provided by participants represents an invaluable reference point for improvement and the design of future editions of AMARE-MED. All answers remain anonymous.

Invited lecturer, Prof. Ken Haste Andersen, presented a Mentimeter survey at the end of his lessons on the FEISTY model, which proved useful in gauging student progress and perceptions, including on class methodology.

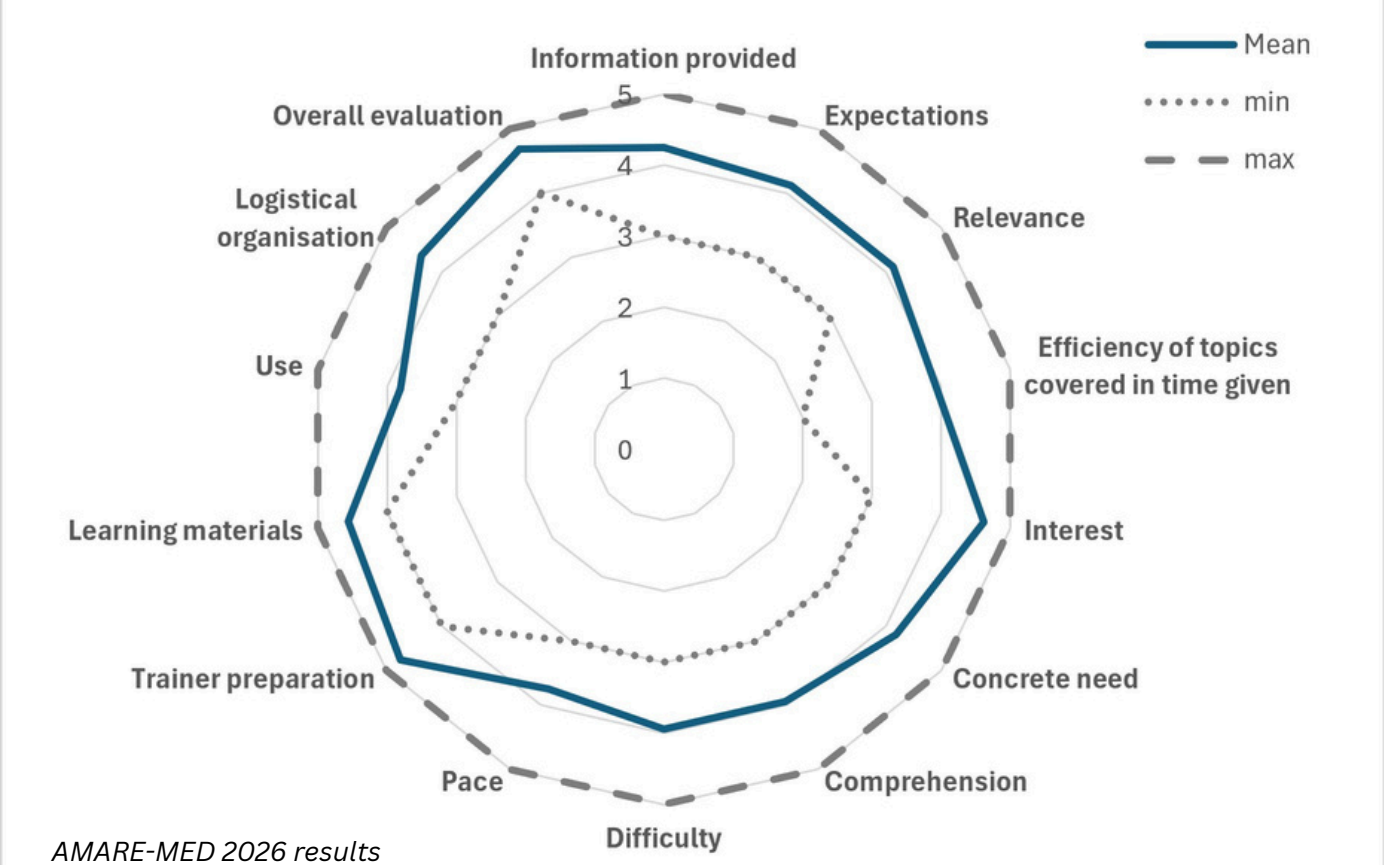
The questions included topics such as what students would have liked more of and what they learned; the most popular answer included the desire for more time to work on exercises while the class was divided on the subject of content level: over half found the level of difficulty appropriate, just under half too high. The students also provided detailed responses on how FEISTY should be improved as a model, as illustrated to the left.



EVALUATION OF COURSE BY PARTICIPANTS

As in previous editions, participants were also sent an evaluation questionnaire by the AMARE-MED Secretariat, which featured 14 questions on: the provided level of information regarding objectives, how far expectations were met, how relevant was the training to their work, the efficiency regarding the number of topics and time allotted, how interesting was the course, how much the course was oriented to concrete needs and problems, the level of comprehension, the level of difficulty, the pace, trainer preparation, the standard of learning materials, the usability and applicability of course content, the logisitical organisation of the course, and finally the overall evaluation.

Of the 24 participants, 16 responded. The responses are summarised below.



AMARE-MED 2026 results

The radar chart of evaluation results from this year above, are similar to those extracted from the evaluation of AMARE-MED 2025 (right). Notable points to highlight include the improved efficiency of topics covered in the time given for this year's edition, although the level of comprehension was marginally compromised this year possibly due to the complexity of methods presented.

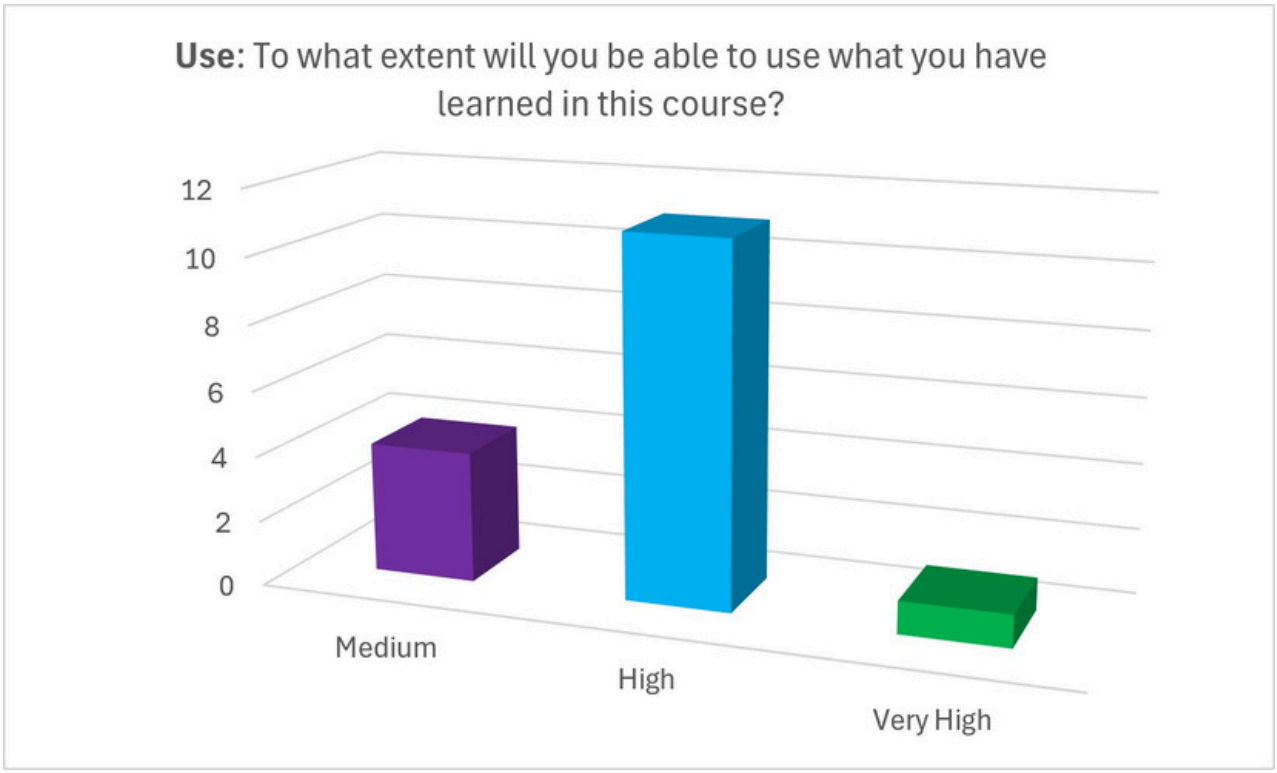


AMARE-MED 2025 results

EVALUATION OF COURSE: HIGHLIGHTS

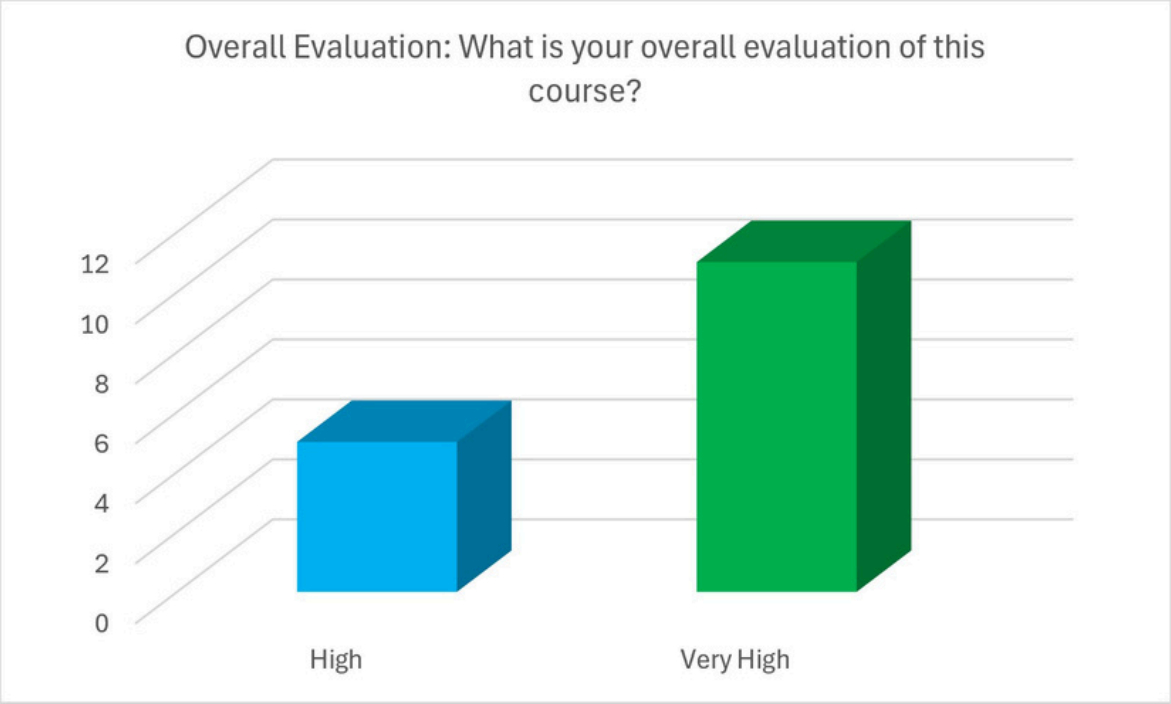
Highlights of the feedback received include:

- Nearly all participants selected 'high' - 'very high' on **understanding course objectives and meeting expectations**
- The **relevance of the material** continued to score highly with respect to last year's results, although 25% of respondents replied that the relevance to their work was 'medium.' Nevertheless, those who gave high scores commented: *"The content was very relevant to my current role. Although some parts were a bit above my level, it really made me think and broadened my perspective"* while another wrote: *"I will probably be able to do an assessment using Andrè's ints and I will try to use Ken's approach as complementary in food web models,"* thus reflecting the effectiveness of combining two different approaches of two teachers on the course.
- 94% of respondents rated the **level of interest** of the content as 'high' or 'very high' with one comment reflecting the typical response: *"The course was engaging throughout. The combination of lectures, discussions, and hands-on exercises kept the sessions interesting."*
- One of the most valuable questions posed for the AMARE-MED team is *"To what extent did you consider the training was oriented to **concrete needs and problems?"*** and like last year, the answers were encouraging with more than 80% who answered declaring 'high' or 'very high', with comments including: *"the training is perfect for building solutions for fisheries"* and *"For fishery scientists, the stock assessment and FEISTY modelling was real world problem oriented."*
- *On **use**, the graph below illustrates the applicability of the course in real-world scenarios:*



ROOM FOR IMPROVEMENT?

- Although the **level of comprehension** among respondents scored highly, around a third marked their level of understanding as 'medium': *"There were topics I struggled with more than others, but I was expecting that. Overall I understood and learnt well"* - however, *"Some advanced concepts required additional attention, but the trainers were always willing to answer questions and provide clarification."* Additionally, more than a third found the **pace** of 'medium' appropriacy and almost half the level of difficulty 'fairly appropriate.' These results are compatible with those of Prof. Andersen's Mentimeter survey on the level of difficulty.
- Echoing AMARE-MED 2025, the **teachers and the learning materials** also received very high scores: *"Yes! The quality of the learning material was very high."* However, it was suggested more than once that it would be beneficial to share related papers in advance to give students a headstart in grasping the advanced content. Next year, the AMARE-MED Secretariat will take this into account when planning the content with the teachers.
- The results of the overall evaluation this year below, also reflected the success of Amare-Med 2026.



THE FINAL WORD

Clearly, participants found the content demanding with an intensive pace, with many students feeling stretched. However, this is precisely the target student the AMARE-MED team and the teachers aim to bring to the Summer School - in order to explore perspectives and deepen existing knowledge, thus achieving its overarching objective of facilitating the use of multispecies models for fisheries and socio-economic models for fisheries management, in line with current needs. Future efforts to improve might include earlier distribution of material and code in order for participants to prepare themselves before the lectures.

SUPPORT



Sophie Burton Pogledic (OGS)

The annual AMARE-MED Secretariat

This year, the Secretariat was also supported by **Sandrine Borg (Xjenza Malta)**



Giulia Casalena (OGS)

Participants and teachers were provided with support prior to the week of Summer School and throughout the week in Malta.

BEFORE:

- An info pack was sent the week of 15 June (Annex 1)
- Full logisitical support was provided with flights via Turismo 85, as well as with visa applications
- A Whatsapp group chat was set up to ensure participants and teachers could remain in contact with one another outside the class

DURING:

- Participants were asked to sign a privacy notice statement at the start of the Summer School week (Annex 2)
- During the Summer School week, participants were supported with details of social activities after class

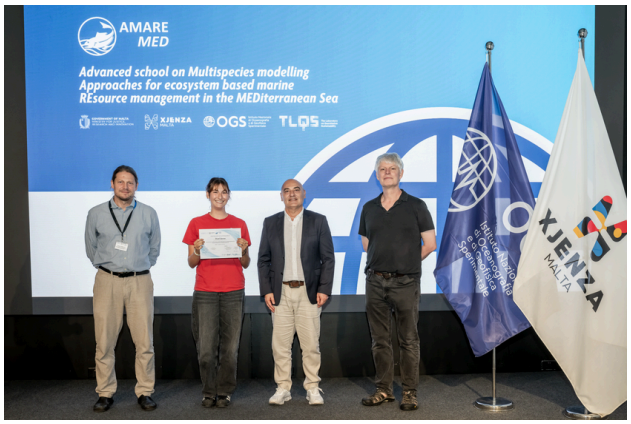
AFTER:

- Participants were sent the Amare-Med Evaluation via a Google Doc. Results of the evaluation can be found in the Annexes from Page 22.

CERTIFICATES

Participants were presented with certificates of completion on the last day of the Summer School (Annex 3)





FINAL COMMENTS

AMARE-MED 2026 successfully achieved the objectives of improving the capacities of selected applicants on quantitative approaches to support sustainable fisheries management. In particular, participants were exposed to very recent developments on size-spectra modelling using FEISTY, as well as exploring its application to Mediterranean Sea plankton data by linking with Copernicus Marine Service products and discussion on relevant ecological and social questions related to marine resource exploitation and production. Moreover, participants gained practice with the use of stock assessment models based on size-structured data, considering technical interactions between fisheries. A combination of theory and practice proved to be key in supporting the transfer of knowledge. The development of activities within working groups enabled the proactive application of methods as well as authonomous thinking on the best solution. Overall, the real success of the Summer School will be measured in the following years by analysing the number of Mediterranean studies that will use the approaches presented.

ACKNOWLEDGEMENTS

LOCAL ORGANIZATION
Azzopardi Maria (Xjenza Malta)
Agius Emily (Xjenza Malta)
Borg Sandrine (Xjenza Malta)

Funding management
Nicola Casagli (OGS) - TLQS coordination
Cosimo Solidoro & Donata Canu (OGS) - TLQS scientific coordination

Logistics and administrative assistance
Fabiana Brancolini (OGS) - financial assistance and management
Antonella Barbieri (OGS) - travel and missions
Isabella Amato (Turismo85) - travel assistance and management
Giuliano Colombo (OGS) - financial assistance and management

Publications assistance
Sophie Burton Pogledic (OGS) - AMARE-MED report
Giulia Casalena (OGS) - Flyer and Info Pack

FINANCIAL SUPPORT

The Laboratory on Quantitative Sustainability (TLQS)
https://quantitativesustainability.org

TLQS The Laboratory on Quantitative Sustainability

INFO PACK

“Advanced school on Multispecies modelling Approaches for ecosystem based marine REsource management in the MEDiterranean Sea”

Summer School 2026
22-26 June in La Valletta, Malta



XJENZA MALTA
OGS Istituto Nazionale di Oceanografia e di Geofisica Sperimentale
TLAS The Laboratory on Quantitative Sustainability
Stazione Zoologica Anton Dohrn Napoli
CNR IRBIM ISTITUTO PER LE RISORSE BIOLOGICHE E LE BIOTECNOLOGIE MARINE

📍 **Malta**

🗓️ 22 - 26 June 2026

Background

AMARE-MED 2026 Programme
Amare-MED will provide participants with theoretical insights and practical skills, covering essential topics such as:

- **Size-structured models – Fish population dynamics by size.**
- **Stock assessment – Estimating stock status and exploitation.**
- **Multi-species interactions – Technical and ecological species interactions.**
- **State-space models in R – Practical modelling exercises in R.**
- **Harvest strategies – Risk evaluation of fishing scenarios.**
- **FEISTY framework – Fish community and ecosystem modelling.**
- **Climate & fishing impacts – Effects on biomass and production.**
- **Mediterranean applications – Case studies in Mediterranean ecosystems.**

The week-long course will blend lectures with hands-on programming, equipping participants with advanced tools and methodologies crucial for fisheries management.

Each edition includes the presentation and use (hands-on computer) of two or three different modelling approaches used for scientific analysis, useful for the management of marine renewable resources: MICE, GADGET, RPATH, CMSY, FISHPATH, ECOSPACE, SMART, SDMtmb (and many others). Internationally renowned researchers such as Andre Punt, Valerio Bartolino, Natalie Dowling, Giampaolo Coro, Kim De Mutsert, Natalia Serpetti, Tommaso Russo, Lewis Barnett were speakers in previous editions. Since 2017, the OGS modelling group has been the promoter and main organiser of AMARE-MED, in collaboration with other Italian and foreign research institutes, which have also hosted some editions (2017 CapoGranitola-Italy; 2018 Trieste-Italy; 2020 Venice-Italy; 2022 Split-Croatia; 2023 Larnaka-Cyprus; 2024 Lisbon-Portugal; 2025 Tunisia).

- This year, AMARE-MED 2026 will be held in Malta from 22 - 26 June, organized by OGS and XJENZA Malta,covering the essential topic of size-based fish modelling. The teachers will be Andre Punt and Ken Haste Andersen.





What is and what is not included in the support for your travel and accommodation?

Included:

- Meals (only lunches) and social dinner for the the 26 June.
- Welcome activities and coffee breaks
- Field trip as study visit

Not included:

- Local Travel expenses (country of origin)
- Insurance
- Costs for visa
- Dinners
- Any other cost not mentioned in the “included” list

Do I need insurance?

Yes, it is important to have sufficient insurance when participating in the Summer School.
Check the appropriate insurance you need with the Visa Office before you proceed with the payment.

People that need accommodation

Accommodation is available for participants who require lodging. Many of the participants will be in the Monoel Hotel Valletta 55 Old Theatre Street Valletta, VLT 1427, Malta.

People whit accomodation covered

For participants whose accommodation expenses are covered, rooms will be shared with another participant of the same gender (mixed-gender rooms will not be arranged). The accommodation includes breakfast.

If you have any food allergies or dietary restrictions, we kindly ask that you inform us in advance so appropriate arrangements can be made.

What is the voltage in Malta?

230 V with a frequency of 50 Hz.
Malta uses Type G plugs and sockets, which are the same rectangular, three-prong outlets used in the United Kingdom.





Will I have an Internet connection?

During all activities and lessons between the 22nd and the 26th of June you will be provided with an Internet connection. The Hotel's own Wi-Fi network will also be made available to you during your stay.

What living expenses can I expect during my journey in Malta?

Lunch will be provided by the organisation only during working days (22-26 June), while dinners are not included (except for the social dinner previously mentioned). Therefore, we recommend to bring the necessary amount of money for the following activities:

- Dinners and extra meals, roughly
- Public transport: depending on your interests
- Other expenses (at minimum, the amount increases if you visit more museums and undertake more social activities)

What is the common form of payment in Malta? Should I bring Euros?

The Euro is the currency in Malta. You could consider bringing some cash with you for the first day or so, but overall there are plenty of ATM's available, and VISA and Mastercard credit and debit cards are accepted in most shops and restaurants.

What is the weather like in Maltese coast in summer?

Summers in Maltese coast can be described as hot. Usually the average temperature will be around 25-28 degrees Celsius. Make sure to bring a light summer jacket that you can wear during the evenings. We suggest you bring sun protection (sun cream, sunglasses, hats, ...).
Bring an umbrella in case it rains!

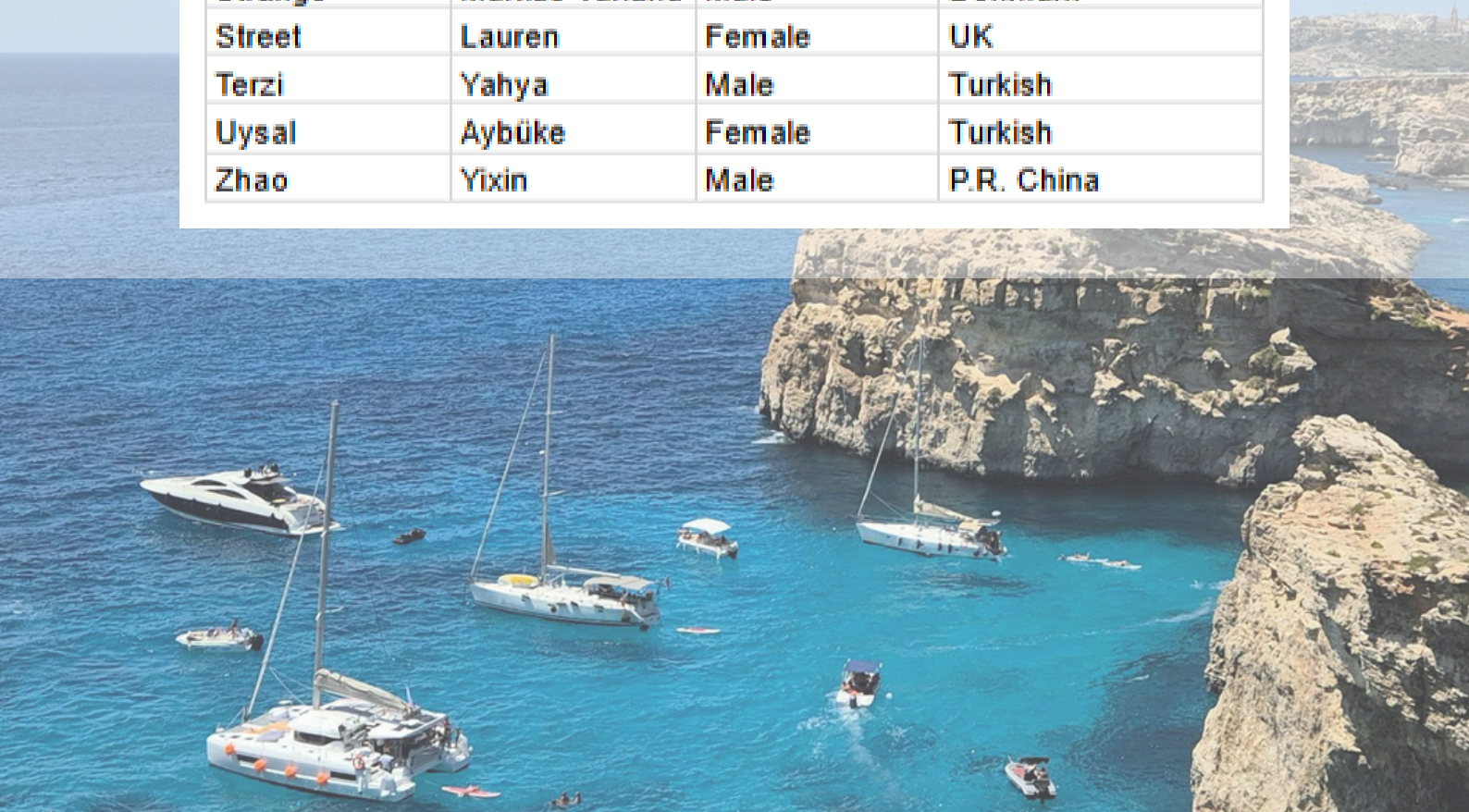
Live communication: join the Whatsapp group!

For urgent issues and live communications, please join the Whatsapp group:
https://chat.whatsapp.com/IHJHPwnEsIBGcqNtzgbtFF?mode=gi_t



Participants list TBD

Last name	First name	Gender	Nationality
Arcioni	Martina	Female	Italian
Ben Abdallah	Olfa	Female	Mahdia (Tunisia)
Camilleri	Kelly	Female	Maltese
Caserta	Valentina	Female	Italian
Cherubini	Carla	Female	Italian
Falzon	Sharon	Female	Maltese
Fiala	Sarah	Female	Canada/Czech
Filali	Tahar	Male	Algeria
Ghosh	Sinchan	Male	Indian
Halouani	Ghassen	Male	Tunisia/France
Ingrosso	Maurizio	Male	Italian
Jabeur	Chédia	Female	Tunisia
Kamberi	Elvis	Male	Albania
Kroebel	Sina	Female	Germany
Moro	Stefano	Male	Italian
Okba	Zahra	Female	Moroccan
Pierucci	Andrea	Male	Italian
Shipley	Madison	Female	USA
Spiteri	Kelly	Female	Maltese
Strange	Markus Varlund	Male	Denmark
Street	Lauren	Female	UK
Terzi	Yahya	Male	Turkish
Uysal	Aybüke	Female	Turkish
Zhao	Yixin	Male	P.R. China



Getting here

How to reach the hotel from the Airports.



🚖 Option 1: Taxi (Fastest & Convenient)

- Duration: Approximately 25–35 minutes
- Cost: Around €20–25 (fixed official fare from the airport)
- Details: Taxis are readily available outside the arrivals terminal. Official taxis in Malta (white cars) operate on fixed fares from the airport, so there are no surprises on the price. For a more predictable experience, you can also use apps like eCabs or Bolt, which are widely used on the island and offer transparent pricing.



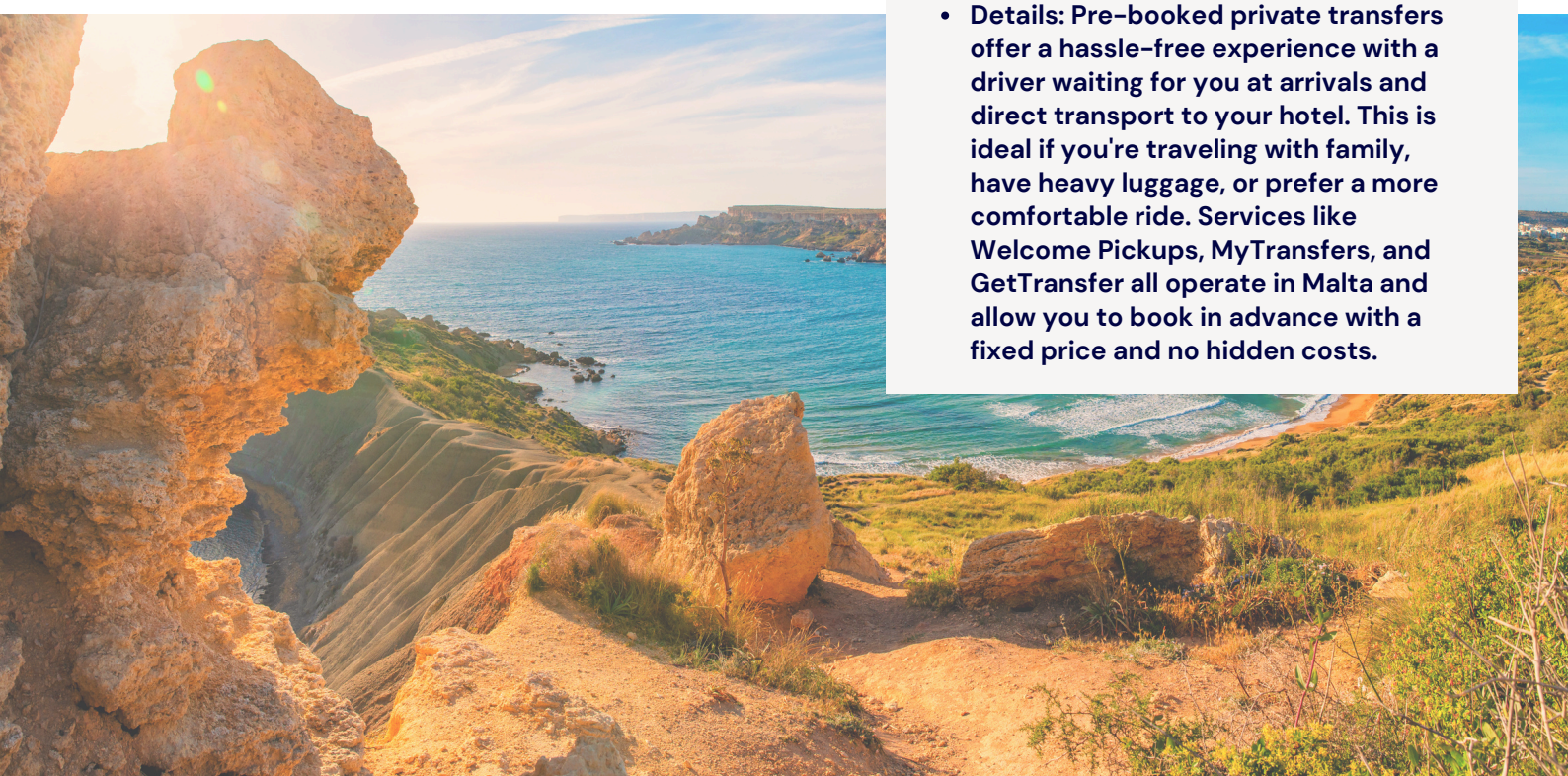
🚌 Option 2: Public Bus (Budget-Friendly)
Duration: Approximately 45–60 minutes

- Cost: €1.50 (winter) / €2.00 (summer)
- Route:Take bus X4 from the airport directly to Valletta Bus Terminal.
- From Valletta, connections are available to most parts of the island.
- Note: Buses run frequently throughout the day. However, they can get crowded during peak hours and in summer, and may be less convenient if you're carrying heavy luggage. The X4 is an express route, making it the fastest and most direct bus option from the airport.



🚗 Option 3: Private Transfer (Comfortable & Door-to-Door)

- Duration: Approximately 25–35 minutes
- Cost: Around €25–40 (depending on destination and provider)
- Details: Pre-booked private transfers offer a hassle-free experience with a driver waiting for you at arrivals and direct transport to your hotel. This is ideal if you're traveling with family, have heavy luggage, or prefer a more comfortable ride. Services like Welcome Pickups, MyTransfers, and GetTransfer all operate in Malta and allow you to book in advance with a fixed price and no hidden costs.





Venue

The venue of our Summer School for the week it is Villa Bighi Dawret Fra Giovanni Bichi, Il-Kalkara KKR 1320, Malta

Transportation between both venues and to the field trip venue is provided by bus, meaning that all the group will be moving together. If for any reason you need to move on your own to and from the lesson venue, we kindly ask you to inform us in advance.

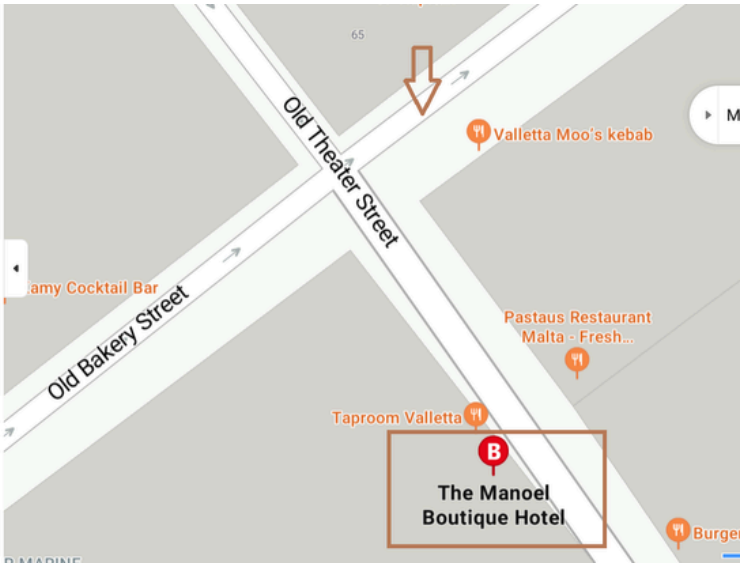
Exercise material for all the week in the drive folder:
https://drive.google.com/drive/folders/1nYvOm2909nI-yLANFGZFwysW-Ubk2VMx?usp=sharing



Meeting point

The group will move together to participate in all the activities. On the first day (22nd June) we will meet at 08.00 AM in the hall, the bus leave at 08.10 AM the vans will be in Old Bakery Street. See the image

We will go together to Villa Bighi where all the lessons will take place for all the Summer School week.



Please is kindly recommended to arrive on time, as arriving late is disrespectful to the professors who are giving the lecture



STRENGTHENING RESEARCH AND SCIENTIFIC COOPERATION

COLLABORATIONAGREEMENT BETWEENXJENZAMALTA AND NATIONAL INSTITUTE OF OCEANOGRAPHY AND APPLIED GEOPHYSICS OF ITALY

AGENDA

22 JUNE 2026 | 08:45-09:30
ESPLORA PLANETARIUM HALL,
VILLA BIGHI, KALKARA

08:45

Welcome and Opening Ceremony

Opening Speech by
Mr Silvio Scerri, Chief Executive Officer Xjenza Malta

Introductory Speech by
Prof. Nicola Casagli,President, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS)

Closing Speech by
Hon. Clifton Grima, Minister for Justice, Research and Innovation

Official signing of the MoU between OGS and Xjenza Malta

09:00

Opening of AMARE-MED 2026:

The Laboratory on Quantitative Sustainability (TLQS) by
Dr Cosimo Solidoro, Director Oceanography section, OGS

Blue skills to feed jobs by
Dr Mounir Ghribi, Director of International Cooperation and Research Promotion, OGS

Official opening by **Dr Simone Libralato, Member of the Scientific Council and Coordinator of the AMARE-MED Training Programme, OGS & Dr Maria Azzopardi, Director Internationalisation Unit, Xjenza Malta**

Introducing AMARE-MED Teachers:

Prof. Andre Punt, Professor and Director School of Aquatic and Fishery Science, University of Washington

Prof. Ken Andersen, Professor in Theoretical Marine Ecology, Technical University of Denmark, Deputy Chair Centre for Ocean Life

09:30

Closing Remarks

GOVERNMENT OF MALTA
MINISTRY FOR JUSTICE, RESEARCH AND INNOVATION

XJENZA MALTA

OGS Istituto Nazionale di Oceanografia e di Geofisica Sperimentale

WEEKLY AGENDA

Day 0 – Sunday, 21 June 2026

[Arrival of students and teachers]

17:00 AMARE-MED 2026 informal introduction

17:00-19:00 Introduction of the school, self-presentations, Software loading and installations (e.g. TMB; Rtools,)

19:00-21:00 Ice break (Terrace of The Manoel Hotel)

Day 1 – Monday, 22 June 2026
Welcome and opening cerimony
look the following
STRENGTHENING RESEARCH AND SCIENTIFIC COOPERATION agenda

Day 1 – Monday, 22 June 2026

Classes by Ken Andersen

09:30-10:30 Overview #1 (45 min). What is FEISTY? What can it been used for?
10:30-11:00: *Break - please note, coffee will be available throughout the day*
11:00-12:30
Practical #1: Install and run typical shelf, eutrophic and oligotrophic setups
Theory #1: What is "inside the box"?

12:30-13:30: *Lunch*

13:30-15:00
Practical #2: What are the feeding level, mortalities, and growth trajectories from your test-case?
15:00-15:30: *Break - please note, coffee will be available throughout the day*
15:30-17:30
Practical #3: Time-varying setup (MED case for different positions)
Discussion: What could be relevant cases?

Day 2 – Tuesday, 23 June 2026

09:00-10:30: Advanced topic: FEISTY squid
10:30-11:00: Break - please note, coffee will be available throughout the day
11:00-12:30: Practical #4: Work on your own cases
12:30-13:30: Lunch
13:30-15:00: Case presentations
15:00-15:30: *Break - please note, coffee will be available throughout the day*
15:30-17:30: Theory: general size spectrum theory

Day 3 – Wednesday, 24 June 2026

09:00-10:30: Discussion: FEISTY strengths & weaknesses compared with other frameworks: MIZER, EwE, Atlantis, ...
10:30-11:00: *Break - please note, coffee will be available throughout the day*
11:00-12:30: Theory: NUM teaser

12:30-13:30: Lunch

Classes by Andre Punt

13:30-15:00: A: Introduction to stock assessment, including size-structured models
15:00-15:30: *Break - please note, coffee will be available throughout the day*
15:30-17:30: B: Introduction to RTMB

Day 4 – Thursday, 25 June 2026

09:00-10:30: C: Size-structured models continued: fitting and quantifying uncertainty
10:30-11:00: *Break - please note, coffee will be available throughout the day*
11:00-12:30: Coding assignment 1: Fitting a state-space size-structured model

12:30-13:30: Lunch

13:30-15:00: D: Size-structured models and technical interactions
15:00-15:30: *Break - please note, coffee will be available throughout the day*
15:30-17:30: Coding assignment 2: Extending the state-space size-structured model

Day 5 – Friday, 26 June 2026

09:00-10:30: E: Projections, harvest control rules and comparing management options
10:30-11:00: *Break - please note, coffee will be available throughout the day*
11:00-12:30: Coding assignment 3: Reference points for species impacted by technical interactions

12:30-13:30: Lunch

13:30-14:30: Coding assignment 3: Reference points for species impacted by technical interactions
14:30-15:30: Coding assignment 4: Developing management plans for species impacted by technical
interactions
15:30-16:00: *Break - please note, coffee will be available throughout the day*
16:00-17:30: Coding assignment 4 continued

17:30-18:00: Certificates and Closure

18:00 **Transport to Birgu**
18:30-19:30 **Cultural Tour** – Fort St. Angelo

19:30-21:30 **Social Dinner**
21:30 **Transport to Valletta**

What to do in Malta?

1) Visit Malta Official Tourism Website https://www.visitmalta.com/en/home
Beaches, attractions and activities across Malta and Gozo.

Places of interest can be:

Most interesting attractions;

- **Mdina** – The Silent City (A historic walled city with narrow streets, medieval architecture and panoramic views)
- **Valletta** – The Capital City (A UNESCO World Heritage site packed with baroque architecture, the Grand Harbour, and historical sites like St. John's Co-Cathedral. Home - St John's Co-Cathedral)
- **The Hypogeum of Hal-Saflieni** (An underground prehistoric temple and burial site dating back to 4000 BC, remarkable for its ancient architecture.)
- **Blue Lagoon, Comino** (Famous for its crystal-clear waters and stunning scenery, perfect for swimming and snorkeling)
- **Ħagar Qim and Mnajdra Temples** (Ancient megalithic temples that date back to around 3600-3200 BC, among the oldest free-standing structures in the world.)

2)Malta Tourism Authority (MTA) https://mta.com.mt/
Beaches, natural attractions, cultural sites, and events.

3)Heritage Malta (Museums & Heritage Sites) https://heritagemalta.org/
Cultural and historical sites, but also includes information about coastal fortifications and scenic spots.

4)Sister island Gozo
Visit Gozo https://www.visitgozo.com/
Beaches, natural beauty, and cultural attractions on the sister island.

5) WhichBeach - Your local beach guide for Malta, Gozo & Comino!
List of popular beaches that are good to swim on the day.

6) Malta Experience
The Malta Experience offers a highly rated audio-visual tour and visit to La Sacra Infermeria, letting visitors explore the island's rich history in an engaging way.





The Venue for social dinner

On the 26th of June Xjenza Malta is organising a social dinner for all participants.
No specific dress code is required.

The event will be held in the Fort St Angelo
The complete address is: Fort St Angelo, Birgu, Malta

ITINERARY
18.30 Arrival of guests
Followed by the guided tour of the fort
19.30 Start of Taste History dinner at Egmont Hall





Google Maps



Enjoy your experience in Malta

About OGS-Blue Skills

The Italian National Institute of Oceanography and Applied Geophysics - OGS proposes a multidisciplinary training offer on sustainable blue economy to suit the long-term education and short-term upskilling experience, circular mobility and knowledge transfer. Specifically, the Blue Skills initiative promotes opportunities for marine and maritime careers through capacity building, skills development, knowledge exchange, and talent circulation across the Mediterranean. The activities include: an Advanced Master, a Summer School, opportunities for research mobility and a traineeship programme.

About XJENZA MALTA

Xjenza Malta is the Maltese government agency responsible for research, innovation, and space policy. It develops and implements national strategies in these areas and manages public funding, including the FUSION programme supporting R&I projects across different levels of technological maturity. It also serves as Malta's National Contact Point for Horizon Europe, supporting participation in EU research programmes and representing Malta in related governance structures. In addition, it promotes international collaboration through co-funded partnerships and bilateral or multilateral agreements.

OGS XJENZA MALTA AMARE MED TLQS The Laboratory on Quantitative Sustainability

DISCLAIMER

I, the undersigned [Name] _____,
[Last Name] _____[e-mail]
_____, with respect to the activities of the Summer School,

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- to expressly refuse any compensation;
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Location and Date: Signature:

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The Data Controller has appointed a Data Protection Officer, who can be reached at the following address: dpo@inogs.it.

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Finally, the Data Subject may: object to the processing of personal data under the conditions and within the limits set out in Article 21 of the GDPR; exercise the right to data portability (Article 20 GDPR). With regard to processing operations based on consent (pursuant to Articles 6(1)(a) and 9(2)(a)

of the GDPR), the Data Subject has the right to withdraw such consent at any time (without affecting the lawfulness of the processing based on the consent given prior to the withdrawal).

Finally, if they believe that the processing of their personal data violates the GDPR, the Data Subject has the right to lodge a complaint with a supervisory authority (Data Protection Authority or other competent authority) pursuant to Article 77 et seq. of the GDPR.

In connection with the above, I give my consent to the processing of my personal data and the transfer to third countries as indicated above.

Location and Date: Signature:

CERTIFICATE OF ATTENDANCE

has successfully completed and actively participated in the:

Advanced school on Multispecies modelling Approaches for ecosystem based marine REsource management in the MEDiterranean Sea

Malta - 22 June/26 June 2026

Organizers:

Simone Libralato
National Institute of Oceanography and Applied Geophysics – OGS, Italy

Silvio Scerri
Chief Executive Officer
Xjenza Malta

Teachers:

Prof. Andrè Punt
School of Aquatic and Fishery Sciences, University of Washington – USA

Prof. Ken Haste Andersen
Technical University of Denmark

AMARE MED

Advanced school on Multispecies modelling Approaches for ecosystem based marine REsource management in the MEDiterranean Sea

22 June - 26 June 2026, Malta

WHAT?

AMARE-MED 2026 will provide participants with theoretical insights and practical skills, covering essential topics on size-spectra models such as:

- Stock assessment methods based on size-structured models, accounting for technical interactions among species and evaluating risks of alternative harvesting strategies, with hands-on R applications (single- and multi-species state-space models).
- Introduction to FEISTY, a size-based fish community modelling framework to estimate biomass, production and carbon sequestration under the combined effects of zooplankton productivity, climate change and fishing, with practical R sessions in a Mediterranean context.

TEACHERS:



Prof. André Punt
(University of Washington, USA)



Prof. Ken Haste Andersen
(Technical University of Denmark)

WHO?

30 participants, selected via online application based on expertise, skills, and interest.

FEES:

No participation fee.



ORGANISING COMMITTEE:

Simone Libralato (OGS, Italy)
Azzopardi Maria (Xjenza Malta)
Agius Emily (Xjenza Malta)

SECRETARIAT:

Casalena Giulia (OGS, Italy) - Email: echo@ogs.it

Burton Sophie (OGS, Italy)
Borg Sandrine (Xjenza Malta)



SCIENTIFIC COMMITTEE:

Simone Libralato (OGS, Italy); Alexandra Silva & Carla Gomeiro (IPMA, Portugal); Enrico Arneri (CNR-IRBIM, Italy); Béchir Bejaoui (INSTM); Olfa Benabdallah (INSTM); Angelo Bonanno (CNR-IRMA, Italy); Roberto Carlucci (CONISMA, Italy); Piera Carpi (IMR, Norway); Francesco Colloca (SZN, Italy); Gianpaolo Coro (CNR-ISTI, Italy); Fabio Fiorentino (CNR-IRBIM, Italy); Germana Garofalo (CNR-IRBIM, Italy); Valentina Lauria (CNR-IRBIM, Italy); Saša Raicevich (ISPRA, Italy); Giuseppe Scarcella (CNR-IRBIM, Italy); Svjetlana Krstulović Šifner (University Split, Croatia); Cosimo Solidoro (OGS, Italy); Maria Teresa Spedicato (Coispa, Italy); Athanassios Tsikliras (University of Thessaloniki, AUTH); Nedo Vrgoč (IOF, Croatia)

APPLICATIONS DEADLINE:

31 MARCH 2026 23.59 CET

Application form

Link to the web page

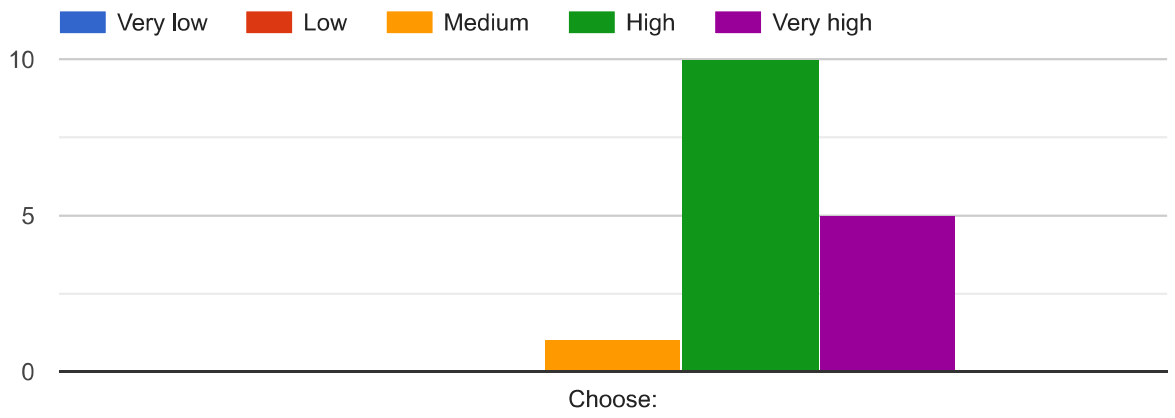
XJENZA MALTA · OGS Istituto Nazionale di Oceanografia e di Geofisica Sperimentale · TLAS The Laboratory on Quantitative Sustainability · Stazione Zoologica Anton Dohrn Napoli · CNR IRBIM Istituto per le Risorse Biologiche e le Biotecnologie Marine

AMARE-MED 2026 Assessment

16 risposte

1.Information: How well were you informed about the course and its objectives?

Copia grafico



*Please comment to explain the score above on **objectives***

16 risposte

/

The description of the summer school objectives were clear and informative.

The course information clearly explained the course objectives and provided sufficient time to review and familiarize myself with the topics.

The joining instructions clearly laid out the goals and agenda beforehand

The info pack was good but could have come a bit earlier

The AMARE-Med website + the reactivity of the organizers to answer our questions + the whats'app group ..

Objectives of the course were very clear

The course objectives and structure were explained very clearly before the training.

Course objectives were explained in a detailed way.

I read the description of AMARE MED and as I have attended it 2024, I was a bit aware of what to expect.

Unfortunately, we received the program just a few days ahead

I took place to previuos editions

Very well organized with good information flow.

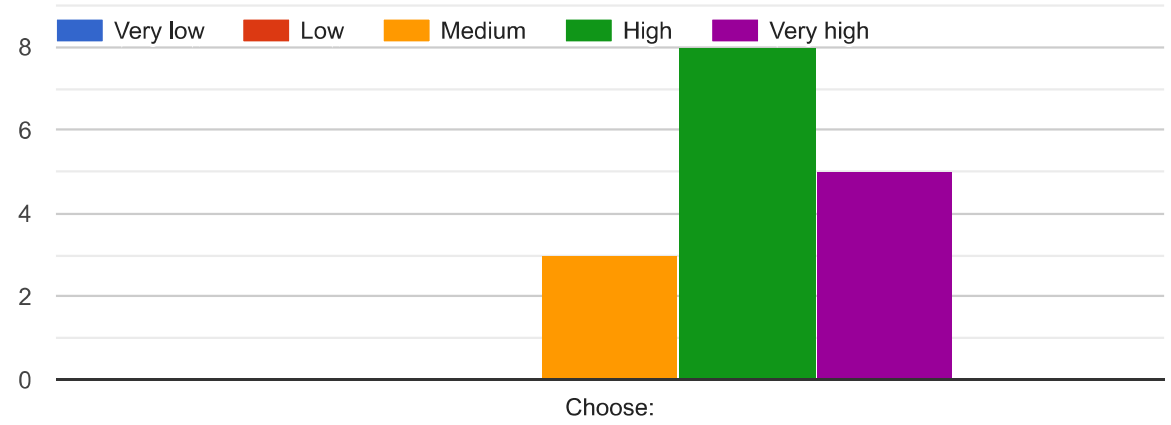
All was well introducend and organizer. Probably if studends receive all the lecture a bit earlier would assimilate better the info during the course expecially for people not expert of the topic.In this way they May have time for small research on the specific lecture topics.

We were well informed about what we were expecting

I was well explained in the web site

2. Expectations: To what extent did this training course meet your expectations?

Copia grafico



*Please comment to explain the score above on **expectations***

16 risposte

/

I learned the baseline of the subjected R packages which will help me further improve my understanding and expertise on them.

The content presented by both teachers was very interesting and highly relevant to current issues in the marine world.

it was very informative, sometime too intensive

It was very good

The training met my expectations in terms of methods and the balance between theory and practical exercises.

It is related to my R level and helth condition, so I have expected to obtain more knowledge on the models and applications particularly, but this part for me was'nt well obtained

The course fully met my expectations.

I am very satisfied with the course content and organization.

Andre's lecture was one of the most graspable statistics lectures I had in long time. FEISTY explanation was also very nice. A bit more discussion on mechanics of FEISTY would have been even better. The teachers were so patient and made the hard concept so easy for us that I didn't feel lost at all during the lectures.

The teachers were really high-level, and the organization of the course was amazing

I was expecting this level of teaching and these contents

Super interesting content and really nice setting.

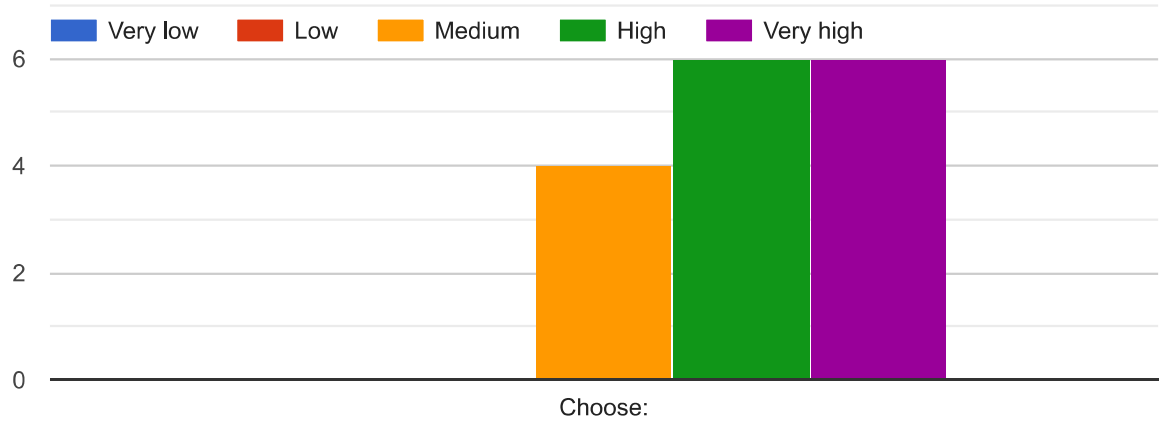
I did not have very high expectation but I'm happy about the course and how It was well managed by the organizers.

I didn't expect it would be this good and rich

I knew one of the professors, so i was expecting a great level of knowleege

3. Relevance/Work: How relevant was the content of this training to your work?

Copia grafico



*Please comment to explain the score above on **relevance***

16 risposte

/

Especially the stock assessment part was highly related with my current project.

The content was very relevant to my current role. Although some parts were a bit above my level, it really made me think and broadened my perspective.

it was very relevant

It is not directly related to my current role, but could be in the future

The training was very relevant to my work, which involves stock assessment and ecosystem modelling.

Very usefull particularly to improve my course given to may Master's degree students

Since I will be working with stock assessment tools in my future research, the course was highly relevant to my academic and professional goals.

Currently working with fisheries and gained bew insights about my research.

While my work on aquatic system is limited, the modelling idea on terrestrial system is parallel. As I did before as well, I am excited to apply the methodological concept of stock assessment and size based FEISTY modelling in the game management and forest trait based foodweb analyses.

I am sure that I am gonna use most of what I have learned in the near future

I will probably be able to do an assessment using Andrè's ints and I will try to use Ken's approach as complementary in food web models

Most relevant for potential future work.

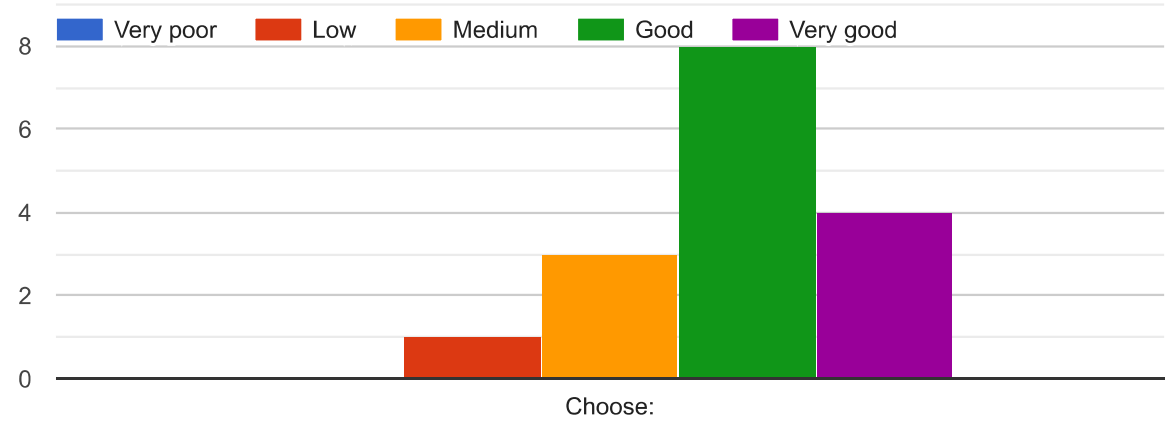
The topics faced during the course are very important and useful.

As a modeler this is very valuable and privileged to be able to extent my knowledge in fisheries with this training

I work in the stock assessment processo, so knowing about new methos would help me to develop new ideas and approaches

4. Efficiency: How would you rate the relationship between the number of topics taught in the course and the time allotted for each topic?

Copia grafico



*Please comment on the score above on **efficiency***

16 risposte

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I was aware that the topics are too wide to be covered in such short period of time. I think the lecturers did their best.

In general, I felt the balance was good. That said, I think a little more time could have been allocated for the assignments, particularly André's last assignment.

some topics should had more time

Some of the things at the beginning were covered very quickly, but otherwise good

For a one week summer school, the number of topics was appropriate. With more topics, it would have been difficult to go into detail or carry out practical exercises.

It was proportional

Some practical sessions could have benefited from a little more time, but overall the schedule was well organized.

Sufficient time was allocated to each topic.

Despite the great lectures, we as human are limited to process vast information in short amounts of time. Maybe a bit longer workshop, or biannual/hybrid workshops can help better digestion for students on vast topics.

Sometimes the time to carry out the assignments was a little bit too short (particularly in the second part of the course)

perfect

Generally good, though the RTMB stuff would benefit from more time. However, I do understand the idea of just dumping a lot of information and material that we can explore further at home.

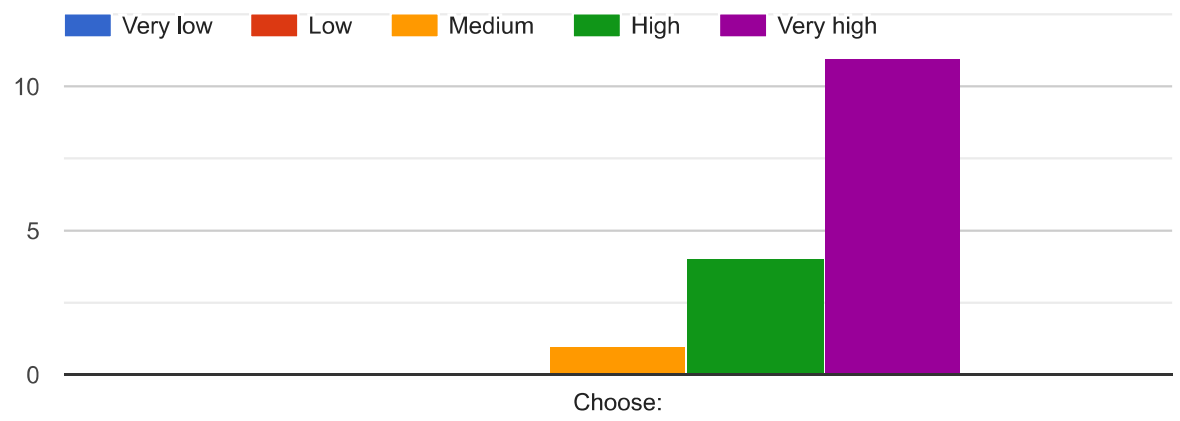
No much to say on this

We wished to have more time for practices as the material was so rich, one week for both professors was too little, five days for each professor would be the minimum

I think this is the week point of the course. I would preferred to dedicate time to understand the coding and the strutture of the models proposed, instead to prepare a rush presentation and a lame project

5. Interest: How interesting was this course?

Copia grafico



*Please comment on the score above on **interest***

16 risposte

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Some of the concepts in the course were new to me.

Personally, I found the topics extremely interesting, and I particularly enjoyed the presentations of real-life case studies and scenarios.

it was very informative and i gained more knowledge

Very interesting

I learned a lot during the course, it was also an opportunity to refresh several key concepts. The scientific discussions with the trainers and other participants after the sessions were also very interesting.

Event the subject of the course and the methodology used are interesting

The course was engaging throughout. The combination of lectures, discussions, and hands-on exercises kept the sessions interesting.

The content of the course was very interesting and novel.

It was highly interested because I learned concepts and new methods that I can apply in other disciplines. Would be even more interesting if the assignments would be shorter and more interactive. Digesting all the codes in short time, can shift students' focus and energy from understanding the concept to coding.

I am actually working on size-based indicators, and this class was extremely helpful in that sense.

I was very motivated to participate

I found both parts excellent.

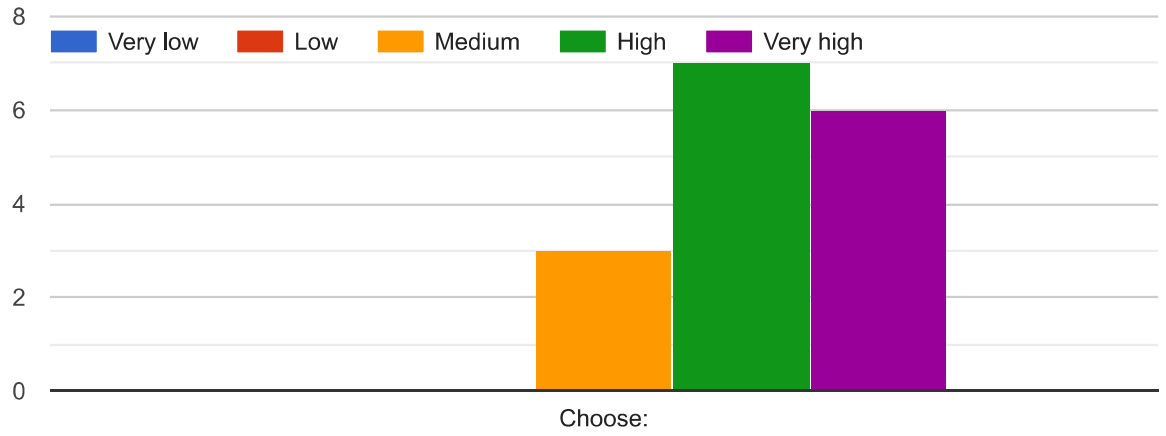
Dorme It was interesting

the course was very interesting as marine biologist and a modeler

Professors caught my interest very well through provide cool info and rise useful discussions

6. Concrete Need: To what extent did you consider the training was oriented to concrete needs and problems?

Copia grafico



*Please comment on the score above on **concrete need***

16 risposte

/

The exercises were built on real world scenarios and problems.

Multispecies modelling is a highly relevant topic today, and by training more scientists through courses such as AMARE-MED, I hope that it will become more widely used in future analyses of stocks.

The case studies matched situations I actually encounter in my work

Will be needed in my future career

It corresponds to my research questions related to the evaluation of human impacts at ecosystem level and the management of fisheries (stock level).

A concret situation of mediterranean fisheries are involved

I believe the knowledge gained will be useful in my future work.

Everything discussed during the course was related to real world problems.

For fishery scientists, the stock assessment and FEISTY modelling was real world problem oriented.

Assignments and exercises had been very useful, even if I would have also enjoyed working on real case studies.

no necessarily linked to need, but it opens new frontiers and complementary approaches

Maybe not directly match my concrete needs, but potentially in the future.

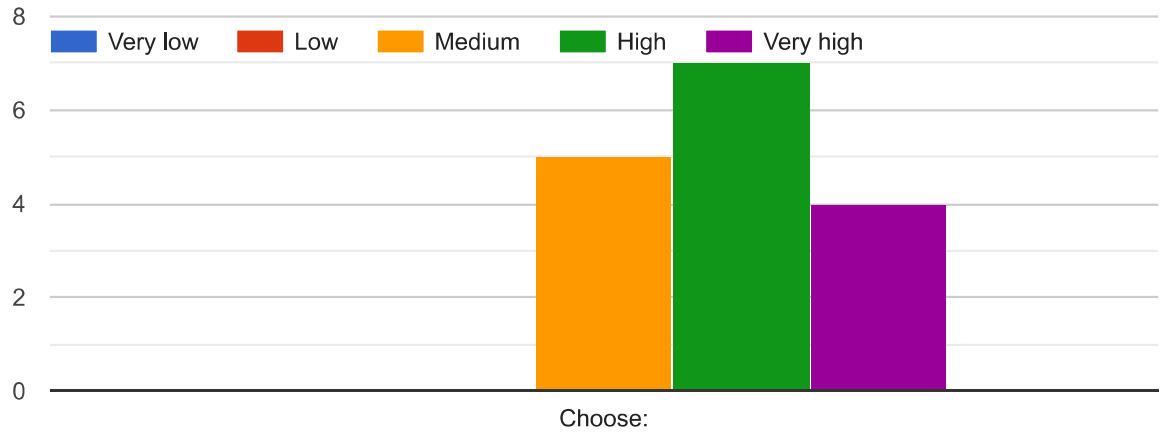
Good application on pratical cases

the training is perfect for building solutions for fisheries

Despite the topics touched rose discussion, the course itself was more focused on presenting models and potential applications.

7. Comprehension: To what extent do you think you understood the content of the course?

Copia grafico



*Please comment on the score above on **comprehension***

16 risposte

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I will of course take some time to understand all the content but as a starting point it was beneficial.

I think I understood most of the theoretical sessions. However, when it came to the coding exercises, I am not sure if I fully understood everything.

sometimes it was very extensive.

There were topics I struggled with more than others, but I was expecting that. Overall I understood and learnt well

I didn't have time to explore all the R scripts in detail. I have to spend more time to understand some technical aspects at home, but the main concepts were clear.

The use of mathemathical tools to estimate better stocks and mange them in a context of mutispecific andmultigears used

Some advanced concepts required additional attention, but the trainers were always willing to answer questions and provide clarification.

I understood it but would have to study it again on my own.

The only reason I did not process everything per day was because of the conflict between intensity of the training and time limitations. However, I am sure, with time and the resources provided, we will be able to understand most of it.

I will need some time to digest all the information, but I think I got the pig picture

However I will need more time to move from theory to code for the lst part of Andrè's lesson

I would say I understood it all, though I found it challenging.

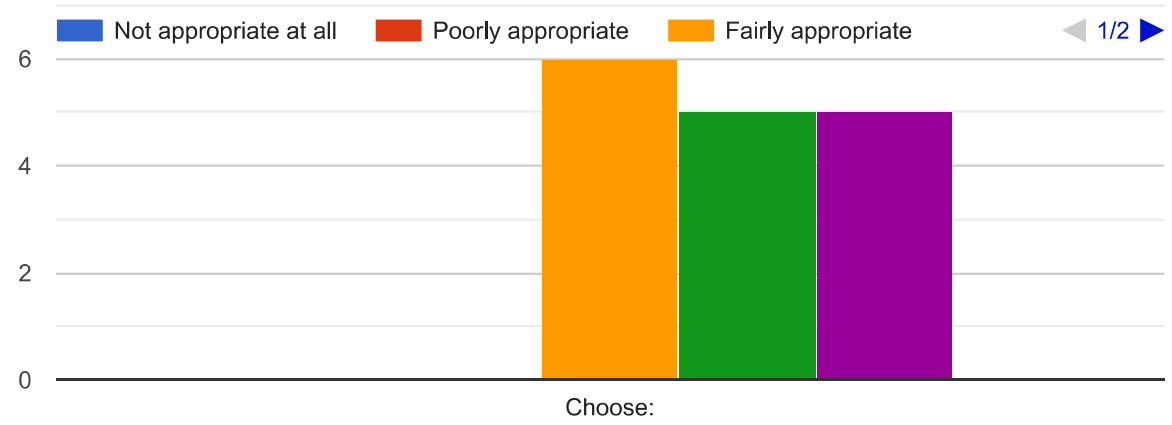
Balanced

other thank the time wasn't enough but we absorbed the maximum we could

The lectures were delivered in a clear and clean way

8. Difficulty Level: How appropriate do you consider the level of difficulty of this course?

Copia grafico



*Please comment on the score above on **difficulty level***

16 risposte

/

Did not have any difficulties.

Most of the tasks, especially Ken's, were doable even for someone without a super strong background in the field. With André's assignments, some were still manageable, but for a few of them I really benefited from being in a group with more experienced participants who were happy to help and share their knowledge.

fairly appropriate as i had some background, but sometimes i felt lost

I found it challenging, but in a good way

The difficulty level corresponds to my expectations and it's was appropriate for me. We need to be out of our confort zone to learn new concepts..

As an advanced course, I think it is appropriate, but, the efficiency depends on students and their states and background

The level of difficulty was appropriate for participants with a background in marine science. Fish stock assessment part needs a little bit more time to understand.

Some things were difficult to absorb immediately.

coming from a more terrestrial ecosystem background, I understood the concept. It was also advertised as "Advanced" course. Therefore, I would consider the difficulty level as a perfect balance between advanced knowledge and nice explanations.

The class is pretty technical, but I think it's what you should want for a high-level course

It is an advanced course

Fitted my level perfectly, I would say.

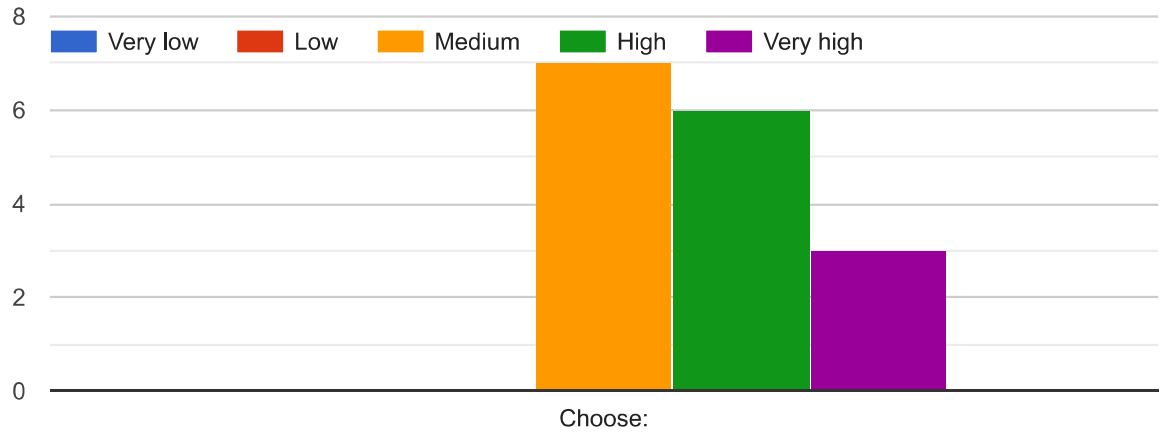
Well done

it's not about difficulty it's about the time allocated to absorb everything

Sometimes professors asked to complete complex tasks in few time.

9. Pace: How appropriate do you consider the pace of this training course?

Copia grafico



*Please comment on the score above on **pace***

16 risposte

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It was dense but it was expected.

The pace was appropriate.

Some sessions felt rushed and there wasn't enough time to ask questions before moving on.

It was quick but manageable

Sometimes the pace was too fast for some exercises to fully understand what the R scripts were doing.

opened windows to a reflextion on a better soustainable management

Some sessions covered many concepts in a short time, but it remained manageable.

The pace was very appropriate.

I consider the course was fast paced as we explored a lot of topics within only one week

The class is a bit fast-paced, but I think it is needed, given the short time and the amount of information. However, I would have enjoyed a little bit more time for some assignments.

appropriate

Some part were intensive, and we could have distributed the breaks better, especially in Andre's part.

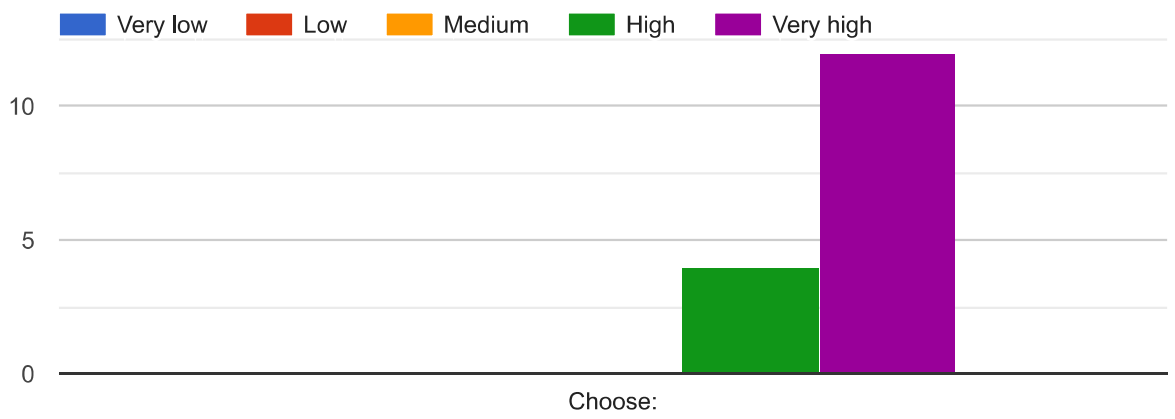
Nice Place, not very Easy the logistics

the amount of information was a bit too much compered with the time allocated to it

Maybe slow down a little bit would be great. I have the feeling that sometimes professors cit content or coding lectures to rush to the final assignment

10. Trainers' preparation: How do you rate the preparation of the trainers?

Copia grafico



*Please comment on the score above on **trainer preparation***

16 risposte

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The trainers were well prepared.

Both teachers were excellent and clear experts in their fields.

The trainers were clearly knowledgeable and had well-organized sessions with relevant examples

They were both excellent

We got highly quality presentations from the trainers, it was perfect.

Trainers welle prepared

The trainers were very well prepared, knowledgeable, and approachable.

Andre and Ken were very good.

They worked really hard to make each one of us understand.

I think both teachers were first-class

top level scientists

Both seemed very well prepared.

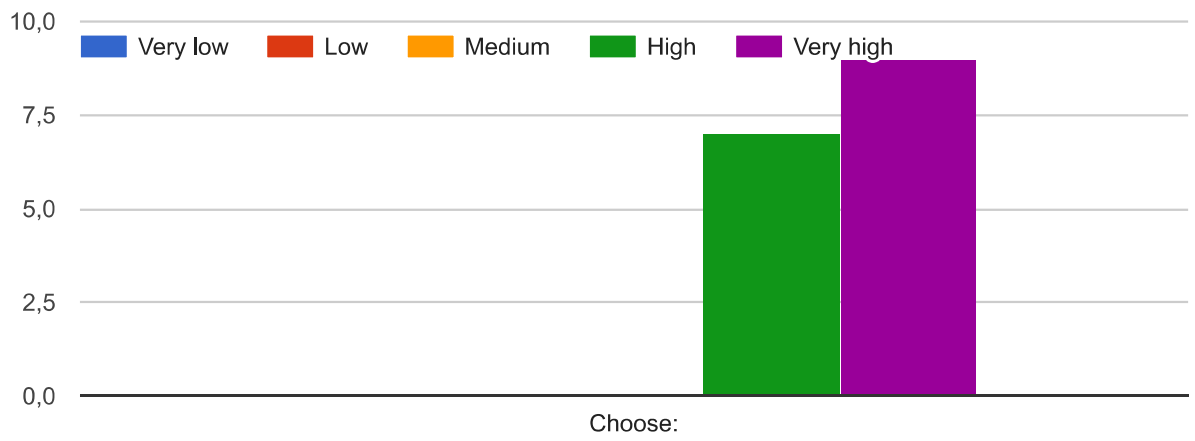
Amazing

i believe they prepared very well for the course

Professors were great esperta in their field and deliver they knowledge very well

11. Learning material: Were the learning aids and materials of a good standard?

Copia grafico



Any comment to explain the above score on ***Learning material***

16 risposte

/

The presentations and provided codes were very self explanatory.

NA

The slides were clear, well-organized, and useful to refer back to

Yes, they provided code and engaging presentations

Yes! The quality of the learning material was very high.

cohrence between objectives and material given

The learning materials were well prepared and useful. They will also serve as valuable references after the course.

Highly relevant

Those were enough. However, maybe next time, related papers can be also shared in advance. For example, if I would read FEISTY paper, the explanations would have been easier for me to grab.

Everything was clear and easily available

I have everything I need to study also once at home

I haven't explored it further since I came home, but my impression was really good.

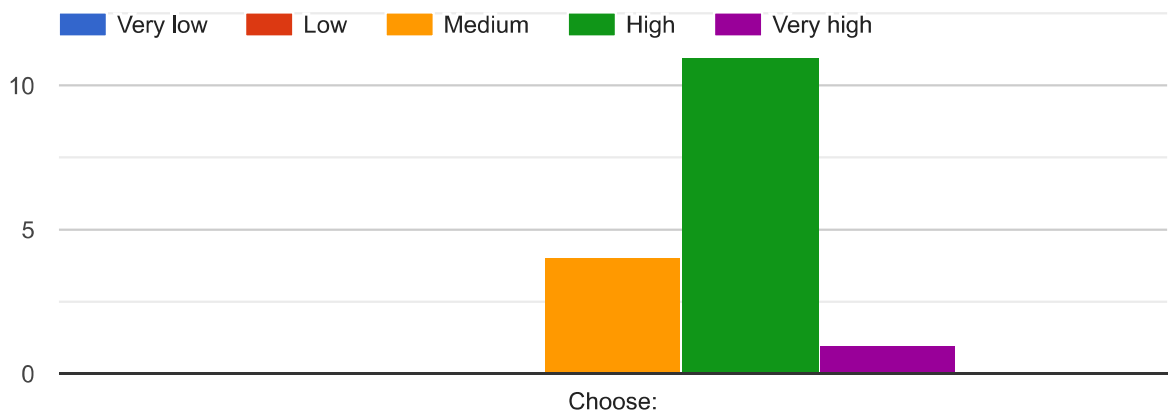
Appropriate

yes , It would be better to have them in advance

Learning materiale was easily accessible and promptly updated

12. Use: To what extent will you be able to use what you have learned in this course?

Copia grafico



*Please comment on the score above on **use***

16 risposte

/

Of course I need more practice but I am pretty sure I will use these methods at some point.

Currently, I feel that the content we learned is a bit more advanced than what I work on in my current role. However, I hope that in the future I'll have the opportunity to apply it. Even the more theoretical topics will likely prove useful over time, and it's always valuable to broaden your knowledge and develop new skills, even if they're not directly related to your current work.

The content is useful and I'd like to apply it, but competing priorities at work make it hard to find the time

My general R improved and I will use the rest in the futured

I hope to test some methods (based on feisty) to evaluate the impact of OWF and compare the model with other ecosystem models..

Improvment of my course, may be trying with a tudent to use multispecific models

I expect to apply many of the concepts and methods introduced during the course in my future research, particularly in stock assessment and fisheries modelling.

I will try my best but would have to study them again before applying.

I will for sure use stock assessment concept in game harvest data with a lot of modifications as needed. I will use the mechanical concept of FEISTY in my size based insect and bird models.

As I said, I will need some time to digest everything, but this is a great starting point

I will try to implement SA theme

Time will tell, but I imagine I will use some of the concepts at some point.

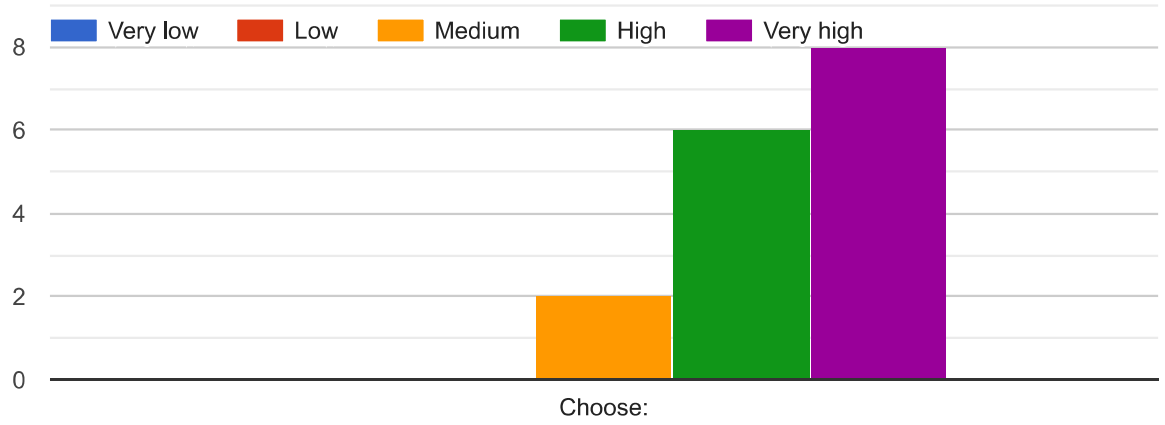
I Will try but not Easy to applay in my work case studies.

I think I would use them in my projects and scientific papers

I'm still not sure whether or not i would use the contents of this course, but never say never

13. Logistics: How do you evaluate the logistics and general organization of the course?

Copia grafico



*Please comment on the score above on **logistics***

16 risposte

/

I had no issues with the logistics and organization.

The organisation was exceptional. The lunches and social events were excellent, and there was a great balance between work sessions and breaks.

The venue was comfortable and the schedule was well-communicated in advance

From OGS side was very good, from Xjenza the photos etc are a bit over the top

The organization was very good! We were well informed all the time.

Thanks

The organization was excellent.

Logistics and the overall organization were very good

Organisers were the best part of this course. It was one of the best organisational skill I have ever came across.

Organization was great. My only little complaint is that it would have been better to receive the program and info a little bit earlier to better organize our stay. But it is a very tiny complaint.

busses not exceptionals

Very well and professionally organized.

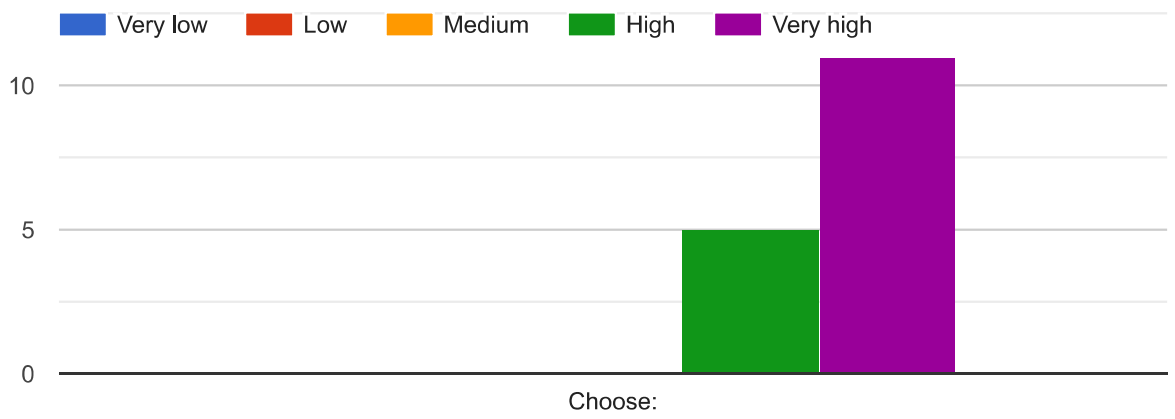
Bus trasportation

I was convenient

Organizers were great to deliver information and deal with issues

14. Overall evaluation: What is your overall evaluation for this course?

Copia grafico



*Please comment on the score above on **overall evaluation***

16 risposte

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The course satisfied my expectations in general.

I would highly recommend AMARE-MED to anyone. It provides an excellent opportunity to learn from exceptional teachers while networking with like-minded people. Opportunities like this are quite rare in the Mediterranean, especially when they are fully funded.

Overall a well-run course with practical content and knowledgeable trainers

It was very good

I was very satisfied with this training.

No comment

Overall, this was an excellent course that provided valuable scientific knowledge, practical experience, and networking opportunities. I would definitely recommend it to other early-career researchers.

The course was excellent.

I already suggested this course to my friends and colleagues working on marine system. It is one of the most fruitful courses I have ever attended.

Everything was great, and I really enjoyed these days!

probably one of the best editions

I enjoyed it al lot!

Good course

It was a great opportunity to learn and socialize.

I learnt so much and everything has gone very smootly

Suggestion 1: Do you think it is better to have one single method or more methods in one course?

16 risposte

More

Single method is better.

I think 2 methods was good, so at least if you don't fully understand one method there's still a good chance that you will understand the other method.

Multiple methods — a mix of lectures, hands-on coding, and case studies worked better than just one approach

I think how we had it this time was perfect

Having two methods with some inspirational presentations is a good balance.

Different methods

I think combining more than one method in a course is beneficial.

I would opt for 1 method as it gives more time to inderstand and practice.

Yes. One method is easy to digest.

I think two is fine but if I have to pick something, I would decrease more than increase the number of tools examined

nice question. I would not change the format

Two is absolute max, but I like that there was a change throughout.

One single method in one course

I think depends of how much time

I think explore two methods is feaseble, but maybe it would be useful to see how a methods may be integrated into the other

Suggestion 2: What would you change? What would you keep?

16 risposte

/

Nothing.

The only suggestion I would make is to avoid scheduling the social event on Friday evening, as this would give more people the opportunity to attend. Other than that, I was very happy with everything else.

I'd suggest providing more background knowledge upfront, and spending more time on actually building and understanding the code being written, rather than just seeing the final result.

I would keep the friendly and relaxed atmosphere, and maybe avoid presenting on the first day to let people settle a bit

Add more progression in the difficulty level of some exercises. Otherwise, keep everything!

no

I would keep the interactive atmosphere, practical exercises, and the opportunity to discuss with both trainers and participants. If possible, I would allocate slightly more time for the hands-on sessions.

I would keep the ratio between lections and practical work. Group work was also quite beneficial.

The timing may change. 10 am to 6pm is good enough for human brain. Exceeding that might not necessarily make us better students. Everyday I noticed many of us became zombies to process informations in the early morning. Maybe shorter coffee breaks, can help.

I would like to see more real case-studies, perhaps with students bringing their own data (if possible) and working on actual problems.

no idea

Can't think of anything to change.

I would have one method only structured as It was during the course with the second part focus ed on personal study cases/problema and data provided by the students.

I would not change anything m except for time

I would change the necessity to present a project at the end of each module. I would use that time to explore real-life applications or advanced features.

Suggestion 3: Approaches to be explored next time? Proposals for a next edition?

16 risposte

/

Stock assessment with acoustic survey data would be great.

NA

Consider covering fewer topics overall so there's enough time to fully understand each one, with more time allocated for working through assignments and case studies in depth.

Unsure, but looking forward to it if I get accepted again :)

Time series analysis, Random Utility Models, FishSET, OSMOSE, sensitivity analysis methods

no

How to extract data from copernicus etc may be useful for the next time.

N

My personal proposal is to let students explain the concept they learned as one of the assessment. Clearing concept might help us better understand the application

No particular suggestions. I am pretty inexperienced with stock assessment tools, so I would benefit from any choice.

AI, copilots and prompts for food web modelling

Maybe more end-to-end stock assessment work

Stock assessment with One data set and application of more than one stock assessment model. Sensitivity, frade off analisis and MSE.

I would say the same approaches

Approaches to introduce emvironmentals into stock assessment models

Comments: Please add any other comments you would like to make

7 risposte

sometimes it is too warm in the meeting room

Thanks for your time and effort organizing this summer school.

Many thanks for organizing this inspiring summer school! It was a great experience at all levels!

Thanks

Thank you to all the organizers and trainers for such a well-organized and inspiring course. It was a great learning experience, and I especially appreciated the friendly atmosphere and the opportunity to meet researchers from different countries.

Thank you very much again for organizing this great summer school

Grazie mille Simone, Marco, Giulia e Sohipie for all you did. Well done.

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