Interreg Alpine Space

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DiMark

Local co-creation workshop report
D 3.1.1

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Project	DiMark

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Introduction

The overall objective of the DiMark project is to improve Alpine lake management by applying innovative, ecosystem-based approaches for climate change adaptation and disaster risk prevention. The project aims to:

1. develop and test new solutions (a visualisation tool and a prediction model) to analyse specific climate change impacts on freshwater ecosystems in the Alpine region, and
2. Co-develop a strategy within the DiMark transnational network to support knowledge exchange and facilitate the integration of new solutions into the practices of water managers (policy makers and SMEs).

The first national co-creation workshop was organised to collect bottom-up inputs for the development of the risk-prevention tool and model. The workshop enabled the co-creation of:

- an online visualisation tool (visual design, functionalities, forecasts), and
- a risk-prevention model,

Taking into account stakeholder interests and the selection of model operations at the national level.

Preparation process for the first DiMark workshop

On **10 March 2025**, project partners held an online preparatory meeting to coordinate the organisation of the first DiMark stakeholder workshop. The meeting focused on:

- assigning responsibilities for organising the workshop at the national level,
- coordinating partner presentations, including:
    - An introduction to the DiMark project,
    - EO methodology for the visualisation tool,
    - integration of EO data with in-situ data (Lake Garda case study),
    - hands-on Alplakes demonstration,
    - modelling approaches,
- discussing the stakeholder questionnaire, with emphasis on the relevance of questions and the type of feedback needed from potential users,
- identifying effective approaches for engaging and attracting stakeholders to the workshop.

To further refine the preparation, partners held an additional coordination meeting on **5 May 2025**. During this meeting, the partners:

- agreed on the structure of the workshop,
- confirmed that the first part of the workshop would be held online (approximately two hours), with:
    - The Lead Partner presenting the project,
    - partners PP7 and PP11 presenting the visualisation tool,
    - partner PP9 presenting the risk-prevention model,
- agreed that the second part of the workshop would be organised as a national, face-to-face event, held in the national language and at the partner's premises or another suitable location,

- Finalised the questionnaire and drafted the detailed workshop agenda.

On **16 May 2025**, the Lead Partner distributed the final agenda and meeting invitation via Outlook to all observers identified by the partners (Appendix 1).

Co-creation participative workshops

The first DiMark stakeholder workshop was organised in two phases.
The **initial, theoretical session** was held online on **23 May 2025** and focused on introducing the project background and core concepts. It was followed by **national workshops conducted in national languages**, during which stakeholders were introduced to the questionnaire and invited to complete it either during the workshop or afterwards.

The online session of the **1st DiMark stakeholder workshop (23 May 2025)** included the following elements:

- An introduction to the DiMark project and its objectives
- Presentations on the use of Earth Observation (EO) and satellite data for lake monitoring
- A case study on the integration of EO and in situ data (Lake Garda)
- A demonstration of the Alplakes platform, providing predictions of lake conditions across the European Alpine region
- An overview of the development of the cyanobacteria risk-prevention model for forecasting harmful algal blooms
- Final remarks and open discussion

The full agenda of the online session is attached as Appendix 2.

Reports on the national workshops conducted are provided in Appendices **4 to 8**.

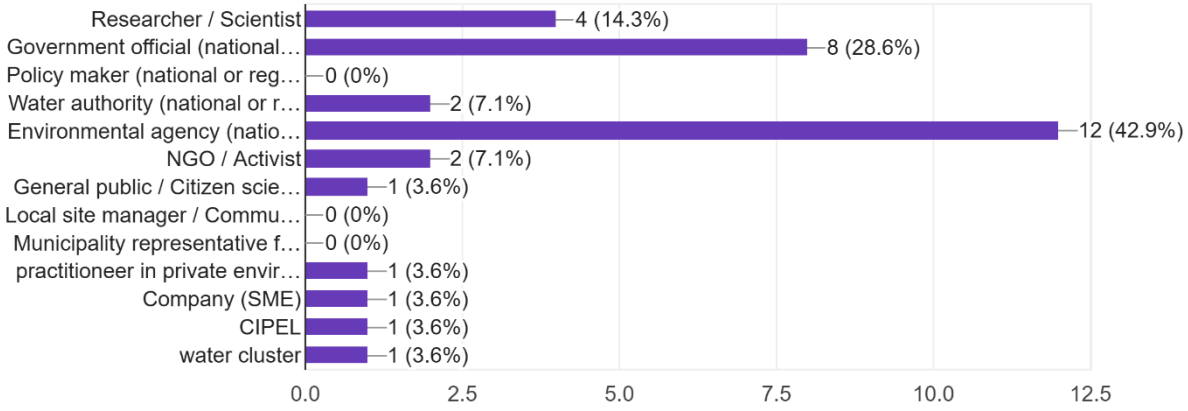
Questionnaire analysis

The **questionnaire analysis is based on** 29 respondents.

Section User Background

1. What is your primary role? (Select all that apply)

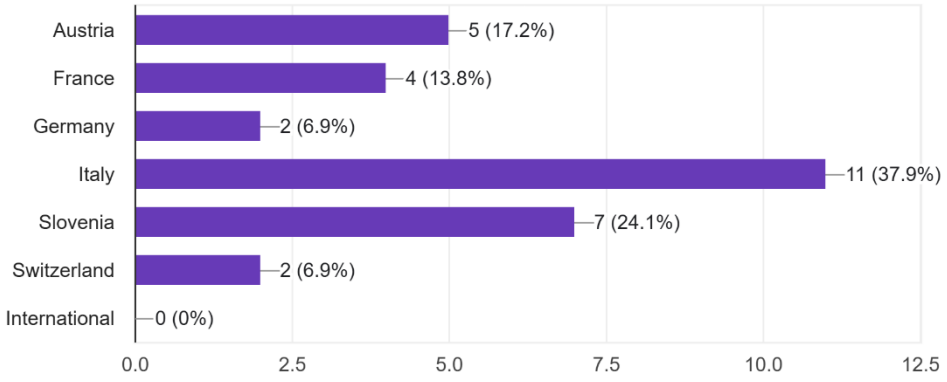
28 responses



Interpretation:
The majority of stakeholders are professionals, primarily environmental agencies, government officials and researchers, which indicates the tool is being shaped with expert users in mind.

2. What country is your organisation/institution from?

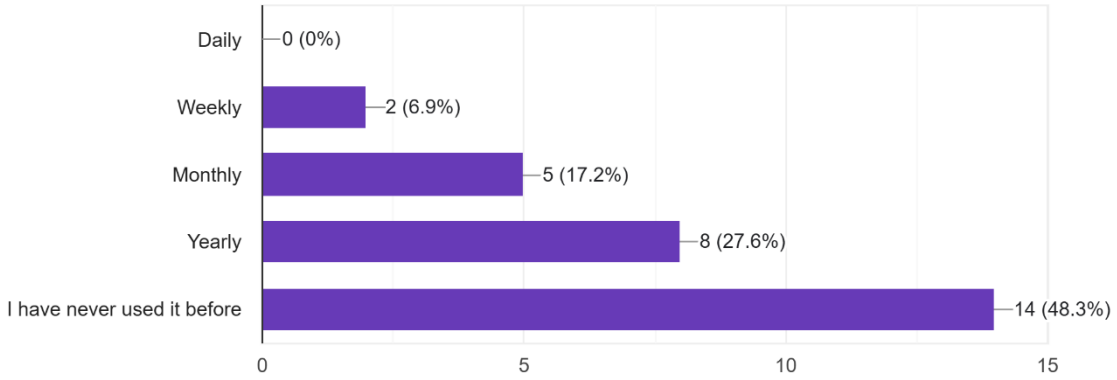
29 responses



Interpretation:
Italy and Slovenia dominate responses, followed by Austria.

3. Have you used Alplakes before and how often?

29 responses

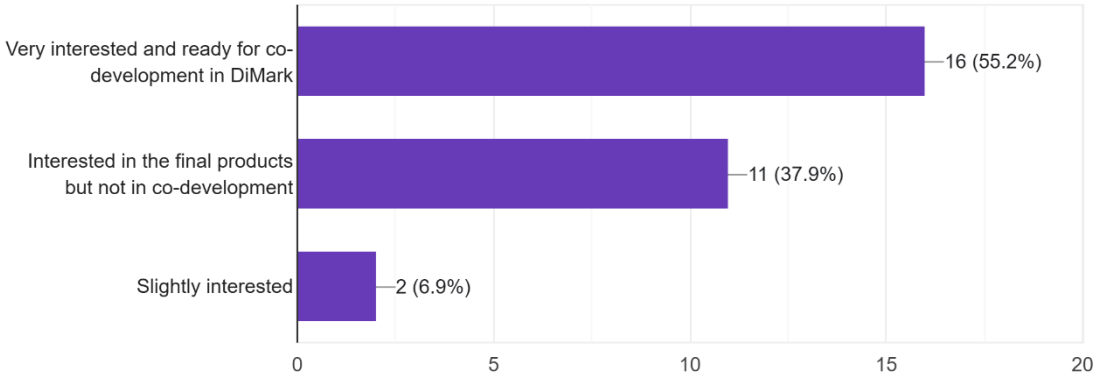


Interpretation:

Almost half of the respondents have never used Alplakes, underscoring the need for onboarding, training, and awareness campaigns. Among users, most access is yearly, suggesting the platform is not yet embedded in routine workflows.

4. How would you rate your interest in developing or using a visualisation tool or model? (Select all that apply)

29 responses

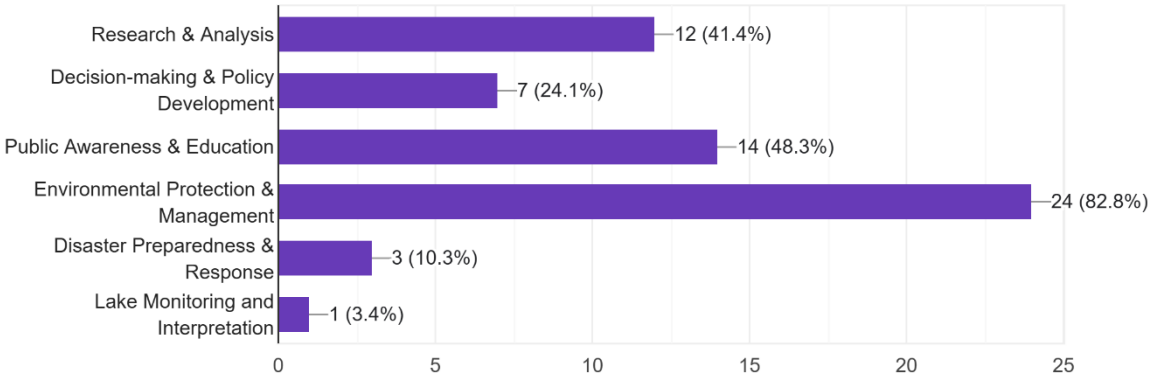


Interpretation:

There is strong enthusiasm for co-development, with more than half willing to engage actively. A significant minority prefer to wait for final tools, suggesting that communicating incremental progress is key to keeping them engaged.

5. What is/would be your main purpose for using the visualisation tool? (Select all that apply)

29 responses

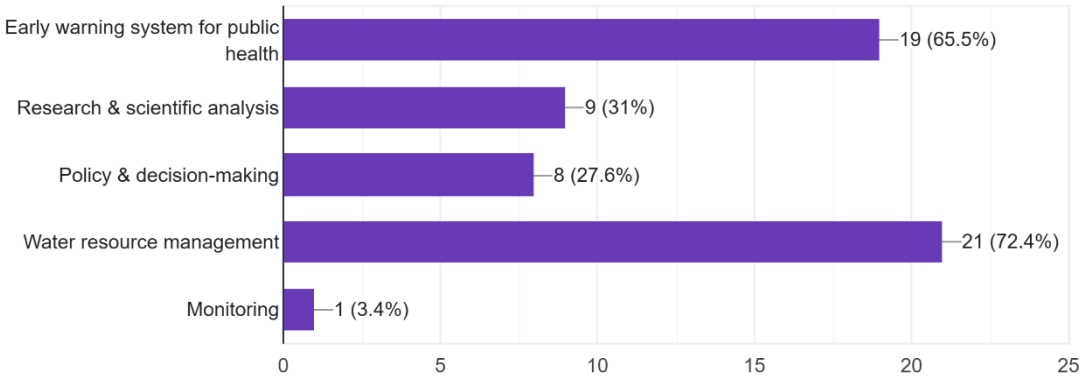


Interpretation:

The tool is expected to serve multiple functions, but environmental protection & management is the top priority (over 80%). Public awareness and research also rank highly, meaning outputs should be versatile — both scientifically rigorous and accessible to wider audiences.

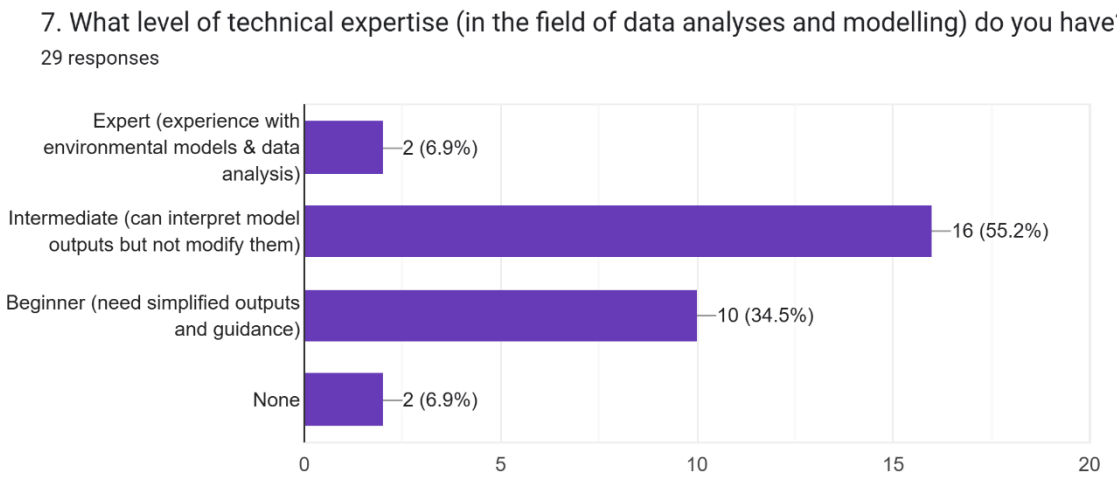
6. How do you plan to use the cyanobacteria risk model (lake specific or general model)? (Select all that apply)

29 responses



Interpretation:

The risk model will be used primarily for water resource management **and health-related early warning**. Also, researchers and decision-makers see value.



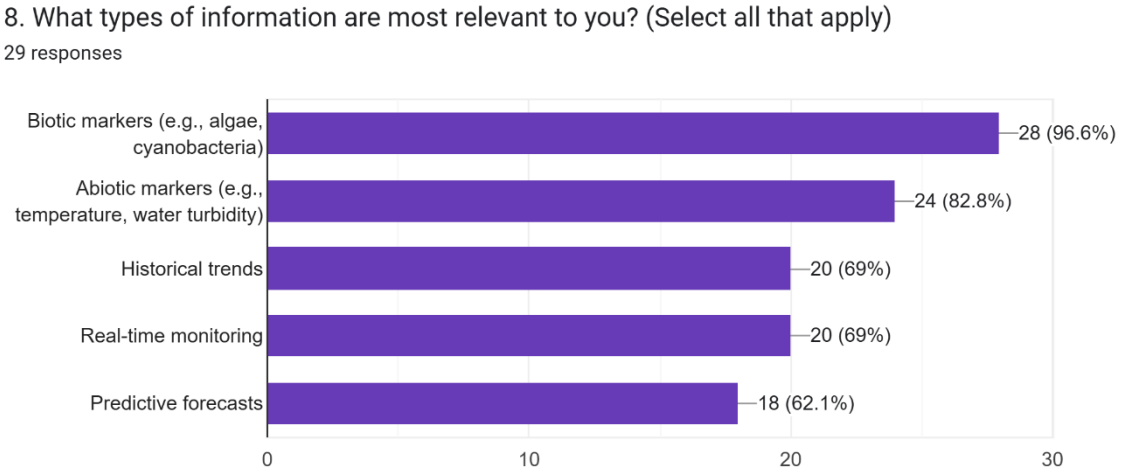
Interpretation:
There is a mixed level of expertise among stakeholders. Tools should therefore offer both **advanced features** (for experts) and **simplified visualisations** (for beginners), possibly with tiered user modes.

Overall Insights (User Background)

- **User profile:** Respondents are predominantly professionals (environmental agencies, government bodies, researchers), indicating that both the visualisation tool and the risk-prevention model should primarily address expert needs while remaining usable for non-specialists.
- **Geographical focus:** Most responses come from Italy and Slovenia, followed by Austria. It suggests that other partners should improve communication and stakeholder engagement.
- **Current use of existing platforms:** Nearly half of the respondents have never used Alplakes, and existing users typically access it only once a year. It highlights the need for clear onboarding, training materials, and awareness-raising to integrate the new tools into routine workflows.
- **Co-development readiness:** There is a strong interest in active co-development, with over half of stakeholders willing to engage. At the same time, a notable group prefers to wait for mature solutions, underlining the importance of transparent communication about interim results and incremental improvements.
- **Expected functions of the visualisation tool:** Environmental protection and lake management are the highest priorities, followed by public awareness and research. The tool should therefore combine scientific robustness with clear, intuitive outputs suitable for broader audiences.
- **Use of the cyano risk-prevention model:** The model is mainly expected to support water resource management and health-related early warning, with additional value for researchers and decision-makers.

- **Diverse expertise levels:** Stakeholders show mixed levels of technical knowledge. It calls for a flexible design, offering advanced analytical features for experts alongside simplified, user-friendly visualisations or tiered user modes for less experienced users.

Section Data & Visualisation Needs

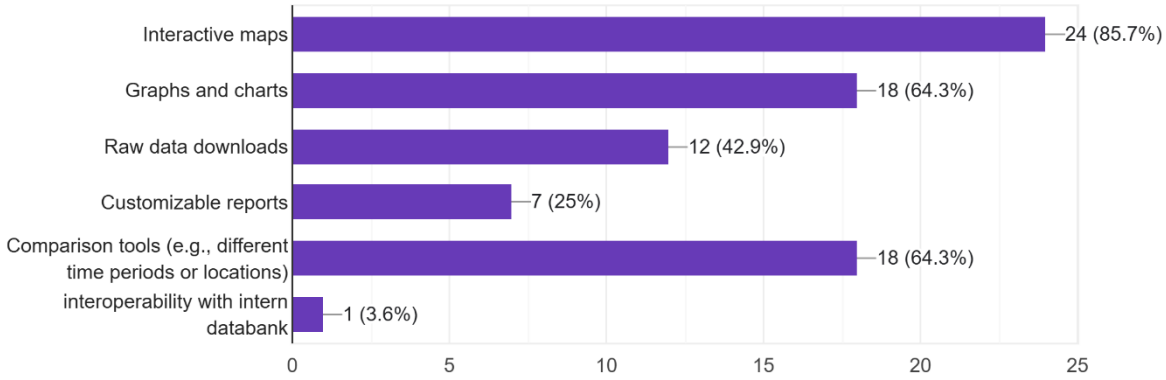


Interpretation:

The results show a very strong demand for **biotic markers** (96.6%), such as algae and cyanobacteria, indicating that users are highly focused on ecological status and bloom-related risks.
Abiotic markers (82.8%), including temperature and turbidity, are also considered highly relevant, reflecting the importance of physical and chemical drivers in lake management.
A significant proportion of respondents value **historical trends (69%) and real-time monitoring (69%)**, highlighting the need for both long-term context and up-to-date operational information.
Although slightly lower, **predictive forecasts (62.1%)** remain important to a majority of users, suggesting continued interest in forward-looking tools, particularly for risk prevention and planning.
Overall, the results indicate that users expect a **comprehensive system combining ecological indicators, environmental drivers, historical context, real-time data, and forecasting capabilities** to support informed decision-making.

9. How would you like to interact with the data? (Select all that apply)

28 responses



Interpretation:

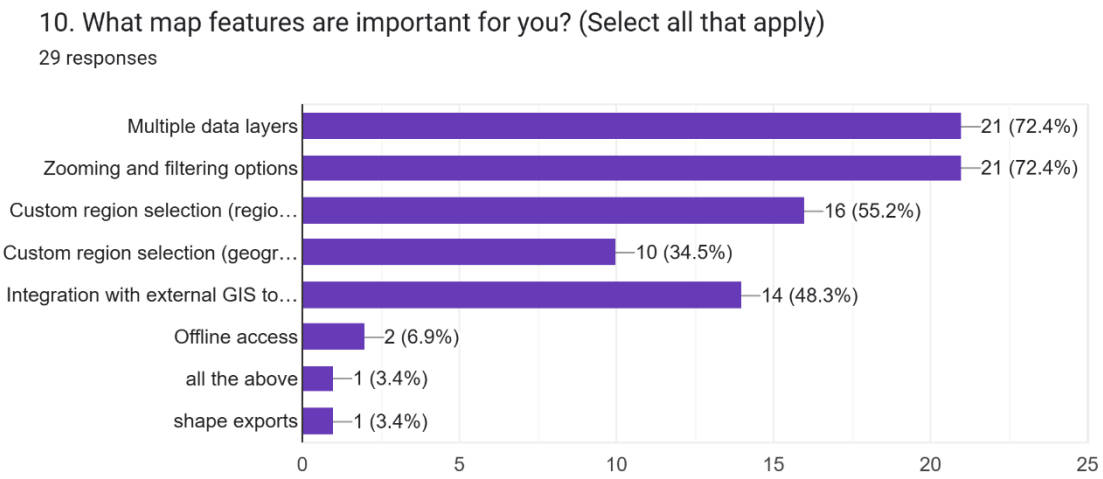
The results clearly show a strong preference for **interactive maps (85.7%)**, indicating that spatial visualisation is the primary way users want to engage with lake data. This confirms the importance of intuitive, map-based interfaces as a core feature of the tool.

A substantial proportion of respondents also value **graphs and charts (64.3%)** and **comparison tools (64.3%)**, suggesting that users need analytical functionality to explore trends over time and compare different locations or periods.

While **raw data downloads (42.9%)** are important for a significant group of users, they are less central than visual exploration tools. This implies that most users prioritise interpretation and visual insight over purely technical data access.

Only a smaller share selected **customisable reports (25%)**, and very few indicated a need for **direct interoperability with internal databases (3.6%)**, suggesting that while integration is relevant, it may not be a primary concern for the majority at this stage.

Overall, the findings highlight that users primarily expect an **interactive, visually driven, and comparison-oriented platform**, with data download functionality as supportive but secondary.



Interpretation:

The most important features for users are **multiple data layers (72.4%)** and **zooming and filtering options (72.4%)**, indicating that flexibility and detailed spatial exploration are key expectations. Users want to overlay different datasets and refine the view to focus on specific parameters or areas.

More than half of respondents (55.2%) value **custom region selection**, underscoring the importance of defining specific areas of interest (e.g., lake sections, bays, monitoring zones). A smaller but still relevant proportion (34.5%) highlighted geographic custom selection options, reinforcing the need for spatial flexibility.

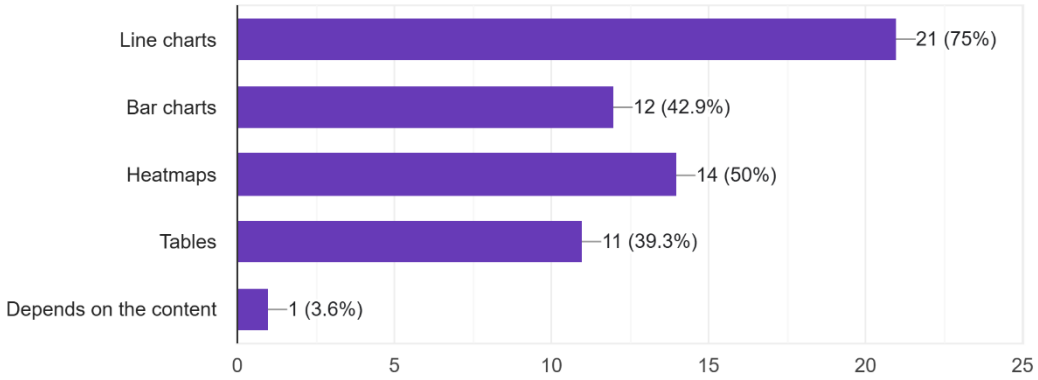
Nearly half (48.3%) indicated that **integration with external GIS tools** is important, suggesting that interoperability with professional analysis environments remains a significant requirement.

In contrast, **offline access (6.9%)**, shape exports (3.4%), and “all of the above” (3.4%) were selected by very few respondents, suggesting that advanced or technical export features are less of a priority than core interactive functionality.

Overall, the results emphasise that users expect a dynamic, layer-based, and customisable mapping interface with sufficient integration capabilities for professional GIS workflows.

11. What format do you prefer for visualizing trends over time? (Select all that apply)

28 responses



Interpretation:

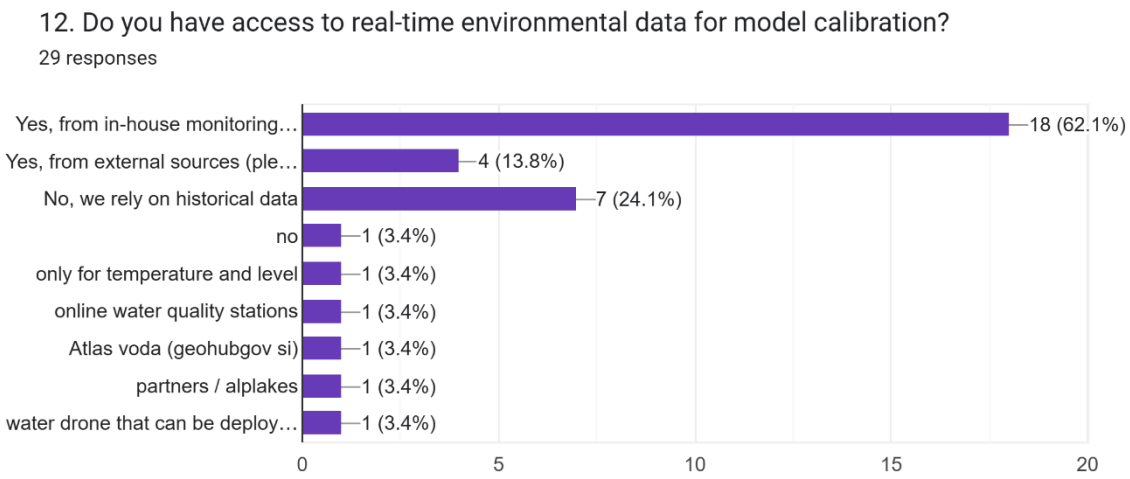
A strong majority of respondents (75%) prefer **line charts** for visualising trends over time, confirming that continuous temporal representation is the most intuitive and useful format for monitoring lake dynamics.

Half of the respondents (50%) selected **heatmaps**, indicating interest in visual formats that highlight intensity, patterns, and temporal-spatial variability, especially for detecting seasonal effects or bloom events.

A moderate proportion also values bar charts (42.9%) and tables (39.3%), suggesting that while graphical representation is preferred, some users still require structured or categorical formats for reporting and comparison.

Very few respondents (3.6%) indicated that the format depends on the content, suggesting that user preferences are relatively clear and consistent.

Overall, the results suggest that the tool should prioritise **line charts as the default time-series visualisation**, while also offering complementary formats (heatmaps, bar charts, tables) to support different analytical and reporting needs.



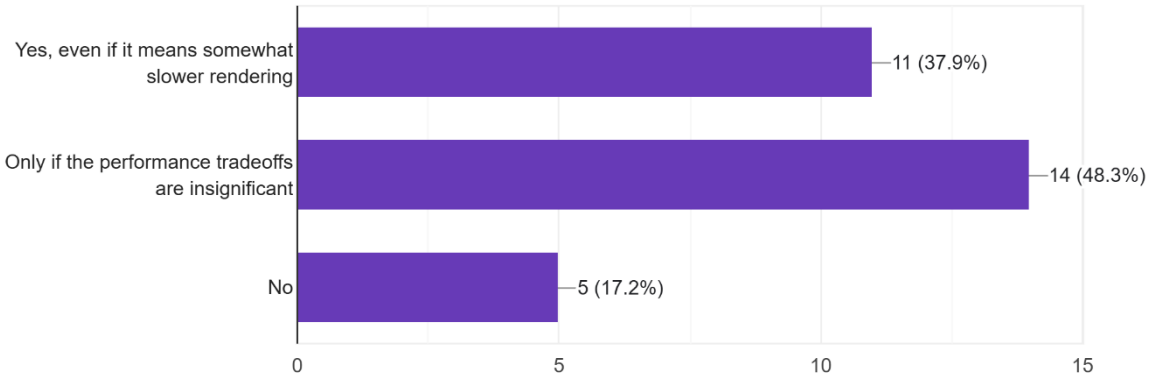
Interpretation:

A majority of respondents (62.1%) reported access to real-time data from in-house monitoring systems, indicating strong internal monitoring capabilities across many institutions.
A smaller share (13.8%) access real-time data from **external sources**, while 24.1% rely primarily on **historical data**, suggesting that not all users have operational real-time monitoring capabilities.
Several individual responses mention specific sources, such as online water quality stations, national data portals, Alplakes, and deployable water drones, highlighting a diversity of data-acquisition methods.
Overall, the results show that while real-time data availability is relatively strong among respondents, a significant group still relies on historical datasets. It implies that the model and tool should be flexible enough to support both **real-time operational use** and **retrospective calibration based on historical data**.

Section Comparing Lakes

13. Would you prefer a map view that displays multiple adjacent lakes, e.g. within an administrative unit?

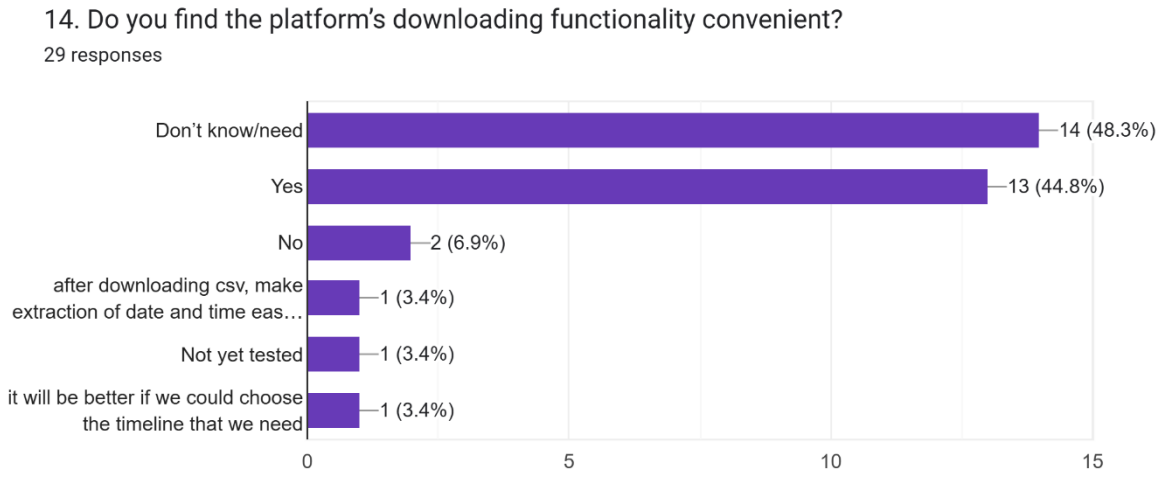
29 responses



Interpretation:

The majority of respondents (48.3%) would prefer a multi-lake map view **only if performance trade-offs are minimal**, indicating that usability and responsiveness are critical factors.
A substantial share (37.9%) would accept somewhat slower rendering in exchange for the ability to view multiple adjacent lakes, demonstrating clear interest in broader spatial overviews.
Only 17.2% indicated no preference for such functionality.
Overall, the results suggest that users value the ability to visualise multiple lakes simultaneously—particularly for regional comparison or administrative planning—but system performance must remain efficient. Therefore, optimisation and scalable rendering solutions will be important to ensure user satisfaction.

Section Download Functionality

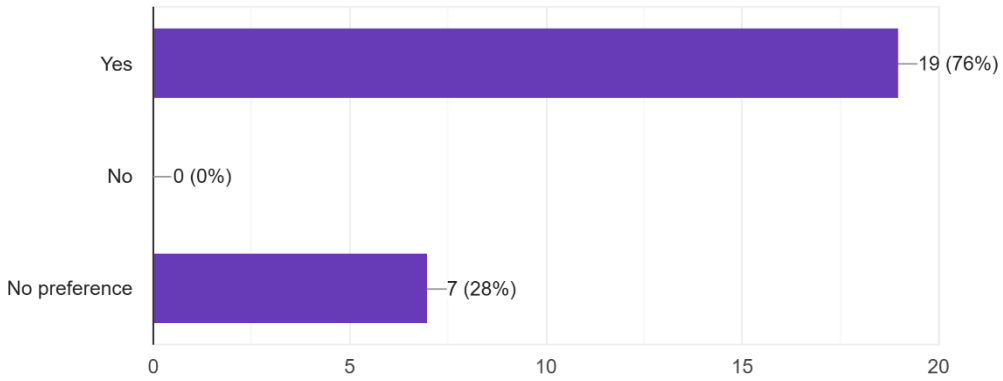


Interpretation:

Responses are relatively balanced: 44.8% find the download functionality convenient, while 48.3% indicate they either do not know or do not use it. It suggests that although the feature is satisfactory for active users, awareness or regular use may be limited.
Only a small minority (6.9%) reported dissatisfaction. Additional comments indicate minor usability improvements, such as easier date/time extraction from CSV files and the ability to select specific time ranges before downloading.
Overall, the results suggest that the download function is generally adequate but could benefit from improved usability, clearer guidance, and potentially more flexible filtering options to support operational workflows better.

15. If yes, would it be helpful to have small download buttons directly next to the map and time series plots?

25 responses



Interpretation:

A strong majority of respondents (76%) indicated that having small download buttons directly next to maps and time series plots would be helpful. It suggests a clear preference for **immediate, context-based download functionality**, integrated directly within visual outputs.
No respondents selected "No," while 28% indicated no particular preference. It further reinforces that the proposed feature would improve usability without creating user resistance.
Overall, the results highlight the importance of **streamlined, intuitive access to data exports, reducing the number of steps required and enabl**ing more efficient workflows.

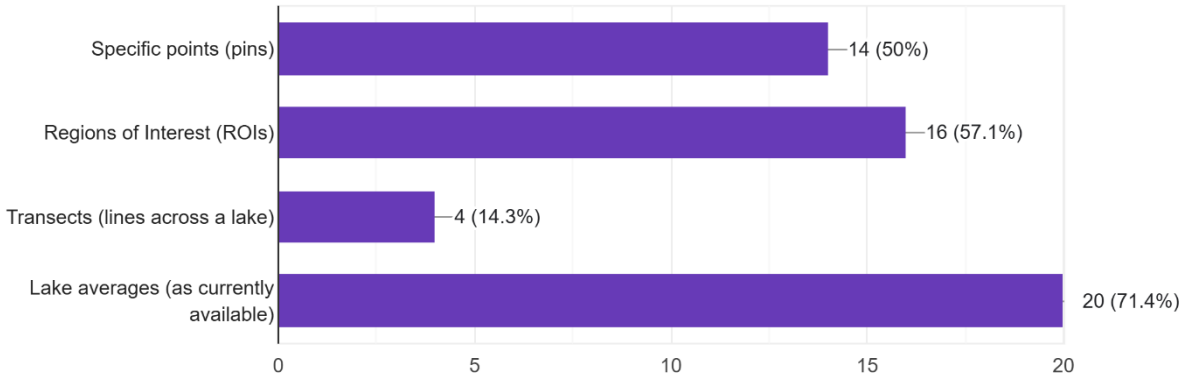
16. If no, what would make it easier for you?

1 response: a training session.

Section Time Series Data

17. Currently, the platform shows lake average time series for remote sensing products. Which spatial extracts are most suitable for you (multiple answers):

28 responses



Interpretation:

The majority of respondents (71.4%) consider **lake averages** (as currently available) suitable, indicating that aggregated lake-wide values remain an important reference for general status assessment and reporting.
However, a substantial proportion also expressed preference for more spatially refined options: **Regions of Interest** (ROIs) (57.1%) and **specific points (pins) (50%)**. It demonstrates strong demand for more targeted spatial analysis, particularly for site-specific monitoring and operational decision-making.
In contrast, **transects (14.3%)** were selected by relatively few respondents, suggesting that line-based spatial analysis is less commonly required.
Overall, the results show that while lake-wide averages remain important, users increasingly value the ability to extract **location-specific and flexible spatial subsets**, especially ROIs and point-based selections, to reflect spatial heterogeneity within lakes better.

18. Please explain how or why you use spatial extracts like pins, ROIs, transects or other optional extracts?

12 responses:

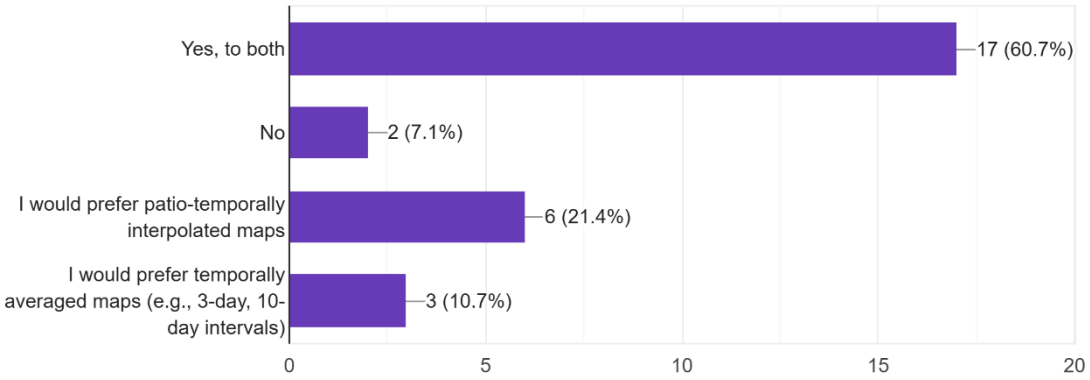
- Analyse spatial variability
- To define the points of the lakes where cyanobacteria are present
- Due to the spatial variability of the lake
- ROIs can be best fitted to existing long-term monitoring sites
- Comparison with in situ sites, comparison of different lake parts, especialy long shaped lakes, or lakes with strong inflows on one side

- Spatial variability combined with averages makes it possible to better understand the lake's sensitivity and the often contrasting, site-dependent responses of users, and therefore to better target our messages.
- ROIs piece of surface
- The answer is based on the monitoring activities for the ecological classification (Water Framework Directive 2000/60/CE).
- Public info
- Drinking water catchments; beaches' water quality
- Compare/calibrate data acquired with the water drone, to decide where/when to deploy
- To generate information about bays or certain shorelines

Section Map Products

19. To cover up cloudy areas or days, would you find it useful to have spatio-temporally interpolated maps or temporally averaged maps (e.g., 3-day, 10-day intervals)

28 responses



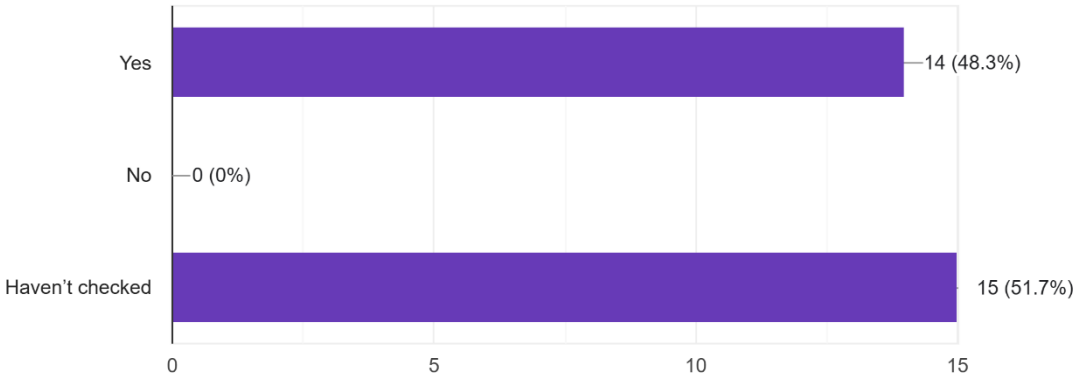
Interpretation:

A clear majority of respondents (60.7%) indicated that both **spatio-temporally interpolated maps** and temporally averaged maps would be useful. It demonstrates strong overall support for enhanced data continuity solutions to address cloud cover and data gaps.
Among those expressing a specific preference, more respondents favour **spatio-temporal interpolation** (21.4%) than temporally averaged maps (10.7%), suggesting that users may perceive interpolation as providing more precise or representative spatial information.
Only a small minority (7.1%) considers these features useful.
Overall, the results indicate that users value improved **temporal consistency and spatial completeness** in remote sensing products, particularly when these enhancements help mitigate cloud-related data gaps and support more reliable interpretation.

Section Parameter Documentation

20. Is the documentation for each parameter (e.g., water quality variables) clear and sufficient for your use?

29 responses



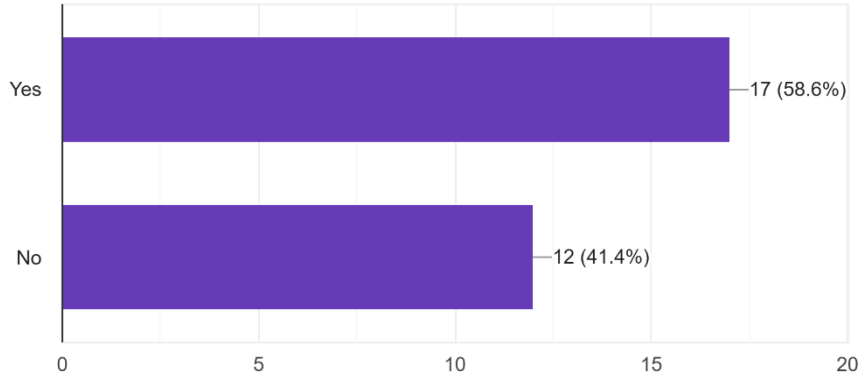
Interpretation:

Almost half of the respondents (48.3%) consider the parameter documentation clear and sufficient, while slightly more (51.7%) have not yet checked it. Importantly, no respondents reported that the documentation is insufficient.
This suggests that while the documentation itself does not appear to raise concerns, its visibility or use may be limited. Increasing awareness of available documentation and making it more prominently accessible within the platform could improve user confidence and uptake.
Overall, the results indicate that documentation quality is likely adequate, but user engagement with it could be strengthened.

Section User Data Upload

21. Would you be interested in uploading your own data to visualize alongside model or EO data?

29 responses



Interpretation:

A majority of respondents (58.6%) expressed interest in uploading their own data to visualise alongside model or Earth Observation (EO) outputs. This indicates a clear demand for integration functionality that enables users to compare satellite-derived or modelled results with their own in situ or operational datasets.
However, a significant minority (41.4%) indicated no interest, suggesting that while the feature would be valuable for many, it should remain optional and not overly complicate the core user experience.
Overall, the results highlight the importance of developing a user data upload feature as an advanced functionality, supporting more in-depth analysis and calibration workflows, particularly for professional and institutional users.

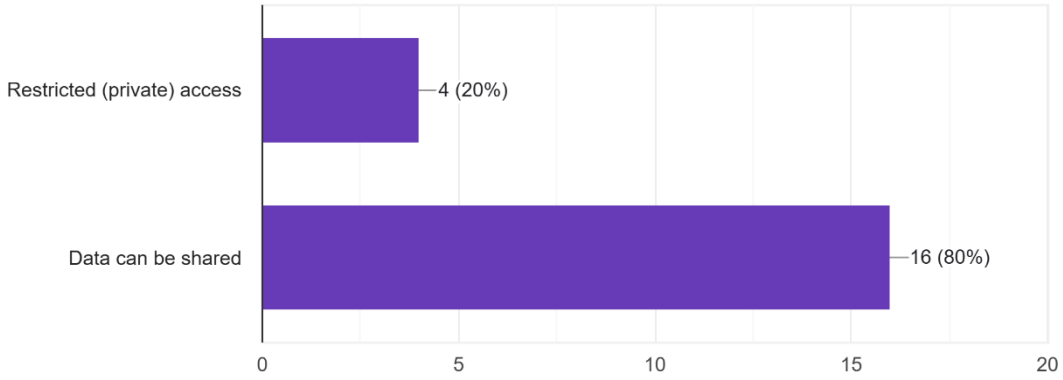
22. If yes, what type of data?

16 responses:

- Regarding Lake Garda profile in the 2 major depth sites and in the bathing waters (T, O2, pH, conductivity, transparency, vertical water circulations, and microbiological surveillance on bathing waters).
- ALL
- Vertical temperature profile, phosphorus and nitrate concentration, oxygen concentration, chl-a (in euphotic zone and vertical profile), secchi depth, phytoplankton biomass, taxonomic composition (of phytoplankton, phytobenthos, macrophytes, benthic invertebrates and fish)
- Lake monitoring Data are already delivered
- Field data - biological data
- We still have to test the page, but for any special questions that may arise, we need to upload the current data that aren't yet in the official download centre.

- Reactions of different categories of users to changes in the lake and its condition
- Chemical, physical, and biological data
- CSV, XLSX, XML
- Physical and chemical data (temperature, nitrogen)
- Bi-monthly field data at shl2 / Lake Geneva
- Littoral water temperature
- All monitoring data
- Electroconductivity, possibly bathymetry
- Chlorophyll
- Temperature

23. If yes, would you require restricted (private) access, or would you share your data for the public?
20 responses



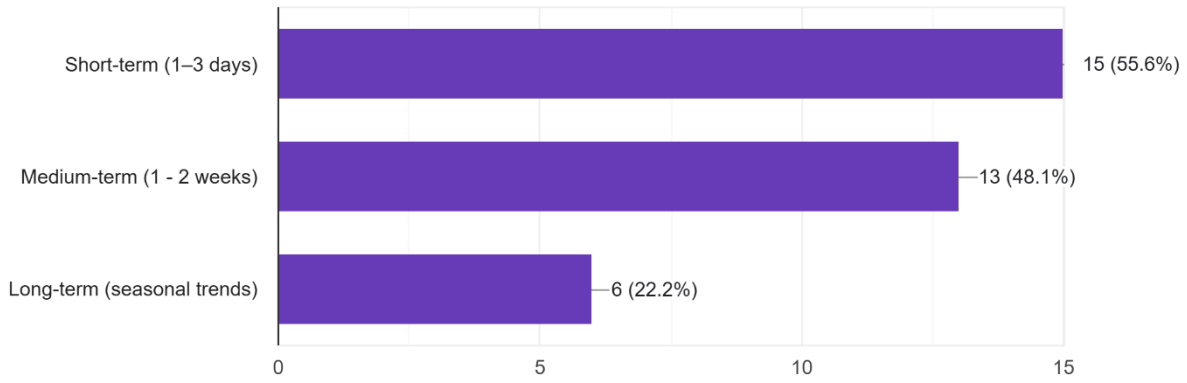
Interpretation:

A strong majority of respondents (80%) indicated that their data can be shared publicly, demonstrating a generally open attitude toward data transparency and collaborative data exchange.
Only 20% expressed a preference for restricted (private) access, suggesting that while most users are willing to share data, a minority require controlled access—potentially due to institutional policies, data sensitivity, or regulatory considerations.
Overall, the results suggest that the platform should primarily support **open data sharing**, while also offering optional access control mechanisms to accommodate users who require restricted visibility.

Section Forecasting (in qualitative terms) & Alerts

24. What timeframe is most useful for cyanobacteria risk forecasting?

27 responses



Interpretation:

The majority of respondents (55.6%) consider **short-term forecasts (1–3 days)** most useful, indicating a strong need for rapid, operationally relevant information to support immediate decision-making and public health protection.
Nearly half (48.1%) also value **medium-term forecasts (1–2 weeks)**, suggesting that short- to medium-term planning horizons are important for scheduling monitoring campaigns, preparing interventions, and communicating with stakeholders.
In contrast, **long-term (seasonal) forecasts (22.2%)** are less frequently selected, implying that while long-term trends are informative, they are less critical for day-to-day management and risk response.
Overall, the results highlight that the forecasting system should prioritise **reliable short-term predictions**, complemented by medium-term outlooks, to effectively support operational lake management and early warning systems.

25. Why is this timeframe most important to your work or decisions?

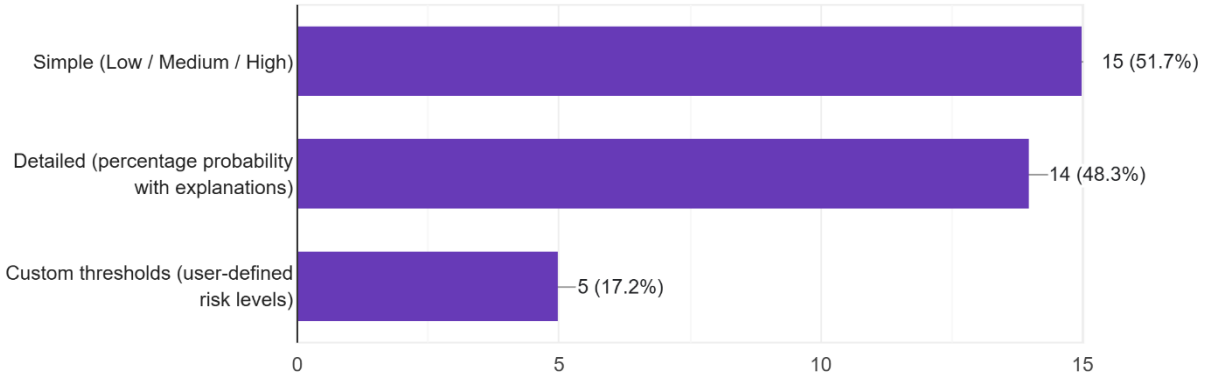
19 responses:

- For human health safety and for eutrophication
- Planning of sampling at the lake
- To give the information to the Department of Health, so they can act and give public information
- EARLY WARNING
- I think it is probably not possible, especially if the PHP blooms are not too excessive
- To schedule monitoring and plan interventions
- For having data-driven predictability
- Because the uncertainties are too large for longer timeperiods and the results are then not convincing for the public

- For us as an NGO, broad trends and probabilities are sufficient; of course, it is up to the administrative authorities to issue alerts.To follow and describe the bloom
- 1 or 2 weeks will be enough time for public information measures. I think seasonal forecasting will be of "guess" quality, and shorter timeframes will yield more reliable forecasts.
- Need the information only for ecological classification and no interest in public health, in consideration of the lakes of the region
- Short-term and medium-term
- Public info
- To be able to alert the decision makers quickly
- Correlation with other data
- Can be used to plan a data collection campaign with a water drone
- Due to data reliability
- React in time and organise your own sampling

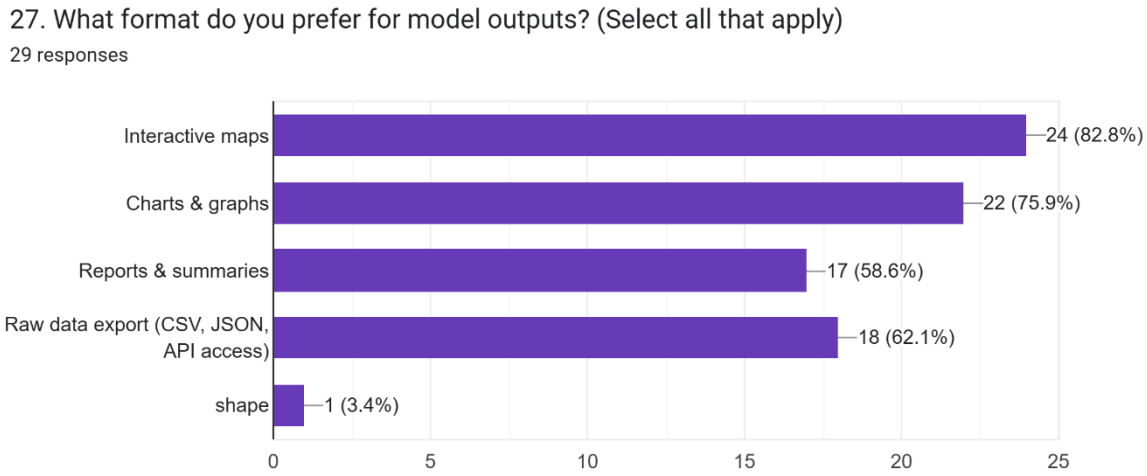
26. What level of risk (human health risk and all services that can directly impact human health) classification is most useful?

29 responses



Interpretation:

Slightly more than half of respondents (51.7%) prefer a **simple risk classification** (Low / Medium / High), indicating that clear, easy-to-communicate categories are highly valued—particularly for operational use and public communication.
A nearly equal proportion (48.3%) favour a **detailed classification with percentage probabilities and explanations**, suggesting strong interest in more nuanced, evidence-based information, especially among technically oriented users.
Only 17.2% selected **custom thresholds**, implying that while tailored risk levels are relevant for some users, most prefer standardised classifications.
Overall, the results indicate that the tool should ideally provide a **simple, clear risk level as default**, complemented by an optional detailed view with probability estimates and explanatory information to support expert users and decision-makers.

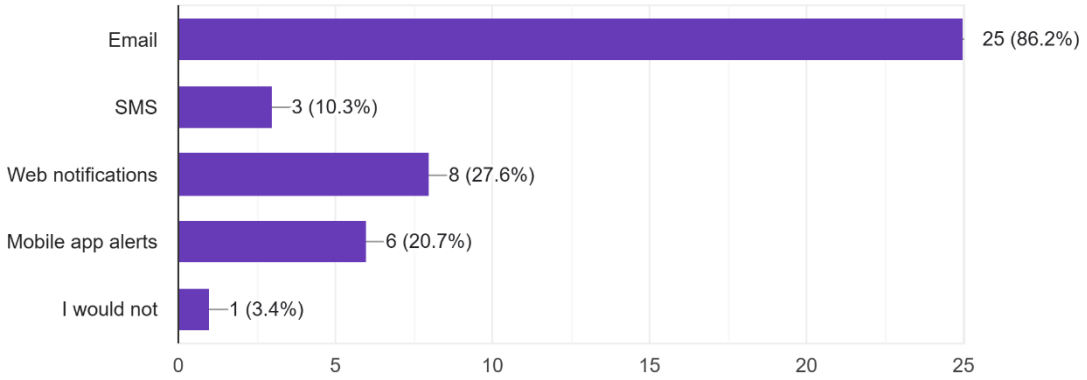


Interpretation:

The strongest preference is for **interactive maps (82.8%)**, confirming that spatially explicit and dynamic visualisation is the primary format users expect for model outputs.
A similarly high proportion (75.9%) selected **charts and graphs**, indicating that users also require clear temporal and analytical representations to interpret model behaviour and trends.
More than half of respondents value **raw data export (62.1%)**, demonstrating the importance of allowing users to integrate model results into their own workflows, analyses, or institutional systems. Likewise, **reports and summaries (58.6%)** are seen as useful, especially for communication and documentation purposes.
Very few respondents selected shape files (3.4%), suggesting that highly technical GIS export formats are less of a general priority.
Overall, the findings show that users expect model outputs to be delivered through a **combination of interactive visualisation, analytical charts, accessible summaries, and optional raw data export**, supporting both operational use and in-depth technical analysis.

28. How would you like to receive alerts and updates? (Select all that apply)

29 responses

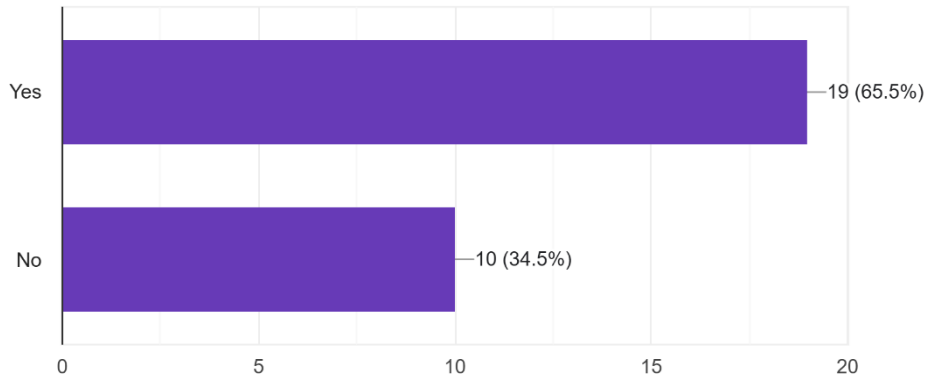


Interpretation:

A very strong majority of respondents (86.2%) prefer to receive alerts via **email**, making it the clearly dominant communication channel. This indicates that email-based alert systems should be prioritised as the primary notification mechanism.
Other channels, such as web notifications (27.6%) and mobile app alerts (20.7%), are of secondary interest, suggesting that while multi-channel communication may add value, it is not essential for most users.
Only a small proportion selected **SMS (10.3%)**, and almost no respondents indicated that they would not want alerts (3.4%).
Overall, the results show that a reliable and well-structured **email alert system** should form the core of the notification strategy, potentially complemented by optional web or mobile alerts for users who require faster or more integrated updates.

29. Would you like to set custom thresholds for alerts (e.g., water temperature exceeding a certain value)?

29 responses



Interpretation:

A clear majority of respondents (65.5%) would like the option to set **custom thresholds for alerts**, indicating strong demand for flexible and locally adaptable alert systems.
At the same time, 34.5% indicated no need for custom thresholds, suggesting that a standardised alert system would still satisfy a significant portion of users.
Overall, the results show that while default threshold values are important, the platform should ideally offer **optional user-defined thresholds** to accommodate site-specific conditions, regulatory requirements, and institutional preferences.

30. Which parameters would you want to set custom thresholds for?

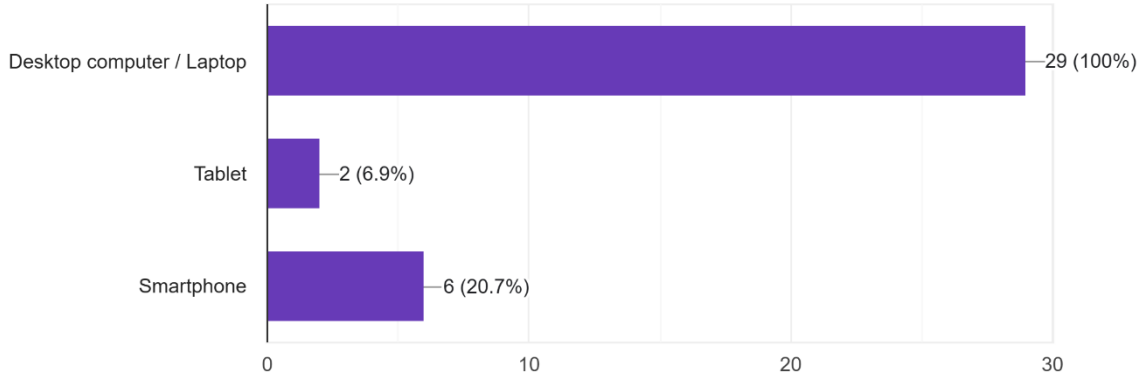
15 responses:

- Cyanobacterial Chla or toxin data
- CHLOROPHYLL
- Eg, Cyanobakteria Biomass to check for toxic strains at the site
- Concentration of cyanobacteria
- Chlorophyll a
- Cyano-risk
- Chlorophyll a, TSS, Temperature
- Temperature wind
- Temperature and Chlorophyll-a
- Temperature and oxygen saturation
- For Lake Geneva, typically areas related to beaches, drinkingwater supply spots
- Temperature, pluviometry
- Chlorophyll
- Chlorophyll-a, temperature, turbidity
- Temperature

Section Accessibility & Usability

31. What devices do you primarily use to access environmental data? (Select all that apply)

29 responses



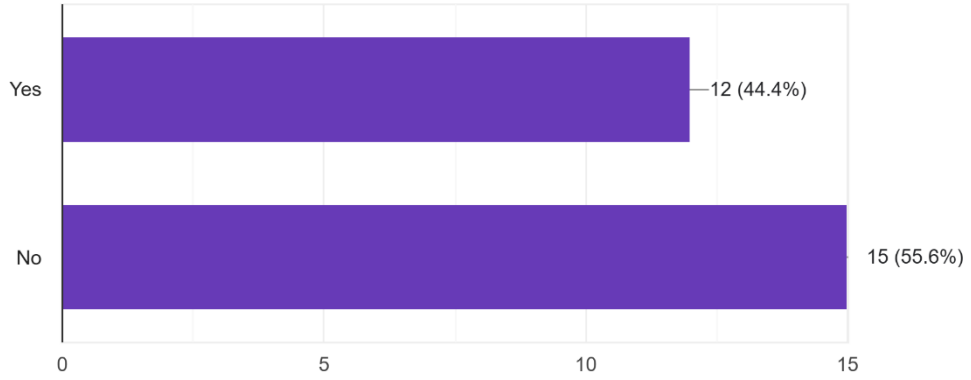
Interpretation:

All respondents (100%) reported using a **desktop computer or laptop** to access environmental data, clearly indicating that the platform should be fully optimised for desktop use.
A smaller proportion use **smartphones (20.7%)**, and very few use **tablets (6.9%)**, suggesting that while mobile accessibility may add value, it is not the primary mode of access.
Overall, the results show that the platform should prioritise **desktop functionality, performance, and interface design**, while ensuring responsive mobile compatibility as a secondary consideration.

Section Integration & Future Enhancements

32. Would you be interested in using the tool with your own database or data sets?

27 responses



Interpretation:

Responses are relatively balanced: 44.4% expressed interest in using the tool with their own databases or datasets, while 55.6% indicated no interest.
This suggests that although integration with external databases is important for a substantial group of technically advanced or institutional users, it is not a universal requirement.
Overall, the results indicate that database integration should be considered an **advanced or optional feature**, supporting users with higher analytical needs, while ensuring that the core functionality remains simple and accessible for the majority.

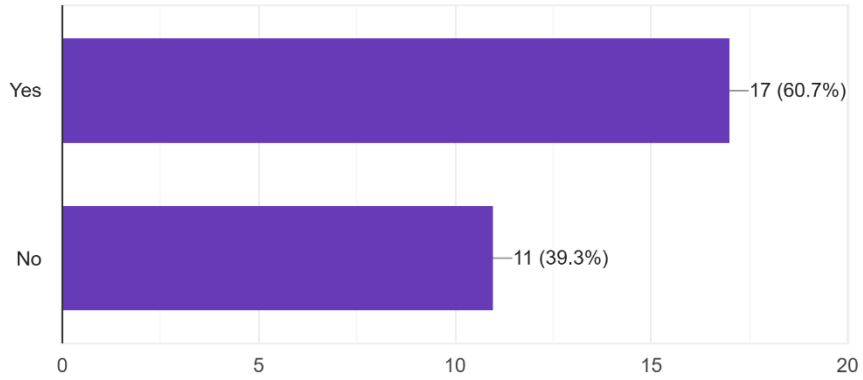
33. If yes, please specify which systems or examples.

7 responses:

- Wiski
- Our data are already used
- Geographic information system
- Excel - Si-OLA/Thonon-les-Bains
- Maps, water temperature
- Internal work systems
- Internal ARSO monitoring system & IS monitoring

34. Would you be interested in contributing data to improve the tool or the model?

28 responses



Interpretation:

A clear majority of respondents (60.7%) expressed interest in contributing data to improve the tool or the model, indicating strong potential for collaborative development and continuous improvement.
However, a substantial minority (39.3%) indicated no interest, suggesting that while many stakeholders are willing to engage actively, participation should remain voluntary and not be assumed.
Overall, the results demonstrate a promising willingness among users to support model refinement and platform enhancements through data sharing, reinforcing the value of establishing structured, transparent mechanisms for data contribution.

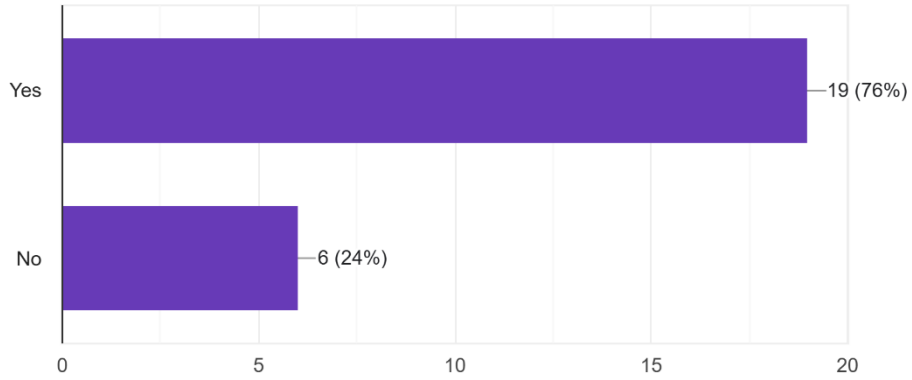
35. If yes, please specify which systems or examples.

14 responses:

- LAKE GENEVA ALGA PROJECT
- Monitoring data
- Add further environmental monitoring data
- Our data are already used
- Simple parameters that nevertheless require a spatially explicit assessment.
- Correlation between remote sensing data and parameter concentration measured in the lake
- Sampling data (4 times per year) and buoy data of temperature
- Chemical-physical data and biological taxa lists
- Lake Geneva -SHL2 - field data
- Water temperature
- All monitoring data
- Water drone to collect relevant data in a small area
- Data from national monitoring of ecological status
- We already provided our relevant data

36. Would you be interested in contributing feedback to improve the tool or the model?

25 responses

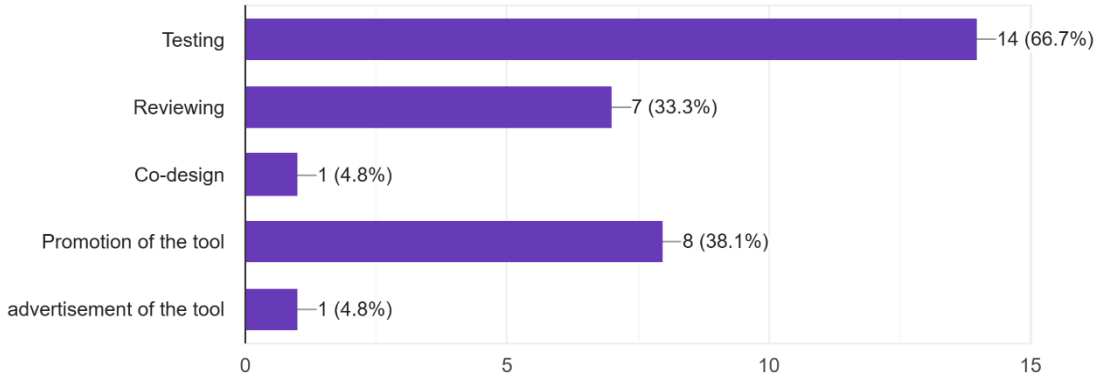


Interpretation:

A strong majority of respondents (76%) expressed interest in contributing feedback to improve the tool or model, indicating a high level of engagement and willingness to participate in iterative development.
Only 24% indicated no interest, suggesting that while not all users wish to be actively involved, a substantial core group is ready to contribute to ongoing refinement.
Overall, the results demonstrate significant potential for establishing structured feedback mechanisms (e.g., surveys, user groups, pilot testing) to support continuous improvement and co-development of the platform.

37. If yes, please specify how would you like to contribute.

21 responses



Interpretation:

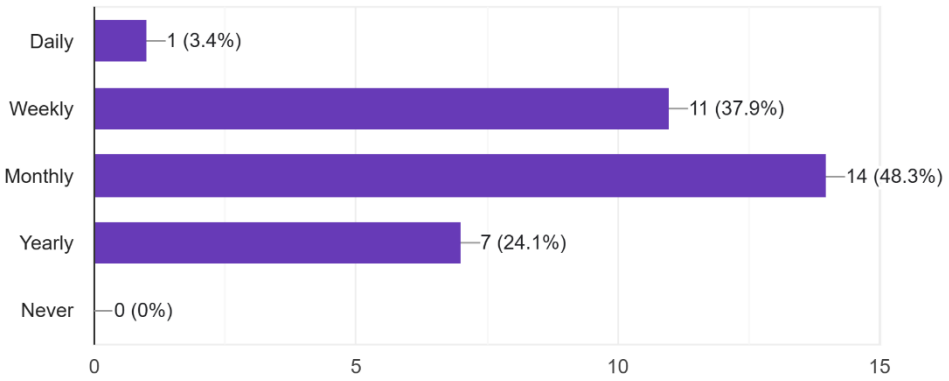
The most common form of contribution identified by respondents is **testing the tool (66.7%)**, indicating a strong interest in practical engagement and hands-on validation of functionalities.
A notable proportion also expressed willingness to support **the promotion of the tool (38.1%) and to review outputs or content (33.3%)**, suggesting that users are open to contributing both technically and communicatively.
Only a small share selected **co-design (4.8%)** or advertising (4.8%), implying that while active development collaboration is less common, structured user testing and feedback mechanisms would likely receive broad participation.
Overall, the results suggest that establishing pilot user groups for testing and structured review processes would be the most effective way to involve stakeholders in further tool development.

38. Are there any additional features, improvements, or use cases you would like to see in this tool or model to support your work better?
5 responses:

- Lake water level graphs;
- In the future, maybe a better satellite resolution will enable us to extend the analysis to smaller lakes
- More views and charts for chl a in situ data for water temperature, even if the data is not very recent (we have a nearly one-year delay in providing our in situ data)
- No
- Lakes habitats (lakeside meadows, etc.)

39. How often you plan to use our DiMark NETWORK (ext)_DiMark NETWORK | General | Microsoft Teams)

29 responses



Interpretation:

The majority of respondents plan to use the DiMark NETWORK monthly (48.3%), followed by weekly use (37.9%), indicating moderate but regular engagement.

Only a small proportion (3.4%) foresee daily use, suggesting that the platform is not expected to function as a daily operational tool but rather as a coordination, exchange, or update space.
A notable share (24.1%) indicated yearly use, implying that some stakeholders may engage only occasionally, possibly aligned with reporting cycles, workshops, or specific project milestones.
Overall, the results suggest that the DiMark NETWORK is expected to serve primarily as a **periodic collaboration and information-exchange platform** rather than a high-frequency operational workspace.

Appendix 1: Invitation

Dear DiMark Network and **Observers,**

On behalf of DiMark Team, I would like to invite you and/or kindly remind you that the **1st DiMark workshop with stakeholders** will take place next **Friday, May 23, 2025**, starting at **9:00** GMT+2.

Please find the full **agenda** for online session and additional details in the attached PDF.

This initial workshop will feature:

- An introduction to the DiMark project and its objectives
- Presentations on the use of Earth Observation (EO) and satellite data in lake monitoring
- A case study on integrating EO with in situ data (Lake Garda)
- A demonstration of the **Alplakes** platform that provides predictions of the condition of lakes across the European Alpine region (Alplakes)
- An overview of the **development of model for cyano-risk prevention**, cyano-risk prevention model to forecast harmful algal blooms
- Final remarks and discussion

Microsoft Teams Meeting Link:
You will be able to join the meeting using this link

Calendar Invitation:
An **Outlook iCalendar (.ics)** file is attached if you would like to add the event to your calendar, if you haven't already done so.

We hope you can join us for this important first step in building the DiMark network. If you have any questions or need further information, feel free to contact us.

More about DiMark:
https://www.alpine-space.eu/project/dimark/

More about the Alplakes platform:
https://www.alplakes.eawag.ch/

Appendix 2: AGENDA 1st DiMark workshop with stakeholders

Interreg Alpine Space | Co-funded by the European Union | DiMark

AGENDA

1st DiMark workshop with stakeholders (online, 23.5.2025)

Link to the meeting:	1st DiMark workshop with stakeholders

From	Till	Presentor	Title
09:00	09:05		Get together
09:05	09:15	Tina	Intro on DiMark
09:15	10:00	Daniel	**Earth Observation (EO) methodology for visualisation tool** Satellite data as supplement for lake monitoring
10:00	10:40	Mariano	**Integration of EO into in situ data , the case of Lake Garda** Satellite-based monitoring of water quality, ecosystems, and shallow waters using multi-sensor data
10:40	10:50		Coffee Break
10:50	11:15	James	**"Hands on" Alplakes** Introducing a platform that provides predictions of the condition of lakes across the European Alpine region, combining advanced models and remote sensing tools from the research community
11:15	11:45	Orlane	**Modelling** Development of model for cyano-risk prevention, a model that predicts the probability of bloom occurrence
11:45	12:00		Final remarks and discussion

More about DiMark:	DiMark Website
More about Alplakes:	Alplakes

This project is co-funded by the European Union through the Interreg Alpine Space programme.

Appendix 3: Questionnaire

DiMark: User Needs & Expectations Survey (Alplakes)

Introduction

In the frame of the DiMark project, we are developing (i) **a visualisation tool** and (ii) **a risk prevention model** to facilitate the dissemination of environmental data and forecasts, particularly related to cyanobacterial dominance. Both ready-to-use solutions will be co-developed; initially set by academia and repeatedly tested by stakeholders, providing valuable feedback on lake managers' perspectives. Therefore, your feedback is essential to balance the expectations about tool and model, and ensure that they meet the needs of its users. This questionnaire (in 2025 and repeated in 2026) will help us to establish knowledge exchange platform DiMark NETWORK.

Different solutions will be co-developed for different lakes (key and additional lakes v2.xlsx):
(i) The visualisation tool (Earth observation product layers & Hydrodynamic simulation layers) is an online visualisation tool with maps of the Alpine area for inspecting/comparing the state of waters based on key freshwater markers (such as surface temperature, transparency, turbidity, chlorophyll-a, phytoplankton composition and meteorological data). **Earth observation product layers** will be developed for ALL LAKES. **Hydrodynamic simulation layers** will be developed for KEY LAKES with 3D model and ADDITIONAL LAKES with 1D model, which is already available at

Alplakes.
(ii) The model for cyano risk-prevention will enable sustainable management of lakes with minimising health risk. It can be used individually or together with visualisation tool for a broader understanding of the lake state (adding new freshwater markers such as vertical profile of chlorophyll-a, nutrients, phytoplankton composition, cyanotoxin variants and their concentrations). **The model for cyano risk-prevention** will be based on water quality cyano-monitoring by “Ecological niche” principle.

Estimated time to complete: 15 minutes.

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User Background

1. 1. What is your primary role?
   (Select all that apply)

   Tick all that apply.

   - [ ] Researcher / Scientist
   - [ ] Government official (national or regional)
   - [ ] Policy maker (national or regional)
   - [ ] Water authority (national or regional)
   - [ ] Environmental agency (national or regional)
   - [ ] NGO / Activist
   - [ ] General public / Citizen scientist
   - [ ] Local site manager / Community administration / “Bademaister”
   - [ ] Municipality representative for water Issues
   - [ ] Other: _____

2. 2. What country is your organisation/institution from?

   Tick all that apply.

   - [ ] Austria
   - [ ] France
   - [ ] Germany
   - [ ] Italy
   - [ ] Slovenia
   - [ ] Switzerland
   - [ ] International

3. 3. Have you used Alplakes before and how often?

Tick all that apply.

- [ ] Daily
- [ ] Weekly
- [ ] Monthly
- [ ] Yearly
- [ ] I have never used it before

4. 4. How would you rate your interest in developing or using a visualisation tool or model? *(Select all that apply)*

Tick all that apply.

- [ ] Very interested and ready for co-development in DiMark
- [ ] Interested in the final products but not in co-development
- [ ] Slightly interested
- [ ] Other: _____

5. 5. What is/would be your main purpose for using the visualisation tool? *(Select all that apply)*

Tick all that apply.

- [ ] Research & Analysis
- [ ] Decision-making & Policy Development
- [ ] Public Awareness & Education
- [ ] Environmental Protection & Management
- [ ] Disaster Preparedness & Response
- [ ] Other: _____

6. 6. How do you plan to use the cyanobacteria risk model (lake specific or general model)? *(Select all that apply)*

Tick all that apply.

- [ ] Early warning system for public health
- [ ] Research & scientific analysis
- [ ] Policy & decision-making
- [ ] Water resource management
- [ ] Other: _____

7. 7. What level of technical expertise (in the field of data analyses and modelling) do you have?

Tick all that apply.

- [ ] Expert (experience with environmental models & data analysis)
- [ ] Intermediate (can interpret model outputs but not modify them)
- [ ] Beginner (need simplified outputs and guidance)
- [ ] None

Data & Visualization Needs

8. 8. What types of information are most relevant to you? *(Select all that apply)*

Tick all that apply.

- [ ] Biotic markers (e.g., algae, cyanobacteria)
- [ ] Abiotic markers (e.g., temperature, water turbidity)
- [ ] Historical trends
- [ ] Real-time monitoring
- [ ] Predictive forecasts
- [ ] Other: _____

9. 9. How would you like to interact with the data? *(Select all that apply)*

Tick all that apply.

- [ ] Interactive maps
- [ ] Graphs and charts
- [ ] Raw data downloads
- [ ] Customizable reports
- [ ] Comparison tools (e.g., different time periods or locations)
- [ ] Other: _____

10. 10. What map features are important for you? *(Select all that apply)*

Tick all that apply.

- [ ] Multiple data layers
- [ ] Zooming and filtering options
- [ ] Custom region selection (region within a lake)
- [ ] Custom region selection (geographical region)
- [ ] Integration with external GIS tools
- [ ] Offline access
- [ ] Other: _____

11. 11. What format do you prefer for visualizing trends over time? *(Select all that apply)*

Tick all that apply.

- [ ] Line charts
- [ ] Bar charts
- [ ] Heatmaps
- [ ] Tables
- [ ] Other: _____

12. 12. Do you have access to real-time environmental data for model calibration?

Tick all that apply.

- [ ] Yes, from in-house monitoring stations
- [ ] Yes, from external sources (please specify)
- [ ] No, we rely on historical data
- [ ] Other: _____

Comparing Lakes

13. 13. Would you prefer a map view that displays multiple adjacent lakes, e.g. within an administrative unit?

Tick all that apply.

- [ ] Yes, even if it means somewhat slower rendering
- [ ] Only if the performance tradeoffs are insignificant
- [ ] No

Download Functionality

14. 14. Do you find the platform's **downloading functionality** convenient?

Tick all that apply.

- [ ] Don't know/need
- [ ] Yes
- [ ] No
- [ ] Other: _____

15. 15. If yes, would it be helpful to have **small download buttons** directly next to the map and time series plots?

Tick all that apply.

- [ ] Yes
- [ ] No
- [ ] No preference

16. 16. If no, what would make it easier for you?

_____

Time Series Data

17. 17. Currently, the platform shows **lake average time series** for remote sensing products. Which spatial extracts are most suitable for you (multiple answers):

Tick all that apply.

- [ ] Specific points (pins)
- [ ] Regions of Interest (ROIs)
- [ ] Transects (lines across a lake)
- [ ] Lake averages (as currently available)
- [ ] Other: _____

18. 18. Please explain how or why you use spatial extracts like pins, ROIs, transects or other optional exctracts?

Map Products

19. 19. To cover up cloudy areas or days, would you find it useful to have spatio-temporally interpolated maps or **temporally averaged maps** (e.g., 3-day, 10-day intervals)

Tick all that apply.

- [ ] Yes, to both
- [ ] No
- [ ] I would prefer patio-temporally interpolated maps
- [ ] I would prefer temporally averaged maps (e.g., 3-day, 10-day intervals)

Parameter Documentation

20. 20. Is the **documentation for each parameter** (e.g., water quality variables) clear and sufficient for your use?

Tick all that apply.

- [ ] Yes
- [ ] No
- [ ] Haven't checked
- [ ] Other: _____

User Data Upload

21. 21. Would you be interested in **uploading your own data** to visualize alongside model or EO data?

Tick all that apply.

- [ ] Yes
- [ ] No

22. 22. If yes, what type of data?

_____

23. 23. If yes, would you require restricted (private) access, or would you share your data for the public?

Tick all that apply.

- [ ] Restricted (private) access
- [ ] Data can be shared

Forecasting (in qualitative terms) & Alerts

24. 24. What **timeframe** is most useful for cyanobacteria risk forecasting?

Tick all that apply.

- [ ] Short-term (1–3 days)
- [ ] Medium-term (1 - 2 weeks)
- [ ] Long-term (seasonal trends)

25. 25. Why is this timeframe most important to your work or decisions?

_____

_____

_____

_____

_____

26. 26. What level of risk (human health risk and all services that can directly impact human health) classification is most useful?

Tick all that apply.

- [ ] Simple (Low / Medium / High)
- [ ] Detailed (percentage probability with explanations)
- [ ] Custom thresholds (user-defined risk levels)

27. 27. What format do you prefer for model outputs? *(Select all that apply)*

Tick all that apply.

- [ ] Interactive maps
- [ ] Charts & graphs
- [ ] Reports & summaries
- [ ] Raw data export (CSV, JSON, API access)
- [ ] Other: _____

28. 28. How would you like to receive alerts and updates? *(Select all that apply)*

Tick all that apply.

- [ ] Email
- [ ] SMS
- [ ] Web notifications
- [ ] Mobile app alerts
- [ ] Other: _____

29. 29. Would you like to set **custom thresholds** for alerts (e.g., water temperature exceeding a certain value)?

Tick all that apply.

- [ ] Yes
- [ ] No

30. 30. Which parameters would you want to set custom thresholds for?

_____

Accessibility & Usability

31. 31. What devices do you primarily use to access environmental data? *(Select all that apply)*

Tick all that apply.

- [ ] Desktop computer / Laptop
- [ ] Tablet
- [ ] Smartphone

Integration & Future Enhancements

32. 32. Would you be interested in using the tool with your own database or data sets?

Tick all that apply.

- [ ] Yes
- [ ] No

33. 33. If yes, please specify which systems or examples.

34. 34. Would you be interested in contributing data to improve the tool or the model?

Tick all that apply.

- [ ] Yes
- [ ] No

35. 35. If yes, please specify which systems or examples.

36. 36. Would you be interested in contributing feedback to improve the tool or the model?

Tick all that apply.

- [ ] Yes
- [ ] No

37. 37. If yes, please specify how would you like to contribute.

Tick all that apply.

- [ ] Testing
- [ ] Reviewing
- [ ] Co-design
- [ ] Promotion of the tool
- [ ] Other: _____

38. 38. Are there any additional features, improvements, or use cases you would like to see in this tool or model to better support your work?

_____

_____

_____

_____

_____

39. 39. How often you plan to use our DiMark NETWORK (ext)_DiMark NETWORK | General | Microsoft Teams)

Tick all that apply.

- [ ] Daily
- [ ] Weekly
- [ ] Monthly
- [ ] Yearly
- [ ] Never

Thank You!

We appreciate your time and insights. Your input will help shape a tool that best meets user needs. If you'd like to be part of DiMark NETWORK and be involved in further development, discussions or testing, please provide your email below (if you are not already a member of DiMark NETWORK).

40. Email (optional):

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Alpine Space

Appendix 4: Local co-creation workshop report – Austria

Interreg Alpine Space

Co-funded by the European Union

DiMark

Local co-creation workshop report

D 3.1.1

Name of Author(s)	Rainer Kurmayer, Magdalena Purker
Department/Organization/Institution	Univ. of Innsbruck, AGES
Date of the document	06-03-2025
Version	1
Project	DiMark

Name	*Dimark Observer Austria Zoom Meeting*
Date and time	*23.5.2025, 12-14h*
Location/Venue	*online*
Organiser(s)	*UIBK, AGES*
No. of participants	*11*
Breakdown of participating organisations per target groups *(e.g., 5 SME's, 7 research institutions, etc.)*	*1x Sectoral agency* *4x Regional public authority* *2x SME*
Names of participating organisations	*Amt der Kärntner Landesregierung, Abteilung 8 Umwelt, Energie und Naturschutz, 9020 Klagenfurt am Wörthersee, Kirchengasse 43* *BAW Scharfling, Inst für Gewässerökologie und Fischereiwirtschaft, Scharfling 18, A-5310 Mondsee* *Land Salzburg, Referat 7/05 – Gewässerschutz* DWS-Hydroökologie, Zentagasse 47/ 5 – 1050 Wien Amt der Nö. Landesregierung, Abteilung Umwelthygiene Land Vorarlberg, Institut für Umwelt und Lebensmittelsicherheit EO4us, Penzinger Straße 50/20 1140 Vienna / Austria

Summary	*Several topics were discussed according to the agenda:* *1) Introduction to the alplakes website (EAWAG partner in the Dimark project)* *2) Overview of the GZÜV data for lakes in Austria* *3) Overview of the data for bathing waters* *4) Overview of the Sentinel 2 time series analysis of small bodies of water* *5) Other* *Ad 1) alplakes website* *The website uses the visualization of satellite data for Chl. a and Secchi to suggest an accuracy that does not apply in situ* *In general, the website should explicitly state that the absolute values are derived from satellite data and are not validated (there is no basis for this)* *The provision of the GZÜV data or the visualization of the 18 lakes in the project is considered useful, but it makes sense to ask the Federal Ministry for permission* *Ad 2) An overview of the collected GZÜV data (18 lakes in Upper Austria, Salzburg, Carinthia and Vorarlberg) was provided* *Ad 3) AGES has selected 6 bathing waters in Lower Austria that have been regularly sampled since 2015 and will be used for satellite comparison with Sentinel 2* *Ad 4) Overview of Sentinel 2 time series analysis for small water bodies* *+) Questions & Answers* *EO offers the possibility to provide important advance information and could therefore facilitate adapting the sampling plan to the situation.* *The project should result in R-codes for the direct reading of satellite information and transfer to specific pixels on the map* *+) A list of cyanobacterial taxa and their toxin production would be desirable.* *Provide a brief overview of the workshop, including key highlights and points made, significant achievements, and outcomes. Explain the structure of the workshop (e.g., opening session-list activities-*feedback*. Consider conducting a satisfaction survey on content and gather suggestions for improvements and ideas.*

Final remarks/conclusions	The people present considered the provision of the GZÜV data and the visualization of the 18 lakes in the project to be useful. As an alternative to absolute values, an index solution would be preferable, which would prevent the generation of fictitious reference values, and the specification of fluctuation ranges could also help interpret the satellite-generated values. The possibility of introducing a plausibility check before publication of the data was also discussed (consultation with EAWAG required).
Communication activities *(update institutional website and list no. of news, posts, post-workshop follow-ups (no. of "thank-you" emails, distributions of additional workshop materials etc.))*	*Posting in Face book and LinkedIn* 27.5.2025 (UIBK): https://www.facebook.com/photo/?fbid=1291723869624546&set=update-zur-forschung-am-mondsee-im-dimark-projektam-23-mai-2025-veranstalteten-w 2.6.2025 (UIBK): https://www.linkedin.com/feed/update/urn:li:activity:7335276709035798528/ 4.7.2025 (AGES): https://www.linkedin.com/posts/austrian-agency-for-health-and-food-safety_interregproject-alpinespace-climateaction-activity-7346817711215128576-YzMI?utm_source=share&utm_medium=member_android&rcm=ACoAACRjY3oBUltdieUj_Kliwnl373s6bjx0ykU +) A list of cyanobacterial taxa and their toxin production has been excerpted from the textbook Meriluoto et al. (2017): Appendix 1: Cyanobacterial Species and Recent Synonyms; Appendix 2: Cyanobacteria Associated With the Production of Cyanotoxins.
Annexes *(photos, list of participants, presentations, questionnaires etc.)*	*Add to folder WP3 > A 3_1 Co-creation participative workshops >Reports* https://nibo365.sharepoint.com/:f:/r/sites/ext10_GEN-DiMark/Shared%20Documents/WP-3/A%203_1%20Co-creation%20participative%20workshops/Reports?csf=1&web=1&e=Ck4bEG

Name (original name)	Email	Join time	Leave time	Duration (minutes)	Guest	In waiting room
rainer.kurmayer@uibk.ac.at	rainer.kurmayer@uibk.ac.at	05/23/2025 11:43:21 AM	05/23/2025 02:10:35 PM	147	No	No
Magdalena Purker	magdalena.purker@ages.at	05/23/2025 11:50:24 AM	05/23/2025 02:10:34 PM	140	Yes	No
Loay	Loay.Hussein@uibk.ac.at	05/23/2025 11:55:26 AM	05/23/2025 02:10:34 PM	135	Yes	No
Marcel Schwarz (marcel07)	marcel.schwarz@ages.at	05/23/2025 11:51:18 AM	05/23/2025 02:10:33 PM	139	Yes	No
Markus Löw	contact@eo4us.com	05/23/2025 11:58:24 AM	05/23/2025 02:10:33 PM	132	Yes	No
Maria Friedl	maria.friedl@ktn.gv.at	05/23/2025 11:59:02 AM	05/23/2025 02:10:29 PM	131	Yes	No
Barbara Kammerlander	barbara.kammerlander@baw.at	05/23/2025 12:01:53 PM	05/23/2025 02:10:31 PM	128	Yes	No
Harald Ficker	harald.ficker@salzburg.gv.at	05/23/2025 11:56:00 AM	05/23/2025 02:10:29 PM	134	Yes	No
Roland Hainz	roland.hainz@dws-hydro-oekologie.at	05/23/2025 11:58:37 AM	05/23/2025 02:10:30 PM	131	Yes	No
Barbara Schrammel	barbara.Schrammel@noel.gv.at	05/23/2025 12:02:49 PM	05/23/2025 02:10:33 PM	127	Yes	No
Alexander Dürregger	alexander.duerregger@vorarlberg.at	05/23/2025 11:56:11 AM	05/23/2025 02:10:34 PM	134	Yes	No

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Appendix 5: Local co-creation workshop report – Germany

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Local co-creation workshop report

D 3.1.1

Name of Author(s)	Dietmar Straile
Department/Organization/Institution	UKON
Date of the document	02-07 2025
Version	1
Project	DiMark

Name	*Dietmar Straile*
Date and time	*2 July 2025, 8.00 - 10.00 am*
Location/Venue	*Online meeting*
Organiser(s)	*Dietmar Straile*
No. of participants	*6*
Breakdown of participating organisations per target groups *(e.g., 5 SME's, 7 research institutions, etc.)*	*2 governmental agencies, 1 research institution*
Names of participating organisations	*University of Konstanz* LfU Bavaria LuBW

Summary	*The meeting consisted of a short introduction of all participants, followed by talks on the plans and achievements of the German Dimark partner University of Konstanz. These contributions involved a short introduction by Dietmar Straile about the dynamics of chla and cyanobacteria in Lake Constance and the Bavarian Dimark lakes, by David Schleheck on the role of whitening events, and by Minyan Zhao on our achivements/plans regarding phytoplankton (chla) and whitening remote sensing. These talks were followed by a general discussion on achievements and future plans. One remark was on the potential for improvement on year-round estimates of chlorophyll estimations as up to now winter chla concentration seem to be overestimated.*
Final remarks/conclusions	Stakeholders were generally impressed by the achievements made (they especially were impressed by the Alplakes website), and a further exchange regarding e.g. data analyses was agreed on.
Communication activities *(update institutional website and list no. of news, posts, post-workshop follow-ups (no. of "thank-you" emails, distributions of additional workshop materials etc.))*	*There were follow-up emails regarding previous remote sensing activities in which the LfU was involved.*
Annexes *(photos, list of participants, presentations, questionnaires etc.)*	*Add to folder WP3 > A 3_1 Co-creation participative workshops >Reports* https://nibo365.sharepoint.com/:f:/r/sites/ext10_GEN-DiMark/Shared%20Documents/WP-3/A%203_1%20Co-creation%20participative%20workshops/Reports?csf=1&web=1&e=Ck4bEG

National Dimark meeting

2025-07-02

8.00 – 10.00 am

Interreg Co-funded by the European Union
Alpine Space

DiMark

Zoom link:

https://uni-konstanz-de.zoom.us/j/69812384238?pwd=EX0xeXEAMvrMG2kOVslGCSRVtcIix7.1
Meeting-ID: 698 1238 4238
Kenncode: 125491

Programme:

8.00 Short Introduction of participants

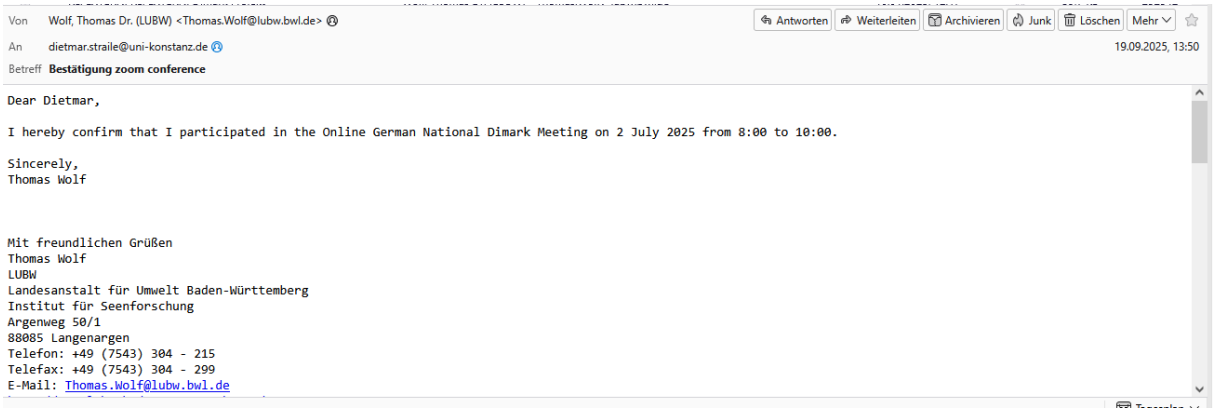
8:15 Plans and achievements of German Dimark Partner, University of Konstanz

8:45 Suggestions and wishes of stakeholders

9:15 Discussion

Confirmation emails regarding participation on online German Dimark stakeholder meeting on 2 July 2025

Dr. Thomas Wolf, LUBW



Von Wolf, Thomas Dr. (LUBW) <Thomas.Wolf@lubw.bwl.de>
Antworten | Weiterleiten | Archivieren | Junk | Löschen | Mehr
An dietmar.straile@uni-konstanz.de
19.09.2025, 13:50
Betreff **Bestätigung zoom conference**

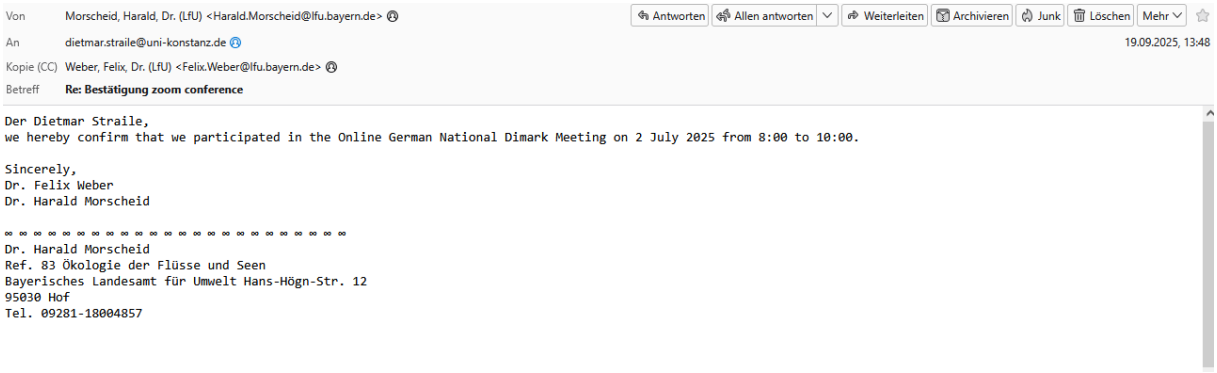
Dear Dietmar,

I hereby confirm that I participated in the Online German National Dimark Meeting on 2 July 2025 from 8:00 to 10:00.

Sincerely,
Thomas Wolf

Mit freundlichen Grüßen
Thomas Wolf
LUBW
Landesanstalt für Umwelt Baden-Württemberg
Institut für Seenforschung
Argenweg 50/1
88085 Langenargen
Telefon: +49 (7543) 304 - 215
Telefax: +49 (7543) 304 - 299
E-Mail: Thomas.Wolf@lubw.bwl.de

Dr. Harald Morscheid, Dr. Felix Weber, LfU



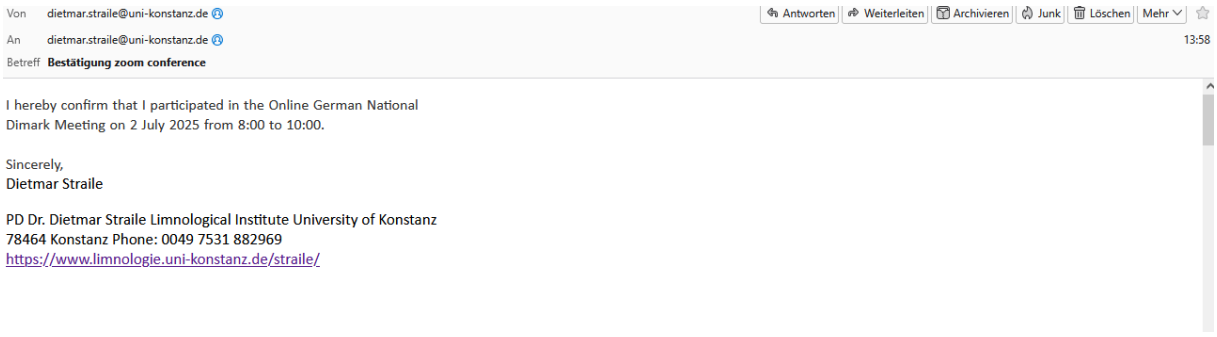
Von Morscheid, Harald, Dr. (LfU) <Harald.Morscheid@lfu.bayern.de>
Antworten | Allen antworten | Weiterleiten | Archivieren | Junk | Löschen | Mehr
An dietmar.straile@uni-konstanz.de
19.09.2025, 13:48
Kopie (CC) Weber, Felix, Dr. (LfU) <Felix.Weber@lfu.bayern.de>
Betreff **Re: Bestätigung zoom conference**

Der Dietmar Straile,
we hereby confirm that we participated in the Online German National Dimark Meeting on 2 July 2025 from 8:00 to 10:00.

Sincerely,
Dr. Felix Weber
Dr. Harald Morscheid

∞ ∞
Dr. Harald Morscheid
Ref. 83 Ökologie der Flüsse und Seen
Bayerisches Landesamt für Umwelt Hans-Högn-Str. 12
95030 Hof
Tel. 09281-18004857

Dr. Dietmar Straile, UKON



Von dietmar.straile@uni-konstanz.de
Antworten | Weiterleiten | Archivieren | Junk | Löschen | Mehr
An dietmar.straile@uni-konstanz.de
13:58
Betreff **Bestätigung zoom conference**

I hereby confirm that I participated in the Online German National Dimark Meeting on 2 July 2025 from 8:00 to 10:00.

Sincerely,
Dietmar Straile

PD Dr. Dietmar Straile Limnological Institute University of Konstanz
78464 Konstanz Phone: 0049 7531 882969
https://www.limnologie.uni-konstanz.de/straile/

Dr. David Schleheck, UKON


Von David Schleheck
An dietmar.straile@uni-konstanz.de
Betreff Re: te
Dietmar Straile <dietmar.straile@uni-konstanz.de>
Antworten Weiterleiten Archivieren Junk Löschen Mehr
13:36

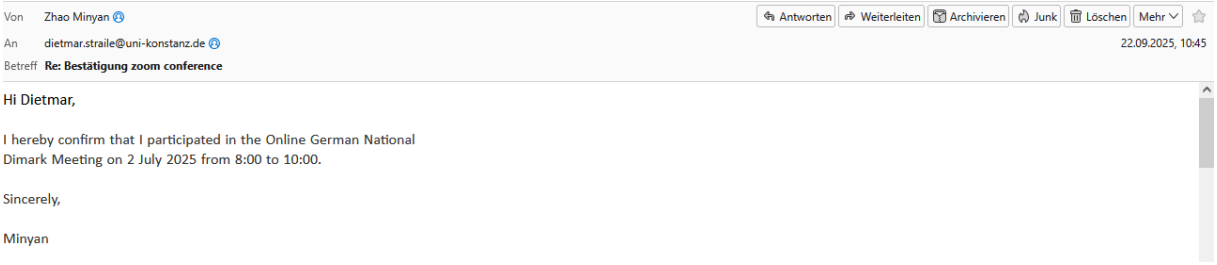
Dear Dietmar,

herewith I confirm that I've participated in the national DiMark online-meeting on 2. Juli 2025

and that I gave a presentation on what we are contributing in respect to DiMark, plankton and particularly calcite sampling in Lake Constance.

Best regards
David Schleheck

Dr. Minyan Zhao, UKON


Von Zhao Minyan
An dietmar.straile@uni-konstanz.de
Betreff **Re: Bestätigung zoom conference**
Antworten Weiterleiten Archivieren Junk Löschen Mehr
22.09.2025, 10:45

Hi Dietmar,

I hereby confirm that I participated in the Online German National Dimark Meeting on 2 July 2025 from 8:00 to 10:00.

Sincerely,

Minyan

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Appendix 6: Local co-creation workshop report – France

Minutes of the DiMark meeting held on 23 May 2025 in Thonon-les-Bains

The purpose of the meeting was to understand how the project is perceived by the three project observers (ASL, CIPEL, Cluster Eau) and to gather their expectations.

Attendees:
Orlane Anneville (INRAE)
Stéphan Jacquet (INRAE)
Frédéric Soulignac (INRAE)
Jean-Marcel Dorioz (AFL)
Hugo Basquin (CIPEL)
Laura Garaud (ClusterEau)

Open discussion

- Current concerns are mainly related to the fragility of the ecosystem and the impact of the decline in phosphorus (e.g. is there enough phosphorus to support secondary production?) and the presence of numerous factors that could weaken the ecosystem (micropollutants, quagga mussels, etc.).

- The two ongoing INTERREG projects (DiMark and ALGA) will provide a better understanding of the dynamics of blooms, the development of methods to monitor their appearance and evolution, and finally a prediction tool that will enable their harmfulness to be better assessed (for example, it would be interesting to produce a map of Lake Geneva showing the predicted impact according to uses).

- Reminder that Lake Geneva is a multi-use lake and that the concept of "quality" may differ depending on the use (e.g. fishing vs swimming). Following efforts to oligotrophise the lake, we are now facing with the idea of a 'too clean lake'. The lake creates social bonds and encourages interactions between humans and nature.

- This raises important questions such as: 'What do we want for our lake tomorrow?' However, we assume that all answers imply that the ecosystem is functioning properly.

Summary of expectations by observers:

<u>ASL:</u>

• Vision for 2050: The ASL wishes to take a long-term view (to 2050) in order to anticipate changes in Lake Geneva. There is currently no comprehensive summary document on the state of Lake Geneva, as knowledge is too fragmented.

• Interest in spatialisation of data: Satellite images are seen as a useful tool for providing a comprehensive and geographically detailed overview.

• Prevention of algal blooms: Blooms seem to have taken a back seat; the Dimark project would bring this phenomenon back into the spotlight.

• Ecological approach: The approach based on ecological niches and environmental variables is in line with the ASL's expectations.

• Awareness raising: Desire to raise awareness that blooms can still occur and that it is possible to improve the lake's 'resilience'.

- Preparing for population growth: Importance of preparing for the effects of increase in population density in the Lake Geneva watershed.

ClusterEau:

• Early warning tool: Need for an operational bloom warning system for Cluster members.

• Collaboration with ESA: The Cluster benefits from a partnership with ESA via the ESALab programme and Grégory Giuliani from UNIGE. One person is dedicated to interpreting satellite images. Feedback expected on Dimark: ESA is interested in feedback from the Dimark project.

- Promotion of results: Need for simplified results so that they can be disseminated to members, particularly local authorities.

- Awareness raising: Demonstrate the use of satellite images and turn them into an educational tool.

CIPEL:

• The DiMArk project will provide a scientific contribution: The project represents an opportunity to enrich scientific knowledge about Lake Geneva.

• The DiMArk project will provide complementary prevention tool: Interest in a tool that can anticipate blooms.

• Through its institutional role, CIPEL can play a role in raising awareness among elected officials and local authorities.

Communication and dissemination prospects

- Outreach tools are needed: Observers are willing to relay the results of the Dimark project, provided they have access to pre-prepared outreach content that they can adapt.

- Raising awareness among the general public and elected officials: Proposal for a page dedicated to blooms in the CCPEVA (Thonon Agglo) newsletter to provide information.

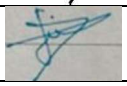
- Presenting blooms as a 'lake disease' could have a motivating effect.

- ALGA and blooms as a gateway: Monitoring blooms is seen as a strategic entry point for addressing other lake issues. Lake Geneva could serve as a pilot site for extending these methods to other lakes via the Dimark project.

Next: Observers will complete the DiMark questionnaire on line (https://forms.gle/3vz99hydAuf6uQsC7)

1st DiMark co-creation workshop, INRAE-Thonon-les-Bains, 23.5.2025

Attendance list with signatures

	Name	Organisation / Company	Signature	GDPR
1	Anneville Orlane	INRAE		YES
2	Jacquet Stéphan	INRAE		YES
3	Soulignac Frédéric	INRAE		YES
4	Basquin Hugo	CIPEL		YES
5	Garaud Laura	ClusterEau		YES
6	Dorioz Jean-Marcel	ASL		YES
7				*
8				*
9				*
10				*
11				*
12				*
13				*
14				*
15				*

This project is co-funded by the European Union through the Interreg Alpine Space programme.


Interreg
Co-funded by the European Union
Alpine Space
DiMark
AIGA
WORK PACKAGE 2
Stakeholder meeting
May, 23, 2025

Interreg Alpine Space

Co-funded by the European Union

DiMark

Appendix 7: Local co-creation workshop report – Italy

Interreg Alpine Space

Co-funded by the European Union

DiMark

Local co-creation workshop report

D 3.1.1

Name of Author(s)	Luca Bonacina, Nico Salmaso, Leonardo Cerasino and Adriano Boscaini
Department/Organization/Institution	FEM
Date of the document	05-27-2025
Version	1
Project	DiMark

Name	Cammini LTER – Alpine Space DiMark Giornata di divulgazione scientifica sullo stato di salute del Lago di Garda
Date and time	27/05/2025 9:00-15:00
Location/Venue	Peschiera del Garda (VR), Italy
Organiser(s)	FEM, ARPAV, CNR IRSA
No. of participants	~50
Breakdown of participating organisations per target groups *(e.g., 5 SME's, 7 research institutions, etc.)*	• 2 Research Institutes (FEM, CNR) • 2 Universities (Verona and Pavia) • 5 Regional and Provincial Authorities (APPA, ARPAV, Consiglio di Bacino, Regione Veneto, Provincia di Trento) • 2 Local Institutes (Proloco Rivalta, Comune di Peschiera) • 6 Other Groups (Garda Green Club, Lega Navale Peschiera, APS Il Carpino, AGS Peschiera, PAT, Gardesana Servizi) • 1 Journalist
Names of participating organisations	• Fondazione San Michele All'Adige (FEM) (Centro Ricerca e Innovazione + Centro di trasferimento tecnologico) • Agenzia regionale di protezione ambientale del Veneto (ARPAV) • Centro nazionale di Ricerca (CNR)

Summary	Several topics were discussed according to the agenda: • Satellite observations and the DIMARK Alpine Space project • Monitoring of Lake Garda in accordance with the Water Framework Directive (WFD) • Innovative approaches in research activities on Lake Garda • Water flow modelling in Lake Garda • Climate change and eutrophication in Lake Garda • Alien species in Lake Garda • Joint Water Management Transition Moreover, a short field trip was conducted in the afternoon to observe some macrophytes and macroinvertebrate specimens.
Final remarks/conclusions	The meeting provided an opportunity to present ongoing research and monitoring activities on Lake Garda to stakeholders and the general public.
Communication activities *(update institutional website and list no. of news, posts, post-workshop follow-ups (no. of "thank-you" emails, distributions of additional workshop materials etc.))*	• LTER Italy: https://www.lteritalia.it/?p=6494 • ARPAV: https://www.facebook.com/arpaveneto/posts/-un-giorno-sul-garda-tra-scienza-natura-e-tante-domande-da-faretutto-quello-che-/1089415329885624/ • FEM: https://cri.fmach.it/Il-Centro/Comunicazione/Eventi/Cammini-LTER-Alpine-Space-DiMark Newspaper articles: • L'Adige: https://www.ladige.it/territori/riva-arco/2025/06/02/lago-di-garda-sempre-piu-caldo-i-pesci-ne-soffrono-un-grado-in-piu-tra-1991-e-2025-1.4090244 • L'Arena: https://www.larena.it/territorio-veronese/garda-baldo/peschiera-convegno-futuro-lago-garda-1.12693525
Annexes *(photos, list of participants, presentations, questionnaires etc.)*	*Add to folder WP3 > A 3_1 Co-creation participative workshops > Reports* List of participants, questionnaires, pictures and agenda uploaded on Teams

Interreg Co-funded by the European Union
Alpine Space
DiMark

LTER-IT Italian Long-term Ecosystem Research Network

27 maggio 2025 - Peschiera del Garda

Cammini LTER – Alpine Space DiMark

Giornata di divulgazione scientifica sullo stato di salute del Lago di Garda

Mattina: Presentazioni sulle ricerche condotte sul Garda

Pranzo: offerto; **Pomeriggio:** Seminari itineranti sul Garda

Ritrovo: 8:45 - Centro Civico "F. Gandini", via Mainetti 1

Evento aperto alla cittadinanza e alle istituzioni pubbliche e private

Preiscrizioni obbligatorie entro il 22/05 al link:

https://forms.gle/kNDyBcKNGmkg6duu7

PROGRAMMA

La mattina è dedicata alle ricerche scientifiche a lungo termine condotte sul Lago di Garda, con presentazioni sull'evoluzione dello stato trofico del lago, sugli effetti dei cambiamenti climatici e sull'impatto antropico. Seguirà un pranzo buffet offerto dall'organizzazione.

Nello spirito dei Cammini LTER-Italia, il pomeriggio è dedicato a seminari itineranti sul lago con momenti di confronto tra ricercatori e cittadini.

Mattino - Presentazioni

	Saluti Istituzionali e Apertura dei Lavori	
8:45-9:15	Saluti istituzionali	
9:15-9:30	Introduzione all'evento congiunto Cammini LTER - DiMark	Nico Salmaso *(FEM, S. Michele all'Adige)*
	Interventi dal campo della ricerca e monitoraggio ambientale	
9:30-9:50	Osservazioni satellitari e progetto DiMark, le scale spaziali e temporali, e rilevanza gestionale	Mariano Bresciani *(CNR-IREA, Milano)*
9:50-10:10	WFD (Direttiva 2000/60): Attività di monitoraggio per la determinazione dello stato dell'ambiente del lago di Garda e potenziali contributi dal progetto DiMark	Chiara Zampieri *(ARPAV, Verona)*
10:10-10:30	Sviluppo della ricerca e approcci innovativi nello studio del Lago di Garda negli ultimi 20 anni a differenti scale temporali e biologiche	Nico Salmaso *(FEM, S. Michele all'Adige)*
10:30-10:50	Coffee Break	
10:50-11:05	Il viaggio dell'acqua nel Garda: correnti, qualità delle acque e studi di modellistica 3D e telerilevamento	Marina Amadori *(CNR-IREA, Milano)*
11:05-11:20	Cambiamento climatico ed eutrofizzazione: Come saranno i grandi laghi subalpini nei prossimi 100 anni?	Andrea Fenocchi *(Università di Pavia)*
11:20-11:35	Specie aliene nel Lago di Garda	Francesca Ciutti *(FEM, S. Michele all'Adige)*
11:35-11:50	Joint Water Management Transition: Attività trasversali in EUSALP	Gian Antonio Battistel *(FEM, S. Michele all'Adige – EUSALP AG6)*
	Spazio aperto al pubblico e alle domande	
11:50-12:45	Discussione e conclusioni – Panoramica sul programma del pomeriggio	
12:45	Pausa Pranzo	

Le presentazioni scientifiche e la pausa pranzo si terranno presso il Centro Comunale Polifunzionale "F. Gandini", in via

Suor Maria Laura Mainetti, 37019 Peschiera del Garda. La sede è accessibile mediante ascensore ai piani.

Pomeriggio - Seminari itineranti

I seminari itineranti sul litorale del Garda sono incentrati sul ruolo e la conservazione della fascia vegetazionale e sull' impatto delle specie invasive

I partecipanti avranno l'opportunità di interagire e dialogare direttamente con i ricercatori e di osservare sul campo le macrofite e gli organismi invasivi oggetto di studio.

Vegetazione lacustre:

Rossano Bolpagni (Università di Parma)
Mariano Bresciani (CNR-IREA, Milano)
Chiara Zampieri, Federica Giacomazzi (ARPAV VENETO)

Specie aliene invasive:

Adriano Boscaini (FEM, S. Michele all'Adige)
Cristina Cappelletti (FEM, S. Michele all'Adige)
Francesca Ciutti (FEM, S. Michele all'Adige)

I seminari itineranti si terranno sul litorale del Lago di Garda. Informazioni dettagliate sulle visite del pomeriggio saranno fornite prima della pausa pranzo. Si consiglia di indossare scarpe sportive e di portare con sé un ombrello e indumenti adeguati alle previsioni meteorologiche. In caso di forte maltempo, aggiornamenti saranno forniti in sede.

INFORMAZIONI UTILI

L'evento è organizzato congiuntamente nell'ambito dell'iniziativa *Cammini LTER-Italia 2025* (Il Cammino del Po. Il fiume che connette) e del *Progetto DiMark*, con il supporto del **Comune di Peschiera del Garda** e della **Comunità del Garda**.

I ***Cammini LTER-Italia*** (Rete italiana di ricerca ecologica a lungo termine) sono un'iniziativa di comunicazione informale della scienza realizzata dalle ricercatrici e dai ricercatori LTER-Italia. L'edizione 2025 è focalizzata sulla divulgazione dei risultati delle ricerche condotte in gran parte dei territori dai quali il fiume raccoglie le sue acque, dall'origine fino alla foce, coinvolgendo oltre 20 siti della rete che rappresentano la varietà di habitat ed ecosistemi nel Bacino Padano, tra cui la stazione LTER "Lago di Garda".

Il ***Progetto DiMark*** si propone di approfondire le tematiche legate alla qualità dei laghi dell'intero areale Alpino, con particolare attenzione all'utilizzo dei sistemi di telerilevamento per la valutazione della qualità delle acque superficiali. Il progetto è finanziato dal programma INTERREG Alpine Space, e vede la partecipazione di 11 istituzioni in rappresentanza di 6 stati.

Le due iniziative di divulgazione sono sostenute da ricercatori afferenti alla Fondazione Edmund Mach di S. Michele all'Adige (**FEM**) e dall'Istituto per il Rilevamento Elettromagnetico dell'Ambiente di Milano (**CNR-IREA**), e dai biologi dell'Agenzia Regionale per la Prevenzione e Protezione Ambientale del Veneto (**ARPAV**, sede di Verona).

L'evento è libero e gratuito previa iscrizione fino ad un massimo di 100 persone.

Organizzazione dell'evento

Comune di Peschiera del Garda	https://www.comune.peschieradelgarda.vr.it/it
Comunità del Garda	https://www.comunitadelgarda.it/
Fondazione Edmund Mach di S. Michele all'Adige	https://fmach.it/
CNR IREA, Milano	http://www.irea.cnr.it/
ARPAV sede di Verona	https://www.arpa.veneto.it/territorio/verona

Network di ricerca coinvolti

Rete LTER	https://www.lteritalia.it
LTER Stazione "Lago di Garda"	https://www.lteritalia.it/wordpress/?page_id=1528
Cammini LTER	https://www.lteritalia.it/wordpress/wp-content/uploads/brochure-Cammini_digital.pdf
Progetto INTERREG Alpine Space DiMark	https://www.alpine-space.eu/project/dimark/

Project greening

Il programma Alpine Space e la rete LTER promuovono l'adozione di pratiche eco-compatibili per tutte le attività quotidiane, compresa l'organizzazione e partecipazione a eventi. I partecipanti ai progetti e alle iniziative sono incoraggiati ad applicare principi di efficienza energetica e sostenibilità alle loro attività, compreso l'utilizzo di modalità di viaggio sostenibili. Informazioni sui trasporti pubblici da utilizzare per raggiungere Peschiera del Garda e sugli alloggi sono disponibili all'indirizzo web https://www.tourismpeschiera.it/.

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Per informazioni: nico.salmaso@fmach.it
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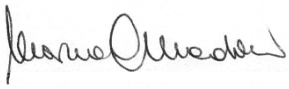
1st DiMark co-creation workshop, Peschiera del Garda, 27.5.2025

Attendance list with signatures

	Name	Organisation / Company	Signature	GDPR
1	NICO SALMASO	FEM		*
2	ADRIANO BOSCAINI	FEM		*
3	LEONARDO GERASINO	FEM		*
4	LUCA BONACINA	FEM		*
5				*
6				*
7				*
8				*
9				*
10				*
11				*
12				*
13				*
14				*
15				*

1st DiMark co-creation workshop, Peschiera del Garda, 27.5.2025

Attendance list with signatures

	Name	Organisation / Company	Signature	GDPR
1	Mariano Bresciani	CNR-IREA		*
2	Alessandro Oggioni	CNR-IREA		*
3	Marina Amadori	CNR-IREA		*
4				*
5				*
6				*
7				*
8				*
9				*
10				*
11				*
12				*
13				*

1st DiMark co-creation workshop, Peschiera del Garda, 27.5.2025

Attendance list with signatures

	Name	Organisation / Company	Signature	GDPR
1	CHIARA ZAMPIERI	ARPAV	Chiara Zampieri	*
2	SIMONA DEZOLT SAPPADINA	ARPAV	Simona Dezolt Sappadina	*
3	GIAMPAOLO FUSARO	ARPAV	Giampaolo Fusaro	*
4	GIADA ZAVATTIN	ARPAV	Giada Zavattin	*
5	ELENA CASTELLANI	ARPAV	Elena Castellani	*
6	FRANZINI GIORGIO	ARPAV		*
7	OTTORINO PIAZZI	ARPAV		*
8	PATRIZIA RAMO	LNI Peschiera		*
9	ALESSANDRO FARINELLI	UNIVERSITÀ VERONA	Alessandro Farinelli	*
10	FRANCESCA PREDICATORI	ARPAV		*
11				*
12				*
13				*
14				*
15				*

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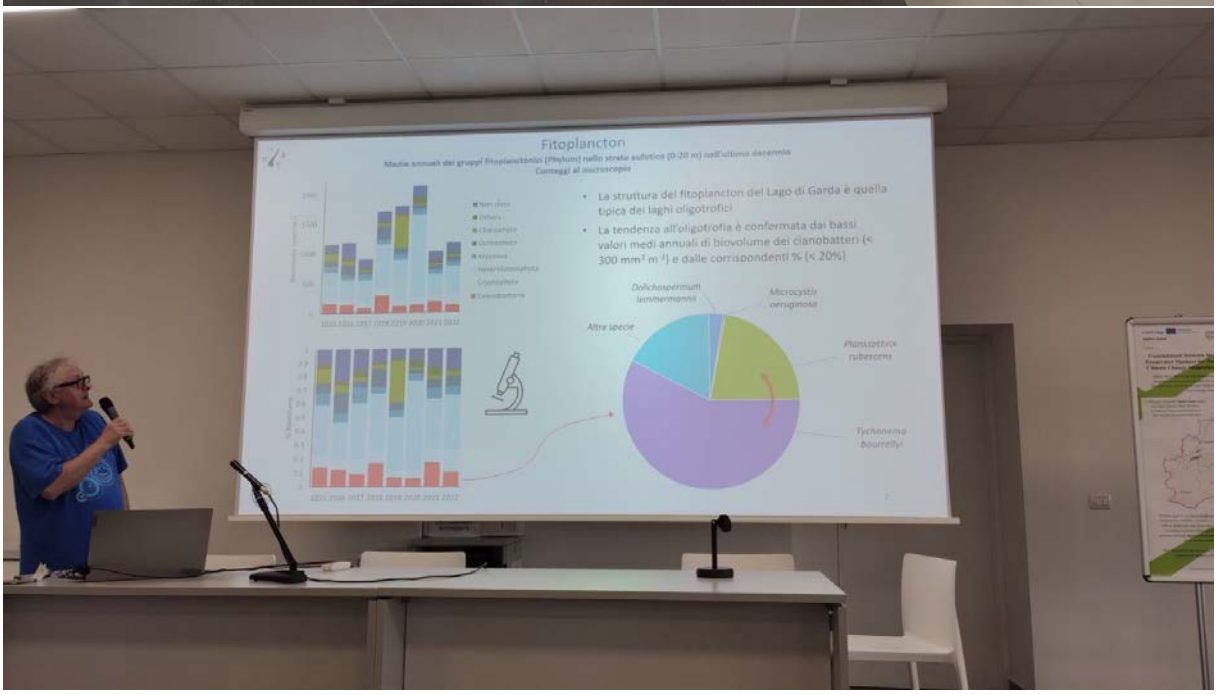
1st DiMark co-creation workshop, Peschiera del Garda, 27.5.2025

Attendance list with signatures

	Name	Organisation / Company	Signature	GDPR
1	LUCA DARUGNA	ARPAV		* YES
2	MARTA MORANDIOL	ARPAV		* YES
3	FEDERICA SALVIO	ARPAV		* YES
4	Andrea Bertolo	ARPAV		* YES
5	MANUELA CASON	ARPAV		* YES
6	UGO PRETTO	ARPAV		* YES
7	FRANCESCA RAGUSA	ARPAV		* YES
8				*
9				*
10				*
11				*
12				*
13				*
14				*
15				*


arpav
FITOPLANCTON
Il fitoplancton è costituito da organismi vegetali, alghe, capaci di fotosintesi, unicellulari o coloniali, microscopici con scarsa capacità di movimento che vivono in sospensione nelle acque; costituisce un importante anello della catena alimentare delle acque dolci.
Comprende numerose specie che si differenziano per dimensione, morfologia, fisiologia ed ecologia
I campioni vengono prelevati in due stazioni in corrispondenza del punto di massima profondità dei due bacini
La frequenza dei campionamenti è mensile
Trentino
Lombardia
Veneto
Bacino occidentale
Bacino orientale
Il campionamento del fitoplancton viene effettuato nella zona eufotica (20m) con un campionatore automatico
Alpine Space


Fitoplancton
Medie annuali dei gruppi fitoplanctonici (Phylum) nello strato eufotico (0-20 m) nell'ultimo decennio
Conteggi al microscopio
• La struttura del fitoplancton del Lago di Garda è quella tipica dei laghi oligotrofici
• La tendenza all'oligotrofia è confermata dai bassi valori medi annuali di biovolume dei cianobatteri (< 300 mm³ m⁻³) e dalle corrispondenti % (< 20%)
Dolichospermum lemmermannii
Microcystis aeruginosa
Altre specie
Planktothrix rubescens
Tychonema bourrellyi


L'ARBOMAIA
SUZUKI
40

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Appendix 8: Local co-creation workshop report – Slovenia

Local co-creation workshop report

D 3.1.1

Name of Author(s)	Cene Čibej, Tina Eleršek
Department/Organization/Institution	NIB
Date of the document	05-28-2025
Version	1
Project	DiMark

Name	*DiMark 1st national workshop with stakeholders (in-person)*
Date and time	*27.5.2025, 10:00 – 12:00*
Location/Venue	*National Institute of biology, Večna pot 121, Ljubljana*
Organiser(s)	*National Institute of biology*
No. of participants	*7*
Breakdown of participating organisations per target groups *(e.g., 5 SME's, 7 research institutions, etc.)*	*1x SME* *1x Government agency*
Names of participating organisations	*Company for applied ecology (LIMNOS)* *Slovenian Water Agency (DRSV)*

Summary	*Workshop began with a presentation from a NIB representative titled "Observing Cyanobacteria with Satellites," which introduced the fundamentals of remote sensing technologies - such as Sentinel-2 and Sentinel-3 - and discussed both the advantages and limitations of detecting cyanobacteria in freshwaters.* *This was followed by a demonstration of the Alplakes platform (Alplakes), which provides accurate, real-time lake information and predictions across the European Alps. Observers were introduced to key lakes already identified for DiMark, as well as additional ones proposed by project partners.* *During the open discussion, one participant suggested new potential observers from relevant target groups. These potential observers were contacted after the event with an invitation to join the DiMark Network.* *After a short lunch break, stakeholders completed the User Needs & Expectations Survey, providing feedback to help guide the development of visualisation tool and risk prevention model.*
Final remarks/conclusions	*The workshop offered stakeholders a valuable opportunity to learn about satellite-based monitoring of cyanobacteria and freshwater markers, and to contribute to the expansion of the DiMark Network. Participant feedback and suggestions -especially regarding potential new observers - will help guide future activities and strengthen collaboration across the network.*
Communication activities *(update institutional website and list no. of news, posts, post-workshop follow-ups (no. of "thank-you" emails, distributions of additional workshop materials etc.))*	***Post-workshop follow ups:*** *Workshop materials (link to online questionnaire) were distributed via email to other interested observers* *Potential new DiMark observers, suggested during the discussion, were contacted individually and invited to join the network.* ***Social media posts:*** ***https://www.facebook.com/share/p/16hPLiBtKz/***
Annexes *(photos, list of participants, presentations, questionnaires etc.)*	*Add to folder WP3 > A 3_1 Co-creation participative workshops >Reports* https://nibo365.sharepoint.com/:f:/r/sites/ext10_GEN-DiMark/Shared%20Documents/WP-3/A%203_1%20Co-creation%20participative%20workshops/Reports?csf=1&web=1&e=Ck4bEG

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1. DiMark delavnica z deležniki, 27.5.2025

Lista prisotnosti

	Ime in priimek	Organizacija	Kratica	Podpis
1	Tina Eleršek	Nacionalni Inštitut za Biologijo	NIB	
2	Cene Čibej	Nacionalni Inštitut za Biologijo	NIB	
3	Nika Tivadar	Nacionalni Inštitut za Biologijo	NIB	
4	Liza Trebše	Agencija Republike Slovenije za okolje	ARSO	
5	Aleksandra Krivograd Klemenčič	Agencija Republike Slovenije za okolje	ARSO	
6	Alenka Mubi Zalaznik	Limnos Podjetje za aplikativno ekologijo	LIMNOS	
7	Petra Štern	Direkcija RS za vode	DRSV	


Kako je mogoče videti cianobakterije pod mikroskopom in hkrati tudi iz vesolja?
Sentinel – 2
- 13 različnih spektralnih kanalov:
  - 3 kanali za zaznavanje vidne svetlobe
  - 7 kanalov za zaznavanje infrardeče svetlobe
  - 3 kanali za zaznavanje šumov (aerosolov, oblakov)
- posnetki izbranega območja vsakih **5 dni**
- namenjen predvsem za optično slikanje **kopnega**
- pomanjkljivost: uporabnost v primeru **motenj v atmosferi** (oblačnost, meglice, sence) je vprašljiva
Sentinel - 3
- 21 različnih spektralnih kanalov
- posnetki izbranega območja **vsak dan**
- namenjen predvsem za optično slikanje **oceanov** in **kopnega**
- pomanjkljivost: uporabnost v primeru **motenj v atmosferi** (oblačnost, meglice, sence) je vprašljiva
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