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Baltic Sea Maritime Spatial Planning for Sustainable Ecosystem Services

Baltic Explorer - Collaborative GIS approach to new interactive MSP

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Science for a better future of the Baltic Sea region

Collaborative GIS for MSP

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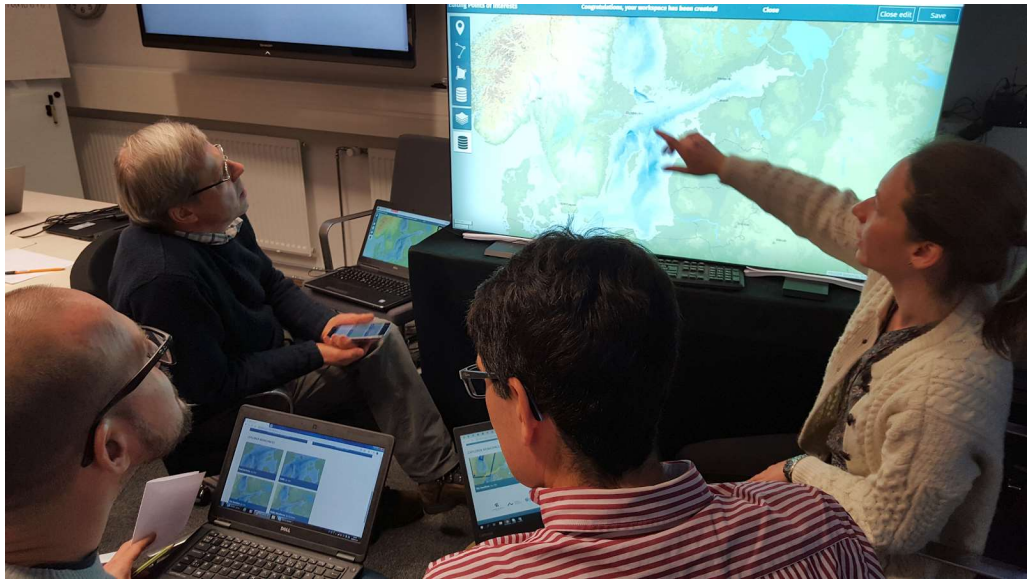

- Paper maps on table
- Shared online map workspace on multiple devices

Concept & Architecture

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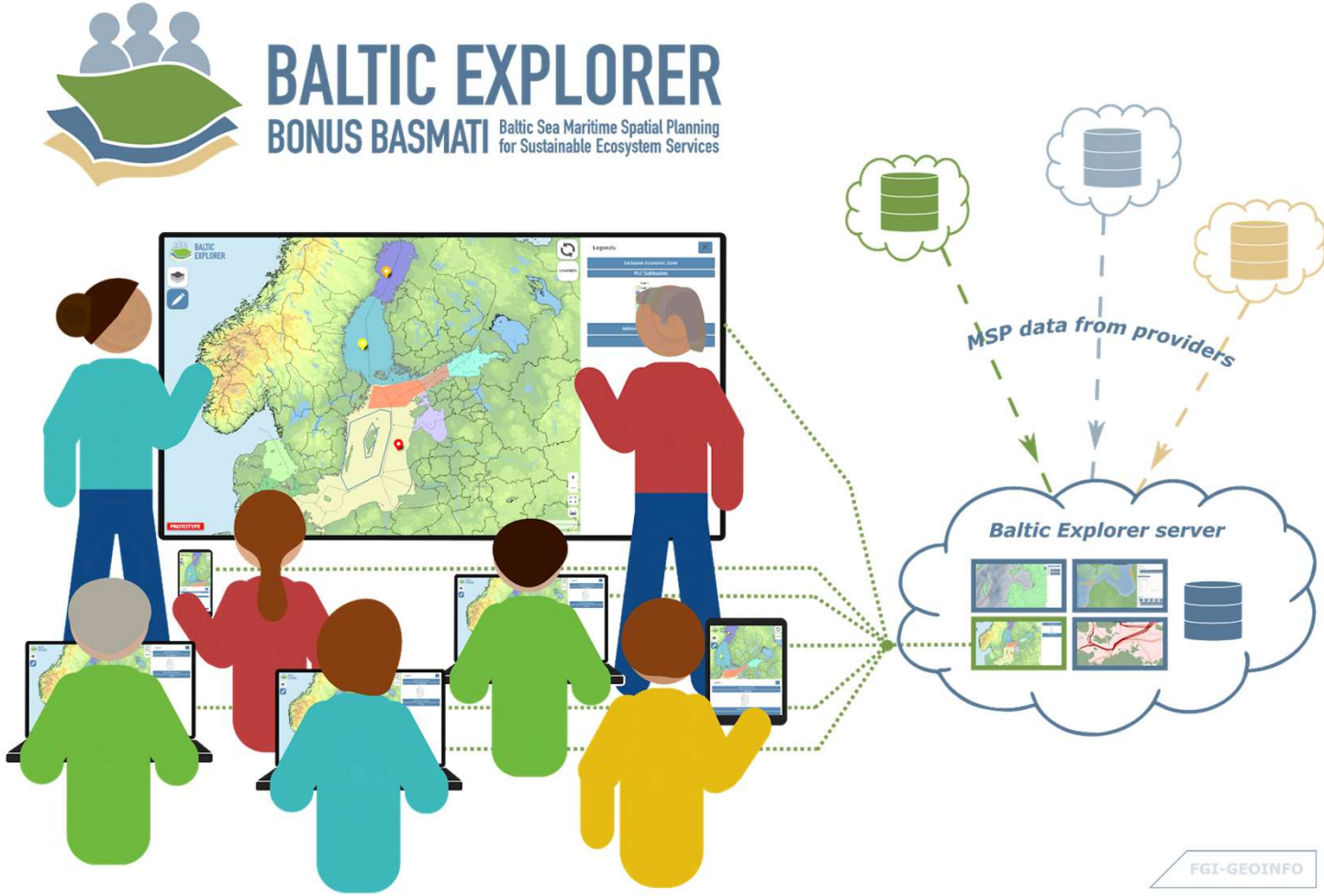

Research aims

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- How different kind of GIS tools can effectively support and facilitate collaboration in MSP workshops?
- What challenges are faced when using spatial analysis tools in MSP-workshops and can additional support from other tools support their use?

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- Develop a fully functional, effective collaborative GIS solution for MSP-workshops

Baltic Explorer key features

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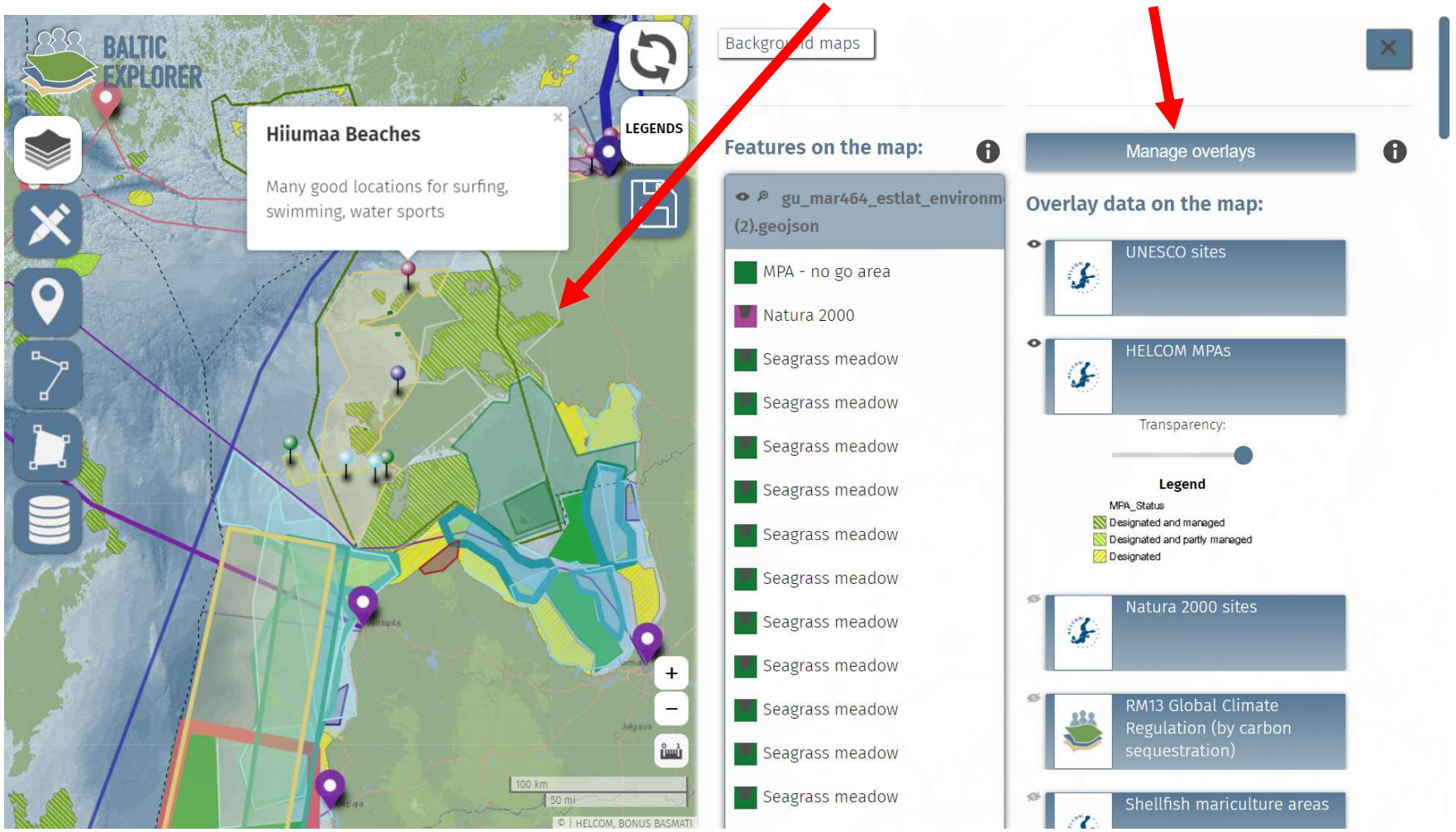
- Multi-user map-based workspaces with simultaneous access from multiple devices
- Designed for novice GIS users
- Device independent
  - Designed for both mouse and touch screen use
  - Designed for screen sizes from mobile phones to large touch screen devices
- Access from web-browser
  - No installation for workshop participants

Key functionalities

View spatial MSP-datasets from various sources on the map easily



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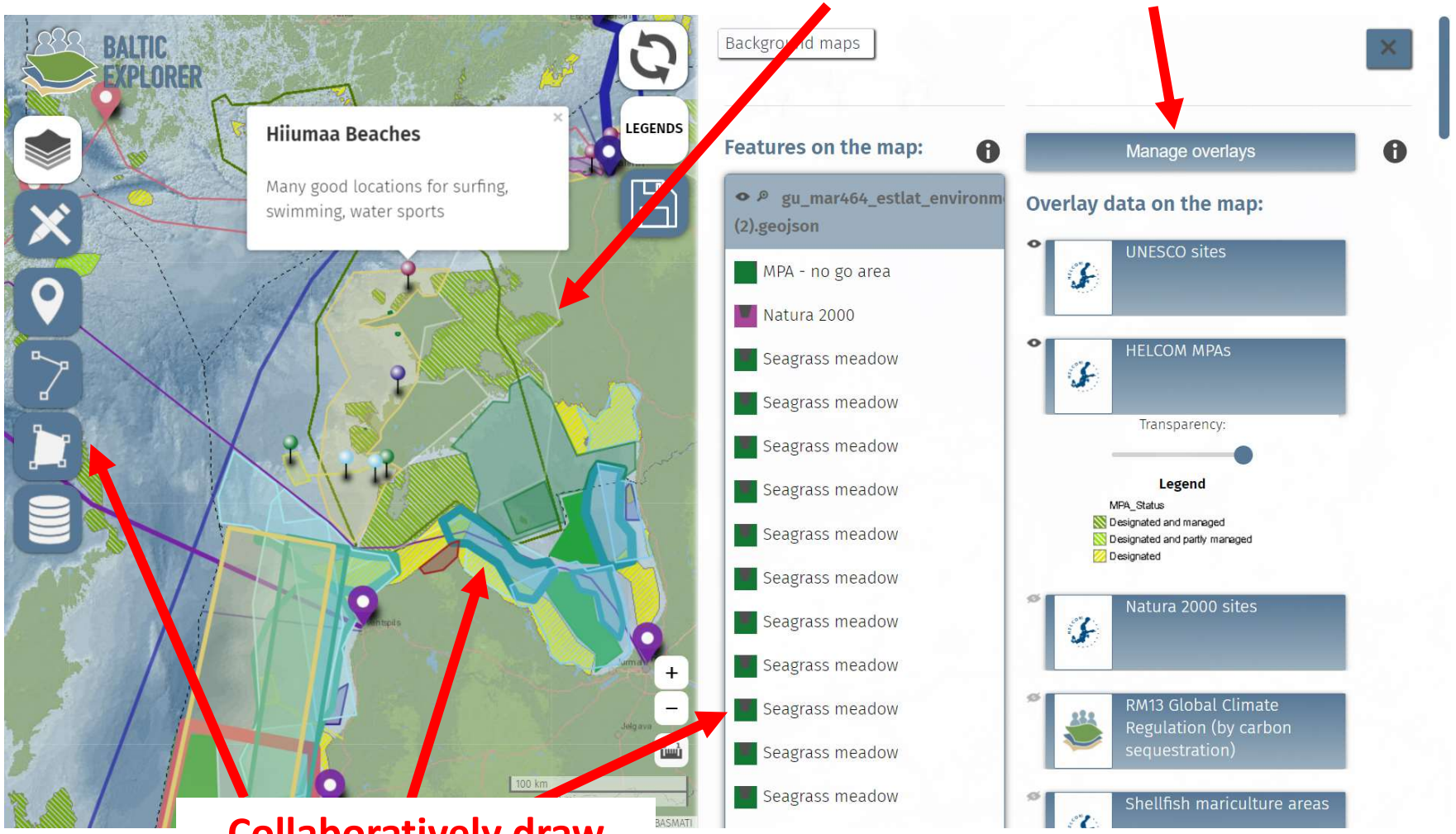

Collaboratively draw and edit map features

Key functionalities

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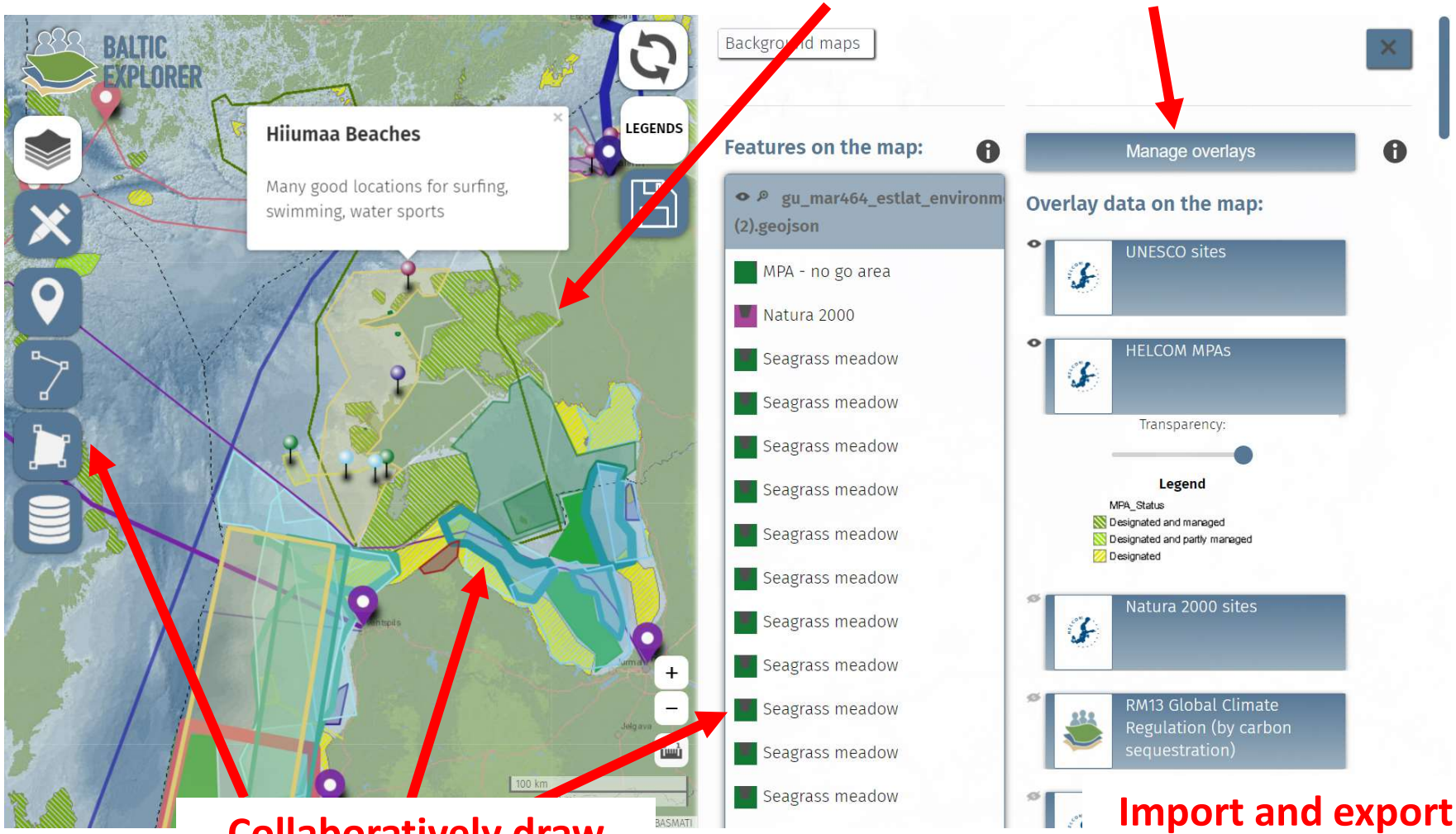

Collaboratively draw and edit map features

Import and export your map features

Demonstrations and evaluation

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Total of six use cases in four countries (Finland, Sweden, Latvia, Denmark), including testing in MSP stakeholder meetings and online use of the tool because of the coronavirus pandemic.

Picture by:
Margarita Volosina

Evaluation results

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- The Baltic Explorer concept and tools was well received by participants in the user tests
  - Different to what planners and participants were used to
- Easy access to spatial data from multiple sources was considered the most important and helpful functionality
- Spatial analysis tools that rely on pre-determined models and data are challenging in MSP stakeholder workshops
  - Novice GIS users need to understand what they do and how to use them
  - Participants may not agree with models and data
- Baltic Explorer is also usable as an online tool, but would benefit from additional functionalities to support such use cases

Resources

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http://balticexplorer.eu

- **Overview:** http://bonusbasmati.eu/about-the-project/baltic-explorer/
- **Use concept film:** https://www.youtube.com/watch?v=daydYqgRjLQ
- **User Guide:** http://balticexplorer.eu/static/umap/BalticExplorerUserGuide.pdf
- **Source code:** https://github.com/FGI-GEOINFO/Baltic-Explorer
- **Project deliverables and scientific publications:** https://bonusbasmati.eu/results-material/

Scientific Publications

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- Rönneberg, M., Eliasen, S.Q., Kettunen, P., Koski, C., and J. Oksanen (2019). Designing Access Control of a Spatial Decision Support System for Collaborative Maritime Spatial Planning. In: Gartner, G. & Huang, H. (eds.), Adjunct Proceedings of the 15th International Conference on Location-Based Services, 271-276. https://doi.org/10.34726/lbs2019.28

- Rönneberg, M., Koski, C., Kettunen, P. and J. Oksanen (2020). Enhancing interaction in maritime spatial planning workshops through collaborative GIS. EuroCarto 2020, abstract accepted.

- Koski, C., Rönneberg, M., Kettunen, P., Eliasen, S.Q., Hansen H.S., and J. Oksanen (2020). Utility of Collaborative GIS for Maritime Spatial Planning – Design and Evaluation of Baltic Explorer. Transactions in GIS, under review.

- Koski, C., Rönneberg, M., Kettunen, P., Strake, S., Armoskaite, A., and J. Oksanen (2020). Integrating a spatial analysis tool into collaborative GIS for maritime spatial planning workshops. Special Issue "Cyberinfrastructure and Intelligent Spatial Decision Support Systems", Transactions in GIS, to be submitted.

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