Benefits of SeaDataNet implementation

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About LHEI

In total 40 employees:

administrative staff – 6,

Lab HCh – 14,

Lab HB – 11,

Lab ExpHB – 9.

Outsourcing IT agreement – 1 person

Lab of Hydrobiology

Lab of Experimental Hydrobiology

Lab of Hydrochemistry

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Marine monitoring

Tallinn Technical University research vessel SALME

Equipped with Rosette sampler, other sampling equipment needed.

Photo from TTU homepage

Latvian Navy ship VARONIS

All sampling equipment needed. Water samples for chemical analyses are taken by transparent plastic Nansen water samplers.

The State Environmental Service
Fishery control ship MARE

Sampling equipment needed.
Not suitable for deep station monitoring. Good for microplastic sampling.

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Marine monitoring

Chemical parameters

- NO_{23} NO_2 NH_4 N_{tot}
- PO_4 P_{tot}
- SiO_4
- O_2
- CHL A
- pH
- Me in Biota

Biological parameters

- Zooplankton
- Phytoplankton
- Zoobenthos

Physical parameters

- Temperature
- Conductivity/Salinity
- Turbidity

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Expanding the current marine monitoring program

Chemical parameters

- Organic pollutants in Biota
- Marine litter (microplastic)
- Biotesting – impact of toxic substances

Biological parameters

- Non-indigenous species

Biotope mapping

- Reefs
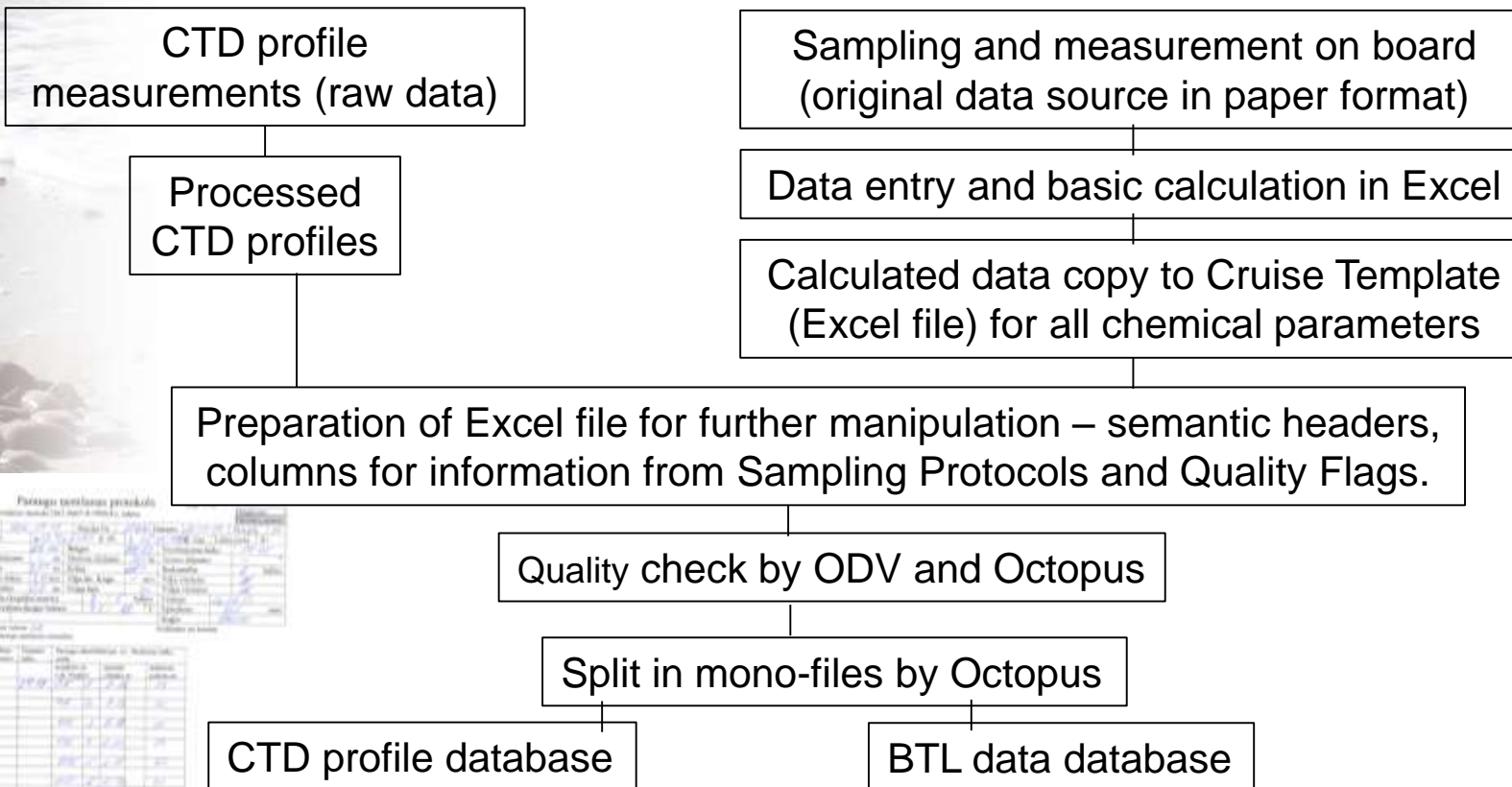- Sandbanks

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Data flow in LHEI

Physical parameters

CTD profile measurements (raw data)

Processed CTD profiles

Chemical parameters (PO4)

Sampling and measurement on board (original data source in paper format)

Data entry and basic calculation in Excel

Calculated data copy to Cruise Template (Excel file) for all chemical parameters

Preparation of Excel file for further manipulation – semantic headers, columns for information from Sampling Protocols and Quality Flags.

Quality check by ODV and Octopus

Split in mono-files by Octopus

CTD profile database

BTL data database

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Activity of LHEI

- EDMO - 23 data centres
- CDI – 4468 files (new entries in December)
  - CTD,
  - Bottle data,
  - CHL A,
  - Me in biota,
  - Me in sediments
- CSR – 205 Cruises (ongoing)
- EDMERP – 45 (new entries in December)
- EDMED – 18 (new entries in December)

- LHEI is involved in EMODnet CH and EMODnet DI

- LHEI provided information and tips about SDC for other data centres (Maritime administration of Latvia)

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Implementation of data QA

BENEFIT 1

- Data Quality checking by ODV pointed the urgency to tidy up database.
- LHEI accepted SDC Quality Flag system.
- Data format is similar for all data centres.
- LHEI experts use Ocean Data View for data exploration, analysis and visualization. In the future NEMO will be used

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Improvement of protocols for local (LHEI) data producers and users

- Information about risk to use data without quality checking.
- Doubtful data must be checked from original source (paper format).
- To be careful with new station names.
- Instrument code in semantic header will be great step forward to improve information about data collection.
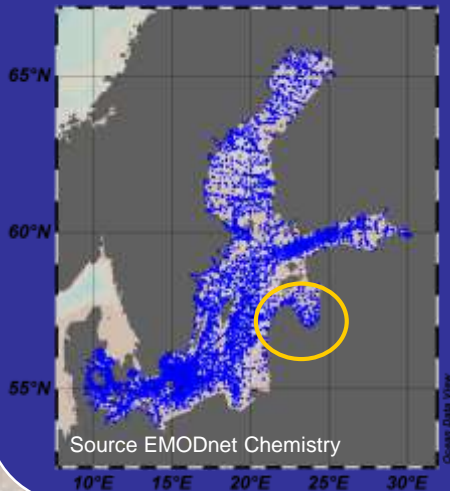
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BENEFIT 3

Source EMODnet Chemistry

LHEI data are part of common network

- LHEI and other data centres can work because SDC provides services and platform for other projects (like EMODnet).
- LHEI data are available for all groups of users and data from other data centres can be downloaded and used by LHEI (MSFD).
- SDC «built a bridge» to connect data centres from countries around the Baltic Sea.

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BENEFIT 4

Developing of LHEI knowledge

- Thanks to efforts of SDC project team, the amount of good data increased. It is great opportunity for local scientists, experts and students to use good data from different Data centres around the World for, e.g., modelling, policy making etc.
- Other projects are interested in good data provided via SDC platform.

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Thank you!
Thanks to SeaDataCloud!

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