Scoping Note on Data and Information Management (DIM)

27 May 2024 - v3

This note provides more information on the scope of Data and Information Management (DIM), previous key milestones and planned activities under IW:LEARN5.

A. Introduction on DIM

The DIM framework consists of four main pillars, shown schematically below:

1. Metadata level	2. Visualization	3. Legal aspects of data and information sharing	4. Harmonized data, indicators and assessments
•Who's who in a specific project? •What kind of data is already available? •Establishment of bibliography (e.g. as knowledge and information base of TDA)	•Spatial Lab as one visualization platform •Which layers should be shared? •Special software/IT tools to extract data	•Need to streamline with existing approaches e.g. IODE, GOOS, NOAA etc.	•Set of common indicators (to revise based on latest GEF indicator framework, taking into account SDG indicators) •Support to projects to collect data and report indicators in a harmonized way

1. Metadata level

- Who's who in a specific project?
- Establishment of bibliographies (e.g. as knowledge and information base of TDA)
- Project websites
- What kind of data is already available?
- Data traceability: Incorporate tools to track the origin and changes to data over time to ensure data integrity and trust.
- Automated Metadata Generation: Analyze the use of AI and machine learning to automatically generate and update metadata, reducing manual effort and improving accuracy.
- Interoperability Standards: Adopt standards to enhance data sharing and integration across different platforms.

2. Visualization

- Spatial Lab as one visualization platform. Possibility to partner with platforms e.g. in the geospatial portal MapX to create LME nodes.
- Propose the use of new Data Visualization Tools: Use interactive dashboards and visualization tools that provide real-time data insights.
- Geospatial Analytics: Enhance capabilities with geospatial analytics platforms like Google Earth Engine for more sophisticated spatial data analysis.
- Which layers should be shared?

- Special software/IT tools to extract data.

3. **Legal aspects of data and information sharing**
   - Need to streamline with existing approaches e.g. IODE, GOOS, NOAA etc.
   - Should be addressed more at the organizational rather than the project level, and if this is to be addressed should engage regional organizations engaged in the IW projects as appropriate.
   - Analysis of new Technology for Data Security and sharing: Consider new technology such as Blockchain or others for secure and transparent data sharing, ensuring data integrity and traceability.

4. **Harmonized data, indicators and assessments**
   - Use of the existing DIM guidelines
   - LME Scorecard and LME Hub. How to move forward?
   - Unified Reporting Platforms: Deploy platforms that integrate data from multiple sources and provide standardized reporting templates, reducing discrepancies and enhancing comparability.
   - Develop a toolbox of measurable outcome indicators aligned with SDGs and other key targets (e.g. latest GEF indicator framework) with the aim to move towards greater harmonization across projects and allow for global assessments of common indicators. Toolbox to include methodologies.
   - AI for Data Analysis: Leverage AI and machine learning for predictive analytics and trend analysis, improving the quality and relevance of reports.
   - Prepare a guidance and a template for a data and information strategy in line with the new GEF Knowledge management strategy along with available global and regional resources
   - Support to projects to collect data and report indicators in a harmonized way.
   - Innovate approach to assessments (and SoER), SAP implementation reports. Guidance and twinning across projects to move towards more interesting approaches to presenting assessments, such as online more data driven reports, which also integrate the indicators mentioned above.
   - Sustainability of Information and Resources: Address the sustainability of data and information by ensuring long-term support for data infrastructures. This includes enhancing data management capabilities at the country or institutional levels (Also applies to 3rd Pillar)

B. Previous work on DIM (2016-2019)

The Data and Information Management Working Group (DIM WG), supported by LME:LEARN project (2016-2019) was established as an informal body to guide the process with a clear mandate to create learning exchanges on data and information management tools to be used by the LME community of practitioners. Several meetings of the DIM WG took place during the lifetime of the LME:LEARN project with the **overarching aim to develop more harmonious data and information management across LMEs, and improve capacities of projects to report progress and results** across for example, Strategic Action Program implementation as well as Sustainable Development Goals (SDG) targets. In support of this work,

the LME:LEARN project developed a **training curriculum and guidance documents**. More information can be found in the DIM e-book.

C. Available key DIM products

1. LME review and catalogue
2. DIM guidelines for GEF LME projects
3. Identifying common LME indicators

D. Previous key meetings on DIM

1. LME20 Marrakech November 2018. Presented the aim, scope of the DIM work to engage interest and discussion with all LME20 participants.

2. LMELEARN DIM Paris July 2019 workshop. Note that DIM was funded through LMELEARN and not IWLEARN, hence focus on LMEs, but with understanding this to be expanded in next phase. See agenda and overview presentations, followed by presentations from 6 LMEs/regions, and then training and best practices.

The summary report of the 2019 LMELEARN DIM meeting in Paris includes all next steps agreed (page 11 & Annex to this note). The 2019 global workshop was attended by Benguela Current, Caribbean, Mediterranean, East Asian Seas (PEMSEA), Indonesian Seas and partners including IODE and GOOS.

3. LME21 Cartagena September 2019
4. 2nd DIM Workshop, Bali December 2019
5. LME22 Paris July 2023

A set of planned activities/next steps were proposed during the LME22 meeting in a presentation given by Khristine Gudczinski, prepared jointly with Virginie Hart (see Annex 2).

E. Planned activities as per IW:LEARN5 ProDoc

According to the ProDoc, IW:LEARN5 plans to execute the corresponding activities:

Activity 1.2.1: Develop training strategy to address GEF IW portfolio learning gaps
Following an assessment of the GEF IW portfolio learning gaps and in close consultation with a Focus Group comprised of GEF IW Project Coordinators, the following cross-cutting topics are to be delivered under Component 1:

- Data and information management (DIM), including legal aspects of data sharing and best practices.

Activity 1.2.2: Appropriate existing materials and new materials converted into training modules for blended learning
GEF IW:LEARN will work with subject matter experts and organisations within and outside of the established partnership to deliver on its capacity development programme, and ensure that experience from the GEF IW portfolio is incorporated. The following partners and service providers have been identified to provide support to specific thematic training topics:

- Data and information management (DIM): During the previous phase, and in the course of the GEF LME:LEARN project, two successful (DIM) workshops were conducted at a global and regional level for

data and information management. This phase of the project will utilise the framework and enhance it to expand to other regions to build out this support. These workshops will also focus on the legal aspects of data sharing mechanisms (how it has been successfully done, what are the obstacles, how to overcome these, how to replicate good practices).

Activity 2.1.2: Update existing portfolio visualization maps and creation of new thematic maps

New spatial data and maps covering various themes related to transboundary water management and the focal themes in this phase of IW:LEARN and the GEF7 & GEF8 Programmatic Directions priorities will be uploaded and created in the Geospatial Lab. Data will be collected from project outputs such as available TDAs, technical reports, identified sources in the LME DIM Project Metadata report, as well as online data repositories allowing open access to data sets. …

Activity 2.2.2: Organize regional workshops and Webinars on the use of the digital productivity suite and best practices

The PCU will organize two regional ICT workshops parallel to other regional workshops to be conducted under other components and a minimum of six webinars to enable managers and project staff to update their knowledge and skills on emerging virtual productivity and management tools, and to provide a venue for web and data/information managers to discuss the latest trends and digital tools, and provide participants hands-on experience on how to utilize them (see Figure 4, DPS Support Center). Some of the topics and online sessions will be organized in connection with related ongoing initiatives of GEF Agencies, such as the World Bank's Spatial Agent and Open Learning Campus. World Bank will jointly with IW:LEARN organize lightning Webinars for focal points in the GEF agencies (IW portfolio) to keep them abreast of the latest digital project management tools and concepts and stimulate a more dynamic community.

Activity 2.2.3 Produce a practical handbook to guide projects on managing a GEF IW website for improved data and information

A primer will be developed by IW:LEARN to especially guide projects and their website managers in setting up a website that enables easy access to key project information and outputs. The handbook (see Figure 4, DPS Primer) will include a checklist for project websites mainly outlining: (1) key project information and documents that should be published online; (2) standard metadata and keywords to be used for improved discovery; and (3) minimal APIs and data integration protocol or tools to be setup to enable seamless access and automated data exchange. The primer will also include links to industry-standard best practice (such as Open Data/Source/Standards) and use cases/case studies on the various aspects of website management and DIM, and a compilation of available branding, communications, website and social media guidelines of GEF Agencies. The primer will also consolidate practical recommendations from the GEF LME:LEARN DIM Report for a more coordinated and sustainable management of project data and information.

ANNEX

1. **Next steps agreed during the DIM workshop (July 2019)**

Mish Hamid, IW:LEARN, Ivica Trumbic and Virginie Hart, LME:LEARN presented a summary of agreed next steps presented below, followed by a tour de table feedback from all LMEs, stressing how useful the meeting and training had been for strengthening data and information management in their LME's and requesting that the work of DIM and support from IW:LEARN be continued in the future.

Issue/Agenda Item	**Action/Next Step**
Several LME's are planning the development of online and possibly interactive State of Environment type reports in the coming 1-2 years, and therefore expressed interest to coordinate in terms of structure and approach	✓ LME:LEARN to coordinate a working group on future State of Environment reports between Benguela, Caribbean, Mediterranean and PEMSEA towards identification and exchange of common approaches in their development (including technology to present reports online in interactive format); and ✓ LME:LEARN to follow up with other LME's that may be also planning relevant reports to be included.
Review and finalization of report "Data and Information from The GEF Large Marine Ecosystem Portfolio - Metadata catalogue of available GEF marine project data and information" to be finalized	✓ LME:LEARN to request that LMEs submit final comments, edits and good practices by 15 August (PEMSEA & Caribbean already submitted).
Review and finalization of report "Data and Information Management Guidelines for GEF LME Projects"	✓ LME:LEARN to request that LMEs submit final comments, edits and good practices by 15 August; ✓ DIM Guidelines to include summary of core actions to be implemented by all LMEs; ✓ LMESs to ensure project teams consider the guidelines and how to implement them during project execution as appropriate;
Review and finalization of report "Identifying Common LME Indicators - Towards common reporting and comparability between LMEs"	✓ Add column with relevance for each indicator; ✓ Add acidification & oil spills indicators; ✓ Clarify if marine trophic index (CBD/Sea Around us) can be accepted by LME's; ✓ Clarify for SDG Indicators (Tier II and III) that still in process of defining indicators, and give alternative options; ✓ LME:LEARN to send matrix of indicators for LME's to indicate to what extend data is available, and whether the indicator is already integrated into key strategic documents and monitoring and evaluation plans; and ✓ Next stage of DIM work on indicators to consider further development of common methodologies and reporting templates for each agreed indicator.

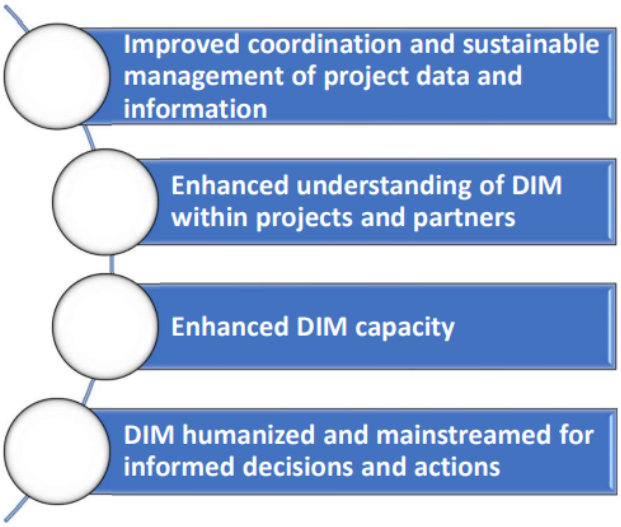
Issue/Agenda Item	Action/Next Step
Application of the LME Scorecard	✓ The Indonesian Seas project (ISLME) and Benguela Current (BCLME) committed to complete the scorecard as part of their next regional meetings; ✓ LME:LEARN to notify all LMEs not present at the DIM meeting and encourage completion of the ScoreCard to be included as part of strategic meetings as appropriate
Further development of the LME Hub	✓ LME Hub – to consider main recommendations from DIM meeting in the further population of LME-Hub (see report).
LME training on the creation of story maps (UNEP GRID-Geneva)	✓ Story map links and files to remain available until 30 October for participants to continue training and practice for the creation of a Story MAP; ✓ LME:LEARN to share video training with all LMEs; ✓ IW:LEARN and UNEP Grid Geneva to coordinate further collaboration for next phase of DIM;
LME training on Ocean Plus (UNEP WCMC)	✓ LMEs to follow up with UNEP WCMC on specific data need and possible pilots for cooperation; ✓ IW:LEARN and WCMC to coordinate further collaboration for next phase of DIM; ✓ GRID-Geneva to follow up on the possible creation of an LME geonode in map-x, initially starting with one LME (such as the Mediterranean), in cooperation with UNEP WCMC.
LME training on FAO tools and data	✓ LMEs to follow up with FAO on specific data need and possible pilots for cooperation; ✓ IW:LEARN and WCMC to coordinate further collaboration for next phase of DIM;

2. **Planned activities/Next steps proposed during the LME22 meeting**

Planned activities IWL:LEARN5 (2022-2026)

Major considerations

- ❑ **Promote enhanced coordination and harmonization** on data management across the GEF IW portfolio
- ❑ **Account for available portfolio data and information**, look at how this can feed into the SAP implementation, SoE and SDGs reporting, etc.
- ❑ **Facilitate exchange of tools and best practices** between projects
- ❑ **Agree on some basic common indicator reporting**, in line with regional and global and regional data reporting requirements
- ❑ **Ensure sustainability** and continuity beyond the project lifespan
- ❑ **Be vigilant for emerging Open technology, innovations and new opportunities**, inform DIM WG and the projects for potential scaling up and/or replication

Planned activities IWL:LEARN5 (2022-2026): DIM Phase 2

- ✓ New detailed DIM workplan
- ✓ Reactivate the DIM informal working group
- ✓ Update and implement the DIM guidelines – based on previous workshops and updated guidelines
- ✓ Organize regional workshops and training on DIM management
- ✓ Implement recommendations from an updated GEF LME:LEARN DIM Report
- ✓ New reference materials on project communications, DIM and website management in IWLEARN.NET, promote a more dynamic communication