

ANNEX 3

Living High Seas project preparation phase

Living High Seas Output 1: Scoping out the LHS data coordination model

Report by MGEL Duke University for Seascope Consultants/GOBI

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1. Introduction

As part of Output 1 of the Living High Seas project, the scientific evidence base from which the ABMT/MPA proposals will be generated will be based on the best available data and information and guided by globally applicable standards. To support the achievement of this outcome, the project will develop a data coordination model. Development of this data coordination approach will be led by GOBI (with implementation support from a core data team) and co-developed with local action partners (LAPs) across LHS regions.

The purpose of this document is to scope out an initial coordination model with the understanding that some flexibility in approach will be required during implementation. The coordination approach, architecture, and standards are explored below with the goal of informing near-term work on the LHS data approach and defining key decision points on data infrastructure and management during discussions with LAPs early in the project.

2. Data Coordination and Operation

As the project begins, two main streams of work on data coordination and operation are necessary. The first is to connect with colleagues from regional LAPs and begin a dialogue to understand their data and technical contributions to the LHS project. A group of regional data managers will be formed to structure these connections and facilitate cross-project communication. This group should have a shared communication platform to facilitate project communication, maintain project documents, and hold shared links and resources. Topics for this group to consider:

- Data inventories
- Data storage infrastructure
- Standards and metadata

- Terms of use and permission structures
- Catalog / repository / portal technologies
- Capacity building and training
- Infrastructure sustainability planning

The second stream of work involves preparation for the actual data provisioning workflow for global datasets for the project. Possibilities on the LHS data approach are outlined below, with the goal of exploring these enough in the early project phases to allow for progress on solutions to serve the project in later phases. GOBI will discuss architecture(s) with LHS partners during that process to ensure that flexible and efficient decisions are taken in supporting each LHS regional approach.

Federated data system

A possible starting point for the LHS data operation could build on a variation of a common federated data system. Under this approach, a backbone of common global datasets and data standards are developed in the early phases of the project by the LHS core data team. Data standards will reflect globally accepted best practices for data management, as outlined in Section 2.4 below. LHS project data standards inform the data collation requirements and process. These datasets are then provisioned to regional nodes where other regionally specific and relevant datasets are also collated.

Where this differs from a typical federated data system is that there will not be a central LHS data repository or portal, instead a centralized “data provisioning service” with data then accessible/housed at regional portals/repositories/catalogs. This approach empowers the regional nodes as the primary data access locations while the centralized provisioning service enables each node across the LHS project to operate with a common set of base datasets and then customize as regional priorities dictate. These regional nodes can use the centralized data expertise as well as intra- and cross-regional expertise to address data management topics.

This federated system will also include data training for regional data managers and scientists to work with the common global backbone of datasets to perform any regional sub-setting, downscaling or summarization themselves. The LHS capacity needs assessment will inform this activity, and those results may further shape architecture decisions of the centralized data provisioning service.

Architecture directions

Several architecture questions will shape how the LHS data approach will evolve in each region. These questions are informed by existing resources as well as potential new efforts that LHS partners will develop. Outlining these potential options will help the LHS core data team better support regions in their implementation and prepare for a flexible centralized data architecture that supports a range of potential options.

An initial question is what type of functionalities already exist and will be best suited for data management and operational needs in each region. Several common functional types are data catalogs, repositories and portals.

- Catalog: supports the discovery and comprehension of existing data.
- Repository: stores and provides access to data and metadata.
- Portal: provides easy online use of datasets for project needs.

Each type has a distinct role and can be implemented piecemeal or as complimentary elements in a complete data system. Understanding how LAPs are currently operating and what infrastructure they want going forward will be central to how the LHS data approach develops.

A subsequent discussion involves understanding whether the LAP currently hosts or plans to host their own data infrastructure internally. An alternative approach would have the LAP rely on existing or new cloud-hosted solutions. These answers will feed back into how the centralized data architecture functions to support LAP infrastructure.

Another subsequent decision point focuses on where data will be stored to be accessed by the LAP infrastructure. Data could be all stored locally by the LAP and served into their data infrastructure or data could be stored in cloud-based repositories and accessed by the LAP infrastructure over the internet.

A hybrid of local data and cloud data is a likely outcome for most regions, but the LHS project will need to know if the LAP infrastructure will be able to access data via common GIS web interoperability methods at all. If this web interoperability is not available, the central data provisioning service will need to adapt to deliver global backbone data for local storage. If web interoperability is possible, the central data provisioning service can rely on an architecture that delivers data to all regions from a common LHS repository. Web interoperability may also allow for LAP infrastructure to access data from non-LHS resources such as OBIS, GFW, or CMEMS etc.

Once these discussions are completed across regions, the LHS data approach can be finalized to best support a consistent data service backbone that empowers LAP infrastructures to build from a common data platform while still customizing their work for integration and sustainability in each region.

3. Design of a workshop-based model process for Output 1

In order to achieve Output 1 goals and develop proposals for high seas ABMT/MPAs, it will be essential to work collaboratively with LHS partner countries to review best available scientific evidence and knowledge and evaluate the data against the applicable standards. This collaboration will need to take place both virtually and via in-person workshops, and when those workshops take place in the process may differ for each partner region. To account for the potential differences in timing and capacity between the regions, the workshop process has been broken down into the components of Output 1 and a consideration made of what potential virtual or in-person interactions with the regions might entail. Following the completion of the Capacity

Needs Assessment and a better understanding of the timing of regional workshops, this workshop process can be further developed to meet the needs of each LAP.

YEAR 1

Engaging with regional partners and assessing capacity

These activities should be conducted virtually to determine what scientific and technical capacity each of the LAPs have before engaging in any efforts to compile scientific data within the regions. Simultaneously, the LHS core data team should expect to be working on provisioning the backbone of global datasets in an accessible architecture for the regions, based on the results of the CNA. Any clarifications about capacity, data usage, data storage, etc. can be managed via email or virtual meetings.

Identifying and compiling best available data

Compiling the data for each region into the chosen data will ideally be something that can be conducted virtually, though this may depend on regional technical capabilities. At a minimum, the LHS core data team should expect to be in contact with the LAPs to identify the regional/national parties that have data and to reach out to those organizations to encourage them to either provide their data to the LAP or to a central data hub. If necessary, a virtual workshop could be held to guide those organizations on how to prepare their data for sharing. Another option to solicit data to be prepared for a meeting or shared with LAPs could follow the example of CBD EBSA workshops and ISA REMP workshops, in which the global data backbone is shared with participants ahead of any workshops or virtual meetings and the LHS core data team requests they fill the regional data gaps with data they either possess or are aware of.

Potential presentations:

- Orientation to the global data backbone compiled by the LHS core data team and how to access or use it
- Existing data infrastructure and portals and how to contribute data to those or access data that are hosted
 - Could also highlight examples from other regions as ideals to aim for.

YEAR 2

Identifying potential ABMT sites

This activity is one that could benefit the most from an in-person workshop that builds on the data compiled earlier in the process. During a workshop, regional experts could be gathered to evaluate the data that has been compiled, identify any data gaps that still exist, assess the potential ABMT sites against site criteria based on the available scientific data, and potentially identify other candidate ABMT sites in the region. Previous experience in gathering experts to review spatial data, identify potential ABMT sites, delineate boundaries, and describe those locations indicates this process is most effective in person. An attempt was made in 2020 to

conduct an ISA REMP workshop virtually to identify ABMTs for the Northwest Pacific Ocean region, and the results of the workshop were criticized as not effectively engaging participants who were not native English speakers and reflective of the opinions of the more vocal participants rather than the group as a whole. Based on these experiences, we would recommend that this highly interactive step in the process would be an in-person workshop that convenes the LAPs, regional experts, and data holders to iteratively review the data and the potential ABMT sites and develop draft areas that can be further developed into ABMT proposals following the workshop.

Recognizing that the workshops will seek to achieve LHS goals beyond Output 1, it will be essential to make enough time within a workshop to allow groups of experts to review the data and perform any ad hoc analyses. The goal would be to ultimately leave the workshop with, at a minimum, draft boundaries for potential ABMTs and a synthesis of the data driving those boundaries. During these workshops, it will also be helpful to make participants aware of current ABMTs and ABMT approaches under existing sectoral management bodies (e.g., RFMOs, IMO, ISA). This will help identify management options for any areas identified during the workshop that are not appropriate for a BBNJ ABMT proposal but that could be addressed by one of these other sectoral bodies. In the event that consensus cannot be reached by the workshop participants, the sites can be described as areas for future consideration, following the CBD EBSA workshop example, and document what information would be needed in order to proceed with BBNJ proposal development. It may also be possible that sites that are identified through this workshop process may be better suited to other ABMTs, which should be documented in the workshop report and can be pursued by the relevant regional organizations. Following the workshop, it will be helpful to compile a workshop report to summarize the data that was assessed, how decisions were made in determining ABMT sites and boundaries, describe any other areas that were identified as potential ABMTs, and what the outstanding data and knowledge gaps are that could improve the ABMT description(s).

Potential presentations:

- Review of the existing EBSA or area of interest and the supporting science
- New science since the EBSA description
 - This could be a summary by the MGEL team and/or the regional partner or a series of presentations by meeting attendees to share their own new science
- Other existing ABMTs in the region and ABMT approaches
 - ISA, RFMO, MPAs, IMO, etc.
 - Other LHS regions – lessons learned
- Boundary context – disputed areas, management zones, ECS

Identifying research, data, and knowledge gaps

This activity would occur in conjunction with the data-gathering activities described above in Year 1. As the core data team works with the LAPs to compile data and think about what areas to assess against the scientific data, they should simultaneously identify what data are missing from the analysis. While compiling both global and regional data, it will be crucial to identify any

missing elements based on the ABMT proposal criteria and how to handle these gaps. In cases like the ISA REMP workshops, it often occurs that the ideal scientific data to determine ABMTs for a region do not exist, or do not exist at the scale necessary for the ABMT network, and thus, proxies are identified to fill that gap until the appropriate data can be collected and published. In instances where proxies cannot be identified or used, it will be necessary to assess whether a site can be proposed with sufficient evidence for the relevant criteria or if a proposal may have to wait for additional data. In the case of describing EBSAs, sites did not have to meet each criteria in order to be proposed. This will likely be the case for BBNJ ABMT proposals, though it will be necessary to follow the development of how the 22 identified BBNJ criteria should be applied to ABMT proposals to understand the minimum amount of data that will be necessary for a site to be proposed.

This will also occur throughout the development life cycle of the ABMT proposals. As the evidence and narratives of the proposals are being documented, additional knowledge or data gaps may be identified that can be mentioned either in the proposal, or in a separate report developed by the LAPs focusing on data gaps specifically.

YEAR 3

Preparing scientific evidence for ABMT proposals and site-specific narratives

These activities are expected to be completed during Year 3 by the LAPs and should be undertaken following an in-person workshop to explore what data and scientific information will be included in the proposal and narratives. The MGEL team expects to be available to consult on data access or analysis needs on an ad hoc basis, as requested by the LAPs, though these consultations can likely be conducted via email or virtual meeting.

YEAR 4

Peer reviewing ABMT proposals

This is an activity that should occur following an in-person workshop to reach consensus on the appropriate ABMT site, boundaries, and underlying evidence. As needed, the core data team should engage with LAPs to provide input to or review the ABMT proposals.

YEAR 5

Finalizing ABMT proposals

If sufficient revisions are suggested to the LAPs regarding their ABMT proposals, it could be worth considering a follow-up workshop to make the relevant changes, ingest any newly identified or appropriate data, and get consensus from regional experts on the changes to the ABMT boundaries or descriptions. This could be a smaller and shorter workshop that focuses on

completing this task or be built into a larger workshop if other LHS activities require follow-up work as well. A smaller workshop format is something the ISA has incorporated into the REMP process to have fewer participants conducting a thorough review of the larger workshop results and making any necessary revisions in order to finalize boundaries and descriptions before sending them out for review to the broader workshop participant list.

Documenting lessons learned

This is a task that can be worked on throughout the project, as the team identifies areas for improvement, highlight the successes and what worked well, and any missing components that need to be addressed in future efforts. Following each step of the process, it will be crucial to reflect on how improvements can be made for future regional ABMT planning. Some of these reflections should be summarized in the regional workshop reports to provide region-specific reflections of what was successful, where there were areas for improvement, and how decisions were made when uncertainty was encountered. Pending the results of the workshops, it may also be appropriate at this step of the process to identify other management measures that may be more suited to the needs of areas identified by the regional experts.