OCEAN DISCOVERY LEAGUE

# DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

A resource to help organizations assess capacity development programs and provide a clear roadmap for improvement

www.oceandiscoveryleague.org
community@oceandiscoveryleague.org

# Table of CONTENTS

# Introduction

Current deep-sea exploration and research are predominantly exclusive to high-income countries and territories due to the expense, inefficiency, and inequitable distribution of the necessary tools and resources worldwide. These factors limit access for low- and middle-income countries and territories and many Small Island Developing States, despite available expertise in these locations. The 2022 Global Deep-Sea Capacity Assessment, conducted by the Ocean Discovery League (ODL), is a baseline assessment of the technical and human capacity for deep-sea exploration and research in every coastal area with deep ocean worldwide. The assessment revealed ten key findings, including expertise without access to technology, the need for more deep-sea vehicle access to activate available expertise, and training as a critical opportunity.

This global inequity poses multiple challenges, including the shaping of research agendas dominated by high-resource areas, limited scientific exploration, hindered development of sustainable ocean-based economies, and the exclusion of communities from appreciating the deep ocean's value.

These challenges have prompted an interest amongst deep-sea organizations in designing and implementing capacity development programs that address the need for the long-term technical and human capacity for deep-sea exploration and research.

## Monitoring & Evaluating Deep-Sea Capacity Development

Measuring and assessing the outcomes of capacity development initiatives in any field is genuinely challenging. Currently, there are no effective, transferable, and repeatable monitoring standards for capacity development in ocean science (Harden-Davies et al., 2022). This is made even more challenging by the lack of standardized metrics and established frameworks for assessing capacity development in the deep-sea field. To address this challenge, hybrid, multidimensional evaluation methods are becoming increasingly important to accurately capture the complete picture of a capacity development project's success or failure (Vallejo & Wehn, 2016). The methods reflect the complexity of the environments where capacity development projects are implemented and provide more accurate insights into their effectiveness. In this context, the focus of Monitoring and Evaluation (M&E) is on simplicity, feasibility, and reinforcing local stakeholder ownership of capacity building.

While designing robust monitoring and evaluation (M&E) frameworks is crucial, their effectiveness ultimately relies on the individuals and organizations responsible for implementing them. Research indicates that the lived virtues of the organizations and individuals utilizing the M&E system are deemed more critical than the system itself (James, 2009).

This highlights the need for commitment, transparency, and a dedication to learning and improvement to achieve successful M&E outcomes. Without these qualities, even the most sophisticated evaluation systems can fail. By integrating these values within M&E practices, organizations can cultivate a culture of accountability that enhances the effectiveness of their capacity development programs and projects.

## Capacity Development Definition

Capacity Development, or Capacity Building, can be interpreted in various ways depending on the source and context. To guide the work for the Maturity Model, it is important that we establish a common understanding of capacity development, recognizing its significant influence on the outcomes of related initiatives (Harden-Davies et al., 2022). "Capacity-building" and "capacity development" are terms often used interchangeably, but they have a subtle yet important distinction. As noted by the European Parliament (2017), "capacity-building" refers to the creation of something entirely new, while "capacity development" focuses on a more organic process that utilizes the existing skills and knowledge within a community. This latter approach promotes adaptable and sustainable change driven by local actors. With this in mind, ODL has established a definition for 'capacity development' that considers the various framings for capacity building, such as Organizational, Technical, Adaptive, and Influencing, defined by BetterEvaluation in 2022. This definition also draws upon recommendations from Harden-Davies et al. in 2022 and discussions held during the two Capacity Development Deep Ocean Observatory Strategy (DOOS) Annual Meetings. The following definition identifies common themes and points raised from these sources:

> *Capacity development in the deep-sea sector is the long-term and sustained advancement of local knowledge, collaboration, and leadership within local and global communities interested or engaged in deep-sea research or exploration.* ***Initiatives are grounded in a community-driven approach****, which aims to reduce barriers while* ***amplifying existing research and exploration efforts*** *that align with a community's right to* ***agency, autonomy, and self-determination.***
>
> *Initiatives are tailored to each local and global community's specific needs, including knowledge building, skills training, mentorship, and train-the-trainer models to* ***cultivate local talent and leadership****. Emphasis will be placed on providing participants with the* ***skills and knowledge to navigate the evolving challenges and advancements*** *in the deep-sea sector. Crucially, programs will help secure access to the necessary resources and financial support for all training and implementation.*
>
> *All approaches consider* ***long-term and sustainable impacts*** *and ensure that positive outcomes that benefit the community are maintained and continue to evolve.*

This definition of capacity development highlights the significance of a two-way exchange of ideas, allowing local communities to share their knowledge and perspectives while gaining from external expertise and resources. Similarly, 'Knowledge Exchange' and 'Capacity Sharing' describe this collaborative and mutually beneficial approach.

## Our Motivations for this Work

ODL was inspired to pursue this work after recognizing the capacity development gaps highlighted in a 2022 paper titled "Capacity Development in the Ocean Decade and Beyond: Key questions about meanings, motivations, pathways, and measurements" by Harden-Davies et al. The paper identified the challenge of ensuring that capacity development initiatives in ocean sciences are trackable, measurable, and comparable from year to year. It also emphasized the need for explicit spaces where stakeholders, scientists, policy-makers, and individuals involved in capacity development programs can openly discuss their experiences. This prompted us to consider how to address these gaps in the deep-sea research community. Moreover, ODL plans to conduct capacity development programs in 2024 and beyond to engage marginalized communities in deep-sea research and exploration. To ensure that the outcomes of these initiatives can be recorded, measured, and compared year after year, developing M&E guidelines is essential.

The project's initial goal was to raise awareness about M&E and create guidelines for Phase 2. However, the focus shifted to prioritizing a reflective process that identifies organizations' current programmatic strengths and weaknesses. This shift led to the development of the Maturity Model as a standalone tool for Phase 1. The Maturity Model is designed to be user-friendly and helps program coordinators of all experience levels to validate their capacity development efforts and ensure alignment with program objectives.

## Our Process

### Background Research

Our work began with desktop research focused on comparing existing M&E frameworks and standards specific to deep-sea and ocean science, especially those relevant to organizations working in the Global South and marginalized communities.

This research highlighted the growing importance of effective M&E practices in this specialized field, which often involves diverse stakeholders and complex collaborations. There is an increasing awareness of the need to assess and enhance the capacity of individuals, teams, and organizations involved in these initiatives.

Ultimately, robust M&E is vital to support and strengthen capacity development in deep-sea research and exploration. It can support better planning and decision-making by providing valuable insights, facilitate learning and exchange by sharing lessons learned, ensure accountability and transparency to funders and the public, and enable comprehensive reporting of findings and outcomes.

Our research also involved a comprehensive review of existing M&E tools and frameworks across diverse organizations. This analysis aimed to identify the most critical and adaptable criteria for deep-sea research coordinators.

Our approach employed a hybrid, multidimensional lens to ensure flexibility and broad applicability across various organizations operating within the deep-sea space. We recognize that a one-size-fits-all model may not be suitable for the unique needs of each organization.

During the research phase, one key finding was the need for more emphasis on capacity building within existing M&E resources, particularly for the deep-sea and ocean sciences sector. The model incorporates elements that explicitly focus on building organizational capacity to address this gap. Importantly, this Maturity Model is not merely a tool for the present but is intended to serve a long-term purpose. It aims to help organizations assess the impact of their initiatives and minimize potential harm to local communities.

## Landscape Review

ODL then conducted a landscape review assessment with program coordinators from seven organizations in the deep-sea community (i.e., ODL, COBRA, UNOLS DeSSC, DOOS DOERs, OET, NOAA Ocean Exploration, and Schmidt Ocean Institute) to understand the current state of capacity development and M&E within the deep-sea sector. The assessment sought to understand how capacity development is currently implemented, what knowledge and guidance the sector needs regarding M&E, and how existing frameworks can be improved to address the sector's specific needs better. The assessment also aimed to identify existing M&E practices, gaps, and opportunities to strengthen capacity development efforts in the deep-sea research sectors. Additionally, two Capacity Development sessions at the 2022 and 2023 Deep Ocean Observing Strategy (DOOS) workshops provided valuable insights from individuals worldwide in this sector.

## Maturity Model Development

Based on our research and landscape review, ODL collaborated with an M&E specialist to develop a Maturity Model for capacity development initiatives in the deep-sea community, which includes a definition of capacity development. The Maturity Model is designed to align with the sector's programmatic work and includes relevant categories and parameters to ensure effective capacity development. ODL also engaged two reviewers from South Africa and Montserrat to help fine-tune Version 1 of the model.

## Validation Exercise

In May 2024, ODL conducted three webinars to introduce the Maturity Model to program coordinators involved in capacity development in ocean sciences and deep-sea research. The coordinators were invited to test the first version of the model on their programs and provide detailed feedback. The feedback from this initial validation phase was compiled from June to September 2024 and incorporated into this document — Version 2 of the Maturity Model, which will be used to develop M&E Guidelines for Capacity Development.

# Maturity Model Overview

A Maturity Model is a structured framework that enables individuals and organizations to assess their programs and compare them with industry best practices and competitors. By identifying strengths and weaknesses, the Maturity Model provides a clear roadmap for improvement. This framework is helpful for benchmarking initiatives and can assist organizations in achieving their goals by providing a logical and feasible path forward (Proença & Borbinha, 2016).

Using the Maturity Model alongside M&E frameworks can help improve how an organization monitors and evaluates the success of its programs. Together, these tools can help set realistic goals and measure achievements against established benchmarks for capacity development programs. This enables an organization to make informed decisions about resource allocation, programmatic adjustments, and strategic priorities based on evidence of effectiveness and areas needing improvement.

Aligning a Maturity Model with existing M&E work ensures that assessment efforts are directly connected to program objectives and outcomes. It helps organizations focus on areas critical to program success and ensure that program evaluation is an integrated process. This, in turn, supports continuous learning, adaptation, and improvement throughout the entire program cycle.

## Examples of Use Cases

The following two distinct contexts illustrate how a Maturity Model can encourage organizations to identify areas for growth and improvement.

Firstly, Museums & Race, a volunteer-led organization of museum professionals, enthusiasts, and change-makers in the US, is working towards eliminating institutional racism. In 2018, they developed the Museums & Race Report Card to assess and benchmark museums' progress in addressing issues of race and equity. The Report Card provides valuable insights into cultural institutions' diversity, inclusion, and social justice efforts by evaluating museums' practices and initiatives across seven dimensions within a multi-tiered development continuum. Progression through the continuum highlights how an organization moves closer to fully institutionalizing racial equity within its museum. The rubric within the Maturity Model is used to evaluate perceptions of current progress at a museum, followed by advancing planning and operational goals within an equity context. The snapshot obtained by the rubric is then used as a baseline against which museums can measure their progress in this work.

Second, three Australian higher education institutions developed the Student Engagement Maturity Model in 2012 to enhance student engagement and retention strategies/programs. This model was used in the Australian education sector to gauge the maturity of student engagement practices within academic institutions. It provides a structured framework to evaluate the effectiveness of student engagement strategies and identify areas for improvement.

## Who is this Maturity Model for?

The Deep-Sea Capacity Development Maturity Model aims to encourage self-reflection and help organizations assess their current and desired capacity levels, gaining a clear understanding of their strengths, weaknesses, and needs. By reflecting on their internal processes and making targeted improvements, organizations can establish meaningful success metrics and key performance indicators (KPIs) for capacity development initiatives in deep-sea research or ocean sciences.

Furthermore, actively involving partners and stakeholders in this process fosters the creation of a shared framework for measuring progress and impact. This feedback loop ensures that initiatives remain adaptable to evolving needs and priorities, incorporating diverse perspectives and requirements throughout the program cycle.

The Deep-Sea Capacity Development Maturity Model is designed for NGOs, academic institutions, research centers, government agencies, and/or funders who are:

**1. Capacity Developers**
Organizations and individuals who provide expertise and support to strengthen the abilities of others in the deep-sea research and ocean sciences sector. This includes activities such as planning, managing, implementing, and assessing capacity development initiatives

**2. Communities participating in and shaping capacity development**
Representatives from communities impacted by or participating in deep-sea research and ocean sciences capacity development initiatives.

**3. External stakeholders**
Individuals or organizations outside the core capacity development team who support capacity development initiatives. This may include providing funding, resources, and expertise or advocating for the needs of participating communities

## When to Use the Maturity Model

The Maturity Model is a versatile tool that **can be used at any stage of a program, whether you are planning, implementing, or evaluating it**. It's helpful not only for those actively managing programs, but also for planning new initiatives or assessing the effectiveness of past ones.

**1. Planning**
Identify a clear roadmap and define the criteria for an effective intervention.

**2. Implementing**
Determine short-term changes to enhance program outcomes.

**3. Evaluating**
Identify learning outcomes and formulate a plan of action for the next phase.

## How to Use the Maturity Model

This Maturity Model aims to establish a new standard for capacity development in deep-sea and ocean science while recognizing the diverse needs and contexts within these fields. It differentiates between non-negotiable and adaptive categories to address the urgent need to improve capacity development practices. Historically, some initiatives have struggled to deliver lasting benefits to local communities, and there are legitimate concerns about external organizations prioritizing short-term gains over sustainable outcomes.

The model comprises six components identified from the Capacity Development definition (in bold) on Page 4. These components are divided into two categories: non-negotiable and adaptive.

Each component is rated on a scale from "Initial" to "Advanced," indicating the degree to which your program incorporates essential elements.

- "Advanced" level: Your program fully embodies the component, demonstrating a high degree of integration and effectiveness.
- Intermediate level: Your program shows progress toward the "Advanced" level, with some elements in place but areas that require improvement.
- "Initial" level: Your program is in the early stages of addressing the component, with key elements missing or underdeveloped.

## Why Non-Negotiable and Adaptive Components?

We categorized components as "non-negotiable" or "adaptive" based on their importance and the flexibility required for different contexts:

- **Non-negotiable components** are considered the "gold standard" for deep-sea research and exploration capacity development. They are fundamental to ensuring ethical and effective practices, addressing potential past mistakes, and prioritizing building trust and long-term collaboration with communities.
- **Adaptive components** allow for flexibility to adjust to different program objectives and local priorities. They offer opportunities to further strengthen your initiatives based on specific needs and goals.

## Categories

### Non-negotiable Category

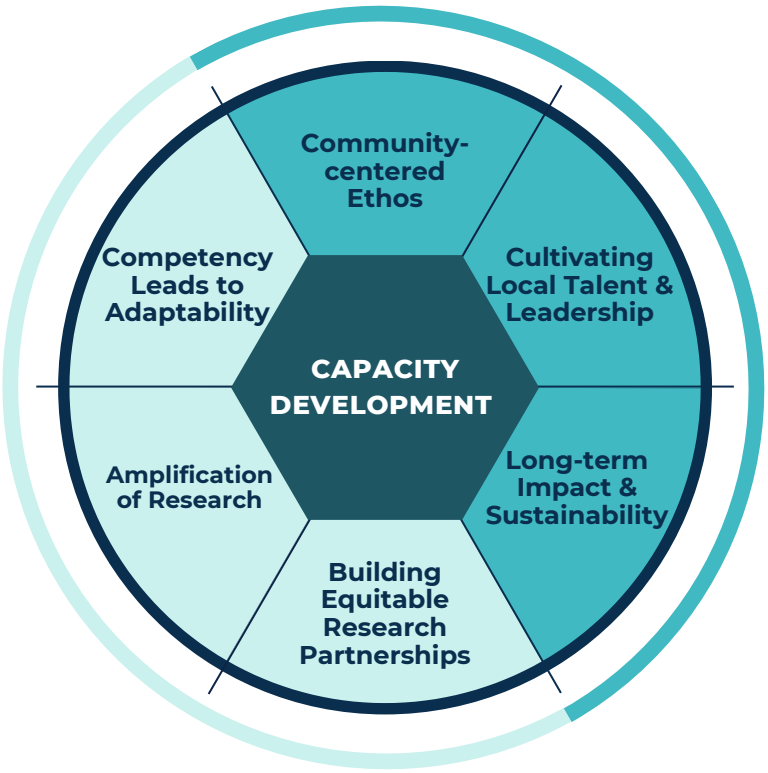
The non-negotiable components, which must all be included within the program, are:

- Community-centered ethos
- Cultivating local talent and leadership
- Long-term impact and sustainability

### Adaptive Category

This category offers flexibility, allowing you to choose at least one component that best suits your program's objectives and assess its maturity level. The adaptive categories are:

- Building Equitable Research Partnerships
- Amplification of research
- Competency leads to adaptability



OCEAN DISCOVERY LEAGUE

# STEP-BY-STEP PROCESS

## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Step-by-Step Process

This Deep-Sea Capacity Development Maturity Model is a framework designed to help you assess and improve your capacity development efforts. By using this model, you will gain valuable insights into your programs and be able to standardize your monitoring and evaluation processes, leading to more effective learning and improvement. It also allows for meaningful comparisons between your initiatives and those of others engaged in similar work.

**Review the non-negotiable components**

Begin by reviewing all three components in the Non-negotiable Category

**Select at least one adaptive component**

Choose components that align with your program's specific objectives

**Familiarize Yourself with the Level Descriptions**

Understand the key characteristics of each maturity level

**Reflect and Conduct a Programmatic and Component Self-Assessment**

Identify areas of improvement for your program

**Facilitate Conversations & Develop an Action Plan**

Use your self-assessment results to start a conversation with your team and leadership

**Implementation Phase**

Implement, monitor, communicate, and document your action plan for measurable results

**Revisit and Reassess**

Regularly revisit the Maturity Model to track your progress, adapt your strategies, and measure your impact

### Step 1: Review the Non-Negotiable Components

Begin by reviewing all three components in the Non-Negotiable category:

- Community-Centered Ethos
- Cultivating Local Talent and Leadership
- Long-Term Impact and Sustainability

These are fundamental and should be incorporated into every program.

### Step 2: Select at Least One Adaptive Component

Next, choose components that align with your program's specific objectives.
The components in the Adaptive category are:

- Building Equitable Research Partnerships
- Amplification of Research
- Competency Leads to Adaptability

### Step 3: Familiarize Yourself With the Level Descriptions

Understand the key characteristics of each maturity level (Initial, Intermediate, Advanced) for your chosen components.

### Step 4: Reflect and Conduct a Programmatic Self-Assessment

Before starting the self-assessment, take a moment to reflect on your program using the Reflective Questions on page 17. These questions will help you think critically about your program's purpose, context, assumptions, and long-term goals. Consider questions such as:

- What is the overall goal of your program?
- Who are the key stakeholders, and how are they involved?
- What are the potential long-term impacts of your program?

Now, reflect on your initiative's activities and achievements within each of your chosen components.

It's perfectly normal for your initiative to span multiple levels within a component. The model isn't designed to be a rigid checklist but rather a tool to help you understand where your initiative currently stands and identify areas for potential growth.

### Step 5: Facilitate Conversations and Develop an Action Plan

Use your self-assessment results to start a conversation with your team and leadership about the following:

- What are our key strengths in capacity development?
- What are the areas where we have the greatest opportunity for growth?
- How can different departments contribute more effectively to our overall capacity development goals?

Keeping these insights in mind, you can proceed to develop an action plan with specific steps to improve.

- To strengthen your action plan, consider developing or revisiting your program's Theory of Change/Logic Model (see page 39) and identifying specific actions to help you progress to the next level in the Maturity Model.
- Define key milestones and metrics/indicators to track your progress.
- Explore providing additional training to team members or modifying your approach to specific activities.

### Step 6: Implementation Phase

To help you achieve measurable results from your action plan, we recommend these key actions:

- Assign responsibilities, allocate resources, and establish clear timelines for each task.
- Regularly monitor the implementation of your action plan, noting any deviations and proactively addressing any obstacles that arise.
- Maintain open communication with stakeholders by providing progress updates and encouraging collaboration to ensure successful implementation.
- Document the actions taken, any adjustments made to the plan, and the results achieved to inform future assessments.

### Step 7: Revisit and Reassess

Revisit the Maturity Model regularly to monitor your progress. As you implement changes, reassess your maturity level. This will help you adjust your strategies and measure your impact. Regular reassessment helps ensure your capacity development initiatives contribute to achieving your long-term goals for deep-sea research and exploration.

OCEAN DISCOVERY LEAGUE

# PROGRAMMATIC ASSESSMENT

## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Programmatic Assessment

## Reflective Questions

These reflective questions will help guide your assessment of the capacity development work you are implementing at the **programmatic level.** You can guide your reflection by asking the following key questions (adapted from Simister et al., 2021):

**1. Purpose and Timing**
Why is the program being done, and why now?

**2. Targets of Change**
Who or what is expected to change due to the program? (How do we Identify the specific targets of change, whether they are individuals, organizations, or systems?).

**3. Expected Capacity Change**
How is capacity change expected to occur, and how do we define the mechanisms and pathways through which capacity development is anticipated?

**4. Key Assumptions**
What key assumptions underlie the work?

**5. Past Initiatives and Learning**
What other recent initiatives have occurred? What lessons have been learned from these experiences?

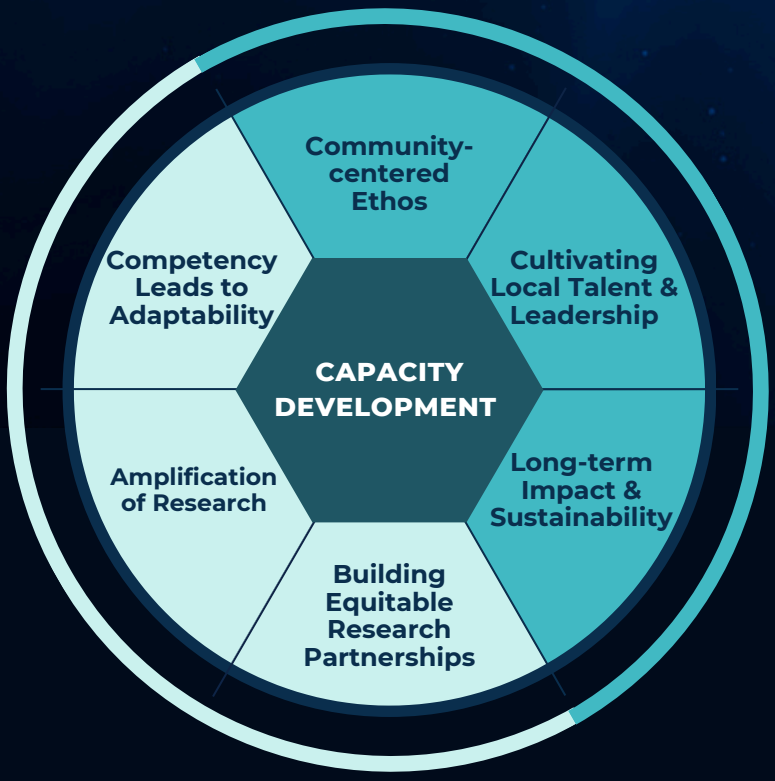
**6. Upcoming Initiatives and Alignment**
What other initiatives are planned or underway, and how do they connect with the current efforts?

**7. Definition of Success**
What would success look like for the program, and how do we define clear indicators and benchmarks for assessing their effectiveness?

**8. Contribution to Wider Change**
How will individual or organizational change contribute to broader societal or systemic change?

OCEAN DISCOVERY LEAGUE

# CORE COMPONENT ASSESSMENT




## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Core Component Summary

The next sections will help guide your assessment of the capacity development work you are implementing at the **component level.** The maturity model comprises six components identified from the Capacity Development definition (in bold) on Page 4. We recommend assessing all of the non-negotiable components and at least one adaptive component.

## Non-Negotiable Components

### Community-Centered Ethos

Ensures communities impacted by or connected to deep-sea research are meaningfully involved in shaping scientific activities. Emphasizes respectful collaboration, cultural sensitivity, benefit sharing, and sustainable partnerships built on mutual trust and transparency.

### Cultivating Local Talent and Leadership

Focuses on developing the skills and leadership of local researchers through mentorship, training, and access to resources. Prioritizes local knowledge, fosters collaboration, and supports continuous learning to empower local communities in deep-sea science.

### Long-Term Impact and Sustainability

Aims to create enduring benefits beyond the program's timeline. Involves ongoing training, ownership by participants, and meaningful conservation research. Promotes knowledge-sharing, long-term collaboration, and diversified funding to sustain outcomes.

## Adaptive Components

### Building Equitable Research Partnerships

Promotes equitable collaboration by strengthening local research systems, infrastructure, and access to resources. Encourages mutual learning, community-driven research development, and institutional capacity-building for long-term success.

### Amplification of Research

Enhances the visibility and impact of deep-sea research through effective communication, broad dissemination, and community engagement. Supports local participation in research and promotes the sharing of methodologies and innovations.

### Competency Leads to Adaptability

Develops interdisciplinary and flexible skill sets for researchers to navigate evolving challenges. Encourages critical thinking, innovation, and effective stakeholder engagement to ensure research aligns with both local needs and global trends.

OCEAN DISCOVERY LEAGUE

# COMMUNITY-CENTERED ETHOS

## (NON-NEGOTIABLE)


## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Community-Centered Ethos (Non-Negotiable)

## 1. Definition

Recognizes the vital role of communities directly impacted by, or with a vested interest in, deep-sea research and exploration. It ensures that these communities are actively involved in shaping scientific activities, that their values are respected, and that research benefits are shared equitably.

This approach is guided by the following principles:

- Community in the decision-making process
- Respect the local context of the communities
- Acknowledges cultural sensitivities
- Guarantees benefit sharing
- Builds collaborative partnerships between researchers, institutions, and local communities, built on clear communication, transparency, and mutual trust.
- Committed to long-term sustainability and respects the rights of local communities (e.g., about potential impacts on livelihoods or traditional/sacred territories).

## 2. Initial Reflection

How are you ensuring your program effectively engages and involves communities directly impacted by or interested in deep-sea research and exploration? How are you guaranteeing meaningful benefit sharing from these activities?

Use the level descriptions on the following page  to help you with your answer.

## 3. Assessment

Based on your reflection, identify the maturity level that best describes your program's current position within this category. It's perfectly fine if you find yourself spanning across multiple levels.

## 4. Next Steps

The direction you choose will depend on your capacity and priorities. Ideas on how to integrate your reflections into your plan are listed on page 15.

# Community-Centered Ethos (Non-Negotiable)

## Scaled Descriptions Initial, Intermediate, Advanced

| Initial | Intermediate | Advanced |
|---|---|---|
| The program has been designed by consulting the community in a one-way dialogue.<br><br>The organization has laid the groundwork for open dialogue and mutual understanding by introducing transparent communication practices.<br><br>The program acknowledges and respects the importance of local traditions and cultural sensitivities, and initial steps have been taken to integrate community considerations into the decision-making process. However, this is not prioritized.<br><br>The program is committed to sharing the benefits of scientific activities in ways that create real advantages for local communities.<br><br>At this stage, they are encouraged to build collaborative and long-term partnerships with researchers, institutions, and local communities. | Programs are developed through ongoing dialogue with local communities, and continually refined based on insights gained in the initial stages and feedback from the community.<br><br>Despite the program being led primarily by an outside organization, initiatives are designed to genuinely engage and value local communities in scientific endeavors, where their input helps shape research and exploration goals.<br><br>Strategies have been developed to address potential impacts on livelihoods with increased cultural sensitivity, consideration, and greater awareness of and respect for local traditions.<br><br>The program tailors engagement approaches to align with the cultural nuances of the involved communities and implements mechanisms to support a reinforced commitment to guaranteeing benefit sharing from scientific activities.<br><br>The organization transparently conveys information related to deep-sea research and exploration initiatives, and participants foster a more collaborative approach between researchers, institutions, and local communities, leading to deeper cooperation and shared responsibilities. | The program is designed with community input, and community members play a key role in leading it.<br><br>Community perspectives actively shape and influence deep-sea research and exploration activities, and cultural sensitivities are deeply acknowledged and seamlessly integrated into all initiatives. Researchers and community members collaborate as equal partners, contributing to a mutual and shared vision.<br><br>The program includes all listed components and represents an inclusive approach that ensures deep-sea research initiatives align with and contribute to the well-being of the communities directly impacted by or vested in the exploration activities. |

OCEAN DISCOVERY LEAGUE

# CULTIVATING LOCAL TALENT AND LEADERSHIP

## (NON-NEGOTIABLE)


## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Cultivating Local Talent and Leadership (Non-Negotiable)

## 1. Definition

Involves intentional efforts to nurture and harness researchers' skills, knowledge, and leadership capabilities within the local communities associated with or impacted by deep-sea research and exploration.

The approach includes the following:

- Comprehensive mentorship and guidance to foster skill development (technical, scientific, research skills);
- Providing local researchers with the resources, opportunities, and recognition to contribute meaningfully to the scientific community
- Offering leadership training programs that cultivate essential skills in team leadership and project management
- Facilitating meaningful connections and collaborations between local researchers, scientists from other regions, institutions.
- Honoring and integrating local knowledge of the marine environment while providing continuous learning opportunities and ongoing support to nurture local talent.

## 2. Initial Reflection

How does your program intentionally nurture and develop the skills, knowledge, and leadership capabilities of researchers within local communities connected to or affected by deep-sea research and exploration?

Use the level descriptions to help you with your answer.

## 3. Assessment

Based on your reflection, identify the maturity level that best describes your program's current position within this category. It's perfectly fine if you find yourself spanning across multiple levels.

## 4. Next Steps

The direction you choose will depend on your capacity and priorities. Ideas on how to integrate your reflections into your plan are listed on page 15.

# Cultivating Local Talent and Leadership (Non-Negotiable)

## Scaled Descriptions Initial, Intermediate, Advanced

| Initial | Intermediate | Advanced |
|---|---|---|
| The program provides participants with training, with limited emphasis on fostering qualities beyond skill and knowledge development. The role of mentorship is not emphasized.<br><br>For new researchers entering the field, the main focus of the program is to foster a sense of belonging and on individual foundational competencies.<br><br>Participants receive minimal support but are provided with initial resources and opportunities to encourage further engagement and networking within the scientific community.<br><br>The program incorporates a minimum of three components in the description, suggesting that the initiative may need elements that encourage participants to choose their professional pathways effectively. | The program goes beyond skill or knowledge development, introducing elements of nurturing leadership qualities among participants.<br><br>Mentorship is emphasized as a valuable resource to encourage professional growth and nurture long-term leadership capabilities..<br><br>There is an acknowledgment that local researchers should have the opportunity to choose and shape their professional pathways and integrate local knowledge into research.<br><br>The program also provides targeted training programs for emerging leaders to enhance expertise in their specific areas of deep-sea research to enable them to cultivate skills required for higher-level roles.<br><br>The program incorporates four of the components listed in the description, suggesting that leadership training, although present, may still be evolving.<br><br>Efforts are underway to facilitate connections and collaborations between local researchers, scientists, and institutions. | The program has substantially developed a pool of skilled individuals with strong leadership capabilities.<br><br>The approach incorporates mentorship and train-the-trainer models, ensuring local talent receives personalized and in-depth guidance and can pass on their knowledge to others.<br><br>The program actively honors community perspectives of the marine environment, whereby local insights play a pivotal role in shaping research agendas.<br><br>A system has been established to ensure that local researchers access an extensive network of connections, collaborations, opportunities, and resources to prepare themselves for leadership roles in the deep-sea community. |

OCEAN DISCOVERY LEAGUE

# LONG-TERM IMPACT AND SUSTAINABILITY

## (NON-NEGOTIABLE)


## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Long-Term Impact and Sustainability (Non-Negotiable)

## 1. Definition

Ensuring the enduring and meaningful effects of capacity development programs over an extended period, not just during the immediate program cycle. It involves creating lasting benefits for the program's target group (e.g., individuals, communities, and institutions), enabling positive outcomes to continue to evolve.

This approach includes the following:

- Skill retention and development of researchers (may include ongoing training, mentorship, and opportunities for skill enhancement).
- Cultivating a sense of ownership and responsibility among participants and stakeholders to actively contribute to the program's outcomes and goals
- Conducting research that contributes meaningfully to long-term marine conservation and management efforts.
- Promoting collaboration and knowledge transfer within the deep-sea community on a broader scale.
- Securing diverse funding sources to ensure the program's financial sustainability beyond the initial program cycle.

## 2. Initial Reflection

- How does your capacity development program ensure its positive impact endures and continues to grow beyond its timeframe, fostering lasting benefits for the target group (e.g., individuals, communities, and institutions)?
- Use the level descriptions to help you with your answer.

## 3. Assessment

Based on your reflection, identify the maturity level that best describes your program's current position within this component. It's perfectly fine if you find yourself spanning across multiple levels.

## 4. Next Steps

The direction you choose will depend on your capacity and priorities. Ideas on how to integrate your reflections into your plan are listed on page 15.

# Long-Term Impact and Sustainability (Non-Negotiable)

## Scaled Descriptions Initial, Intermediate, Advanced

| Initial | Intermediate | Advanced |
|---|---|---|
| The program does not fully consider sustainable, long-term impacts, incorporating three or fewer components listed in the description.<br><br>The organization may address skill retention and development, but long-term ownership, research, collaboration, and funding sources are limited.<br><br>The program focuses on achieving immediate outcomes without a robust plan for sustained impact. | The program has considered long-term impacts, incorporating four components listed in the description.<br><br>There is a moderate focus on sustainability, with efforts to address skill retention and development, foster a sense of ownership, conduct research contributing to marine conservation, promote collaboration, and seek funding beyond the initial program cycle.<br><br>While the approach has improved regarding sustainability, these efforts can be further strengthened and expanded. | The program demonstrates enduring and long-term impacts, with a strong focus on sustainability. All the components have been fully integrated.<br><br>The approach is comprehensive and strategic, ensuring that positive outcomes are maintained and continue to evolve, contributing to lasting benefits for the target group and the broader marine conservation and protection goals.<br><br>These outcomes will include:<br>• The target group has a sense of responsibility/accountability and ownership for the program's outcomes and goals<br>• Diversified funding sources/streams available for the target group<br>• Continuous knowledge transfer within the broader deep-sea community |

OCEAN DISCOVERY LEAGUE

# BUILDING EQUITABLE RESEARCH PARTNERSHIPS

## (ADAPTIVE)


## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Building Equitable Research Partnerships (Adaptive)

## 1. Definition

Focuses on building equitable research partnerships with communities. This involves collaborating with local people and organizations to develop their skills, knowledge, and resources, enabling them to participate in research and actively guide their development.

This component goes beyond individual skill development to encompass the broader systems that support local research, including:

- Facilitating the sharing and exchanging knowledge and best practices among individuals, institutions, and communities.
- Supporting the development of essential infrastructure and resources to enable practical research and capacity-building activities.
- Providing access to research funding, equipment, and technology to enable individuals and institutions to conduct impactful research.
- Foster meaningful partnerships and collaborations with local communities and ensure they actively participate in the capacity development process.
- Promoting a culture of continuous learning and professional development through ongoing support, mentorship, and access to resources.
- Strengthening the capacity of institutions to support research, education, and innovation within their communities.

## 2. Initial Reflection

- How does your program ensure that research partnerships are equitable and enable communities to actively participate in and guide research, leading to lasting benefits beyond the program's timeframe?
- Use the level descriptions to help you with your answer.

## 3. Assessment

Based on your reflection, identify the maturity level that best describes your program's current position within this component. It's perfectly fine if you find yourself spanning across multiple levels.

## 4. Next Steps

The direction you choose will depend on your capacity and priorities. Ideas on how to integrate your reflections into your plan are listed on page 15.

# Building Equitable Research Partnerships (Adaptive)

## Scaled Descriptions Initial, Intermediate, Advanced

| Initial | Intermediate | Advanced |
|---|---|---|
| Partnerships are newly formed or informal, with limited community involvement.<br><br>Research priorities are mainly set by external researchers.<br><br>Programs are often stand-alone activities with a focus on basic participation.<br><br>There's a limited understanding of the challenges to capacity development.<br><br>The principles of agency, autonomy, and self-determination still need to be central, and community ownership needs to be actively promoted. | Partnerships are more established, with regular communication and joint activities.<br><br>Communities have a more significant say in research decisions.<br><br>Efforts to build local capacity are underway.<br><br>There's a growing awareness of the challenges to capacity development.<br><br>The focus is shifting beyond participation to include community agency, autonomy, and ownership. | Partnerships are strong and equitable, with shared decision-making and mutual benefits.<br><br>Communities lead or co-lead research initiatives.<br><br>Local institutions can sustain research activities.<br><br>Programs are strategically designed with a deep understanding of potential challenges.<br><br>The focus extends beyond participation to include community leadership, decision-making, and addressing institutional needs. |

OCEAN DISCOVERY LEAGUE

# AMPLIFICATION OF RESEARCH

## (ADAPTIVE)


## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Amplification of Research (Adaptive)

## 1. Definition

Actively working to amplify the visibility, reach, and impact of research efforts conducted by individuals, institutions, or communities in the deep-sea sector, ensuring that the knowledge generated extends beyond the immediate scientific community and contributes to lasting positive change.

Aspects of this include:

- Effectively communicating and disseminating research findings to diverse audiences using various platforms and accessible language (particularly in local vernacular);
- Fostering collaborations and networking opportunities to amplify the impact of research, bringing together diverse perspectives and expertise, and ensuring the continuation and expansion of research endeavors beyond the immediate program cycle.
- Actively involve local communities in research activities, sharing findings in accessible formats with them, and facilitating the sharing and adoption of methodologies and technologies for local ownership and participation.

## 2. Initial Reflection

- How does your program increase the impact, visibility, and influence of research efforts conducted by individuals, institutions, or communities in the deep-sea sector?
- Use the level descriptions to help you with your answer.

## 3. Assessment

Based on your reflection, identify the maturity level that best describes your program's current position within this component. It's perfectly fine if you find yourself spanning across multiple levels.

## 4. Next Steps

The direction you choose will depend on your capacity and priorities. Ideas on how to integrate your reflections into your plan are listed on page 15.

# Amplification of Research (Adaptive)

## Scaled Descriptions Initial, Intermediate, Advanced

| Initial | Intermediate | Advanced |
|---|---|---|
| Initial efforts are primarily focused on immediate research activities, but greater emphasis must be placed on extending impact, visibility, and influence beyond the immediate context.<br><br>Some one-off efforts are made to communicate or publicize participants' research with the broader scientific community. | A concerted effort exists to communicate and disseminate research to a broader audience, but these efforts are primarily limited to the duration of the programmatic cycle.<br><br>Several short-term and one-off collaboration and networking initiatives enhance the visibility of the participant's research. | An interdisciplinary and comprehensive approach is utilized for effective communication and dissemination of complex research findings to diverse audiences.<br><br>Collaboration and networking efforts have matured into robust, long-term initiatives. These initiatives enhance the visibility of participants' research and shape discussions at the international level.<br><br>Researchers strategically focus on ensuring the continuation and expansion of research efforts beyond the immediate program cycle.<br><br>Methodologies and technologies are actively shared, adopted, and applied in complex real-world scenarios involving local communities. |

OCEAN DISCOVERY LEAGUE

# COMPETENCY LEADS TO ADAPTABILITY

## (ADAPTIVE)


## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# Competency Leads to Adaptability (Adaptive)

## 1. Definition

Developing skills and knowledge that enable researchers to navigate the evolving challenges and advancements in the field of deep-sea research and exploration.

This approach includes the following:

- Interdisciplinary and versatile technical and scientific research skills to adapt to new methodologies and technologies.
- Critical analysis skills for complex problems and informed decision-making based on new insights.
- Proactive problem-solving and innovation.
- Effective communication and collaboration with various stakeholders, including policymakers, industry partners, and local communities, to ensure local research efforts align with broader global developments.

## 2. Initial Reflection

- How does your program develop skills and knowledge that enable researchers to navigate evolving challenges and advancements in the field of deep-sea research?
- Use the level descriptions to help you with your answer.

## 3. Assessment

Based on your reflection, identify the maturity level that best describes your program's current position within this component. It's perfectly fine if you find yourself spanning across multiple levels.

## 4. Next Steps

The direction you choose will depend on your capacity and priorities. Ideas on how to integrate your reflections into your plan are listed on page 15.

# Competency Leads to Adaptability (Adaptive)

## Scaled Descriptions Initial, Intermediate, Advanced

| Initial | Intermediate | Advanced |
|---|---|---|
| While the program effectively focuses on foundational skill development, participants would also benefit from further development in the following areas:<br>• Engage in interdisciplinary decision-making and apply insights to real-world scenarios.<br>• Apply innovation to problem-solving concepts.<br>• Explore collaborations, such as cross-sector partnerships, to address complex challenges and advancements in the industry | A concerted effort exists to communicate and disseminate research to a broader audience, but these efforts are primarily limited to the duration of the programmatic cycle<br><br>Several short-term and one-off collaboration and networking initiatives enhance the visibility of the participant's research. | Competency development is robust and proactive, with a strong emphasis on preparing participants to effectively navigate the evolving deep-sea sector.<br><br>Participants hold leadership positions in their field, and have mastered complex methodologies and technologies. with some having pioneered their own frameworks and methods. |

OCEAN DISCOVERY LEAGUE

# THEORY OF CHANGE DEVELOPMENT

## (OPTIONAL BUT RECOMMENDED EXERCISE)

**DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL**

# Theory of Change

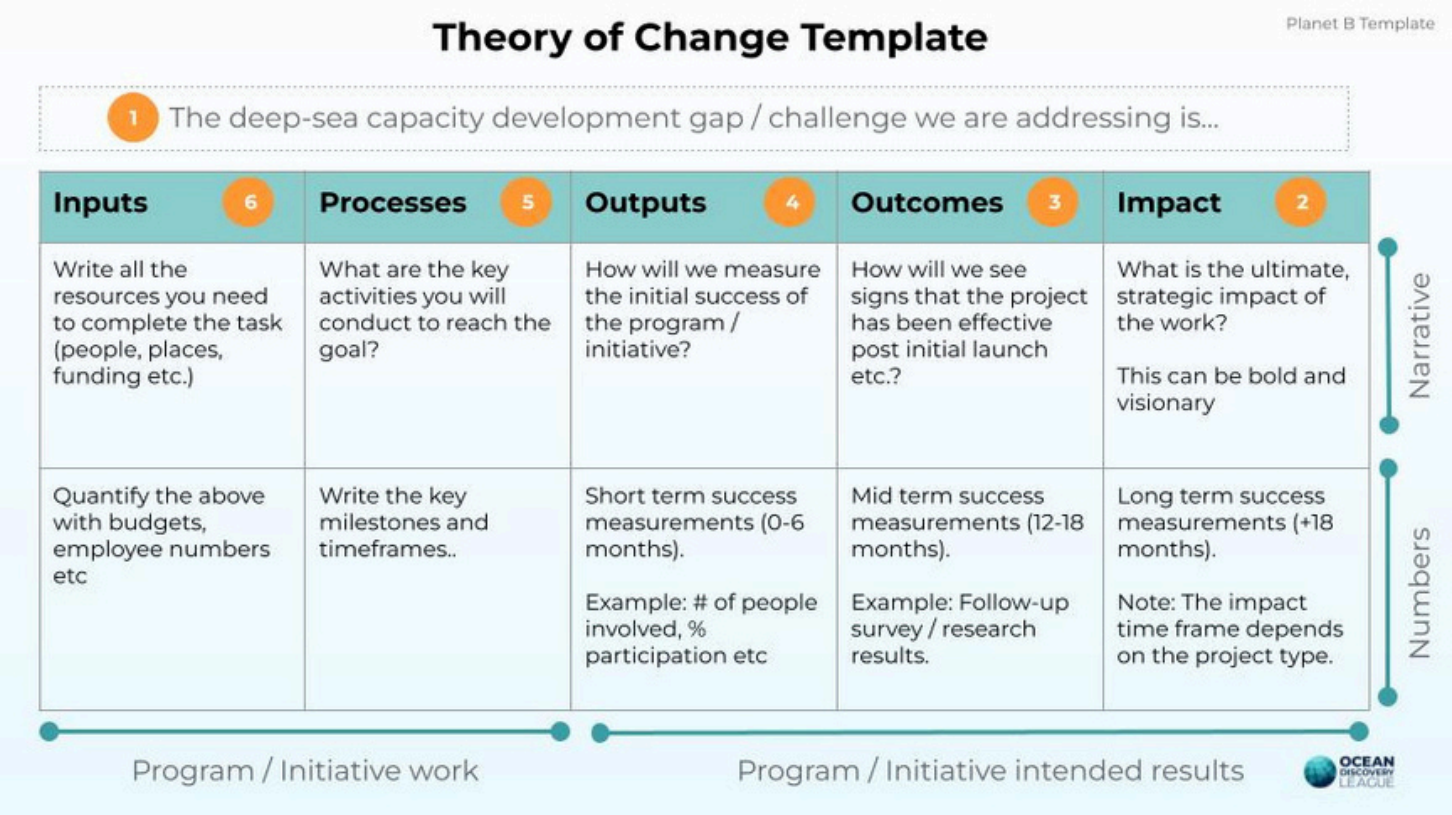
## Developing a Theory of Change

A Theory of Change is a useful tool for planning and evaluating capacity development programs. It outlines how and why a desired change is expected to occur. By mapping out all the necessary steps and outcomes, it connects your program's activities to its goals. This process involves working backward from the long-term goals and identifying all the preconditions required to achieve them.

Although it is ideally developed at the beginning of a program—especially during the planning phase—a Theory of Change can be created or revised at any stage. It is a living document that should evolve as your program progresses and as you gain more insights.

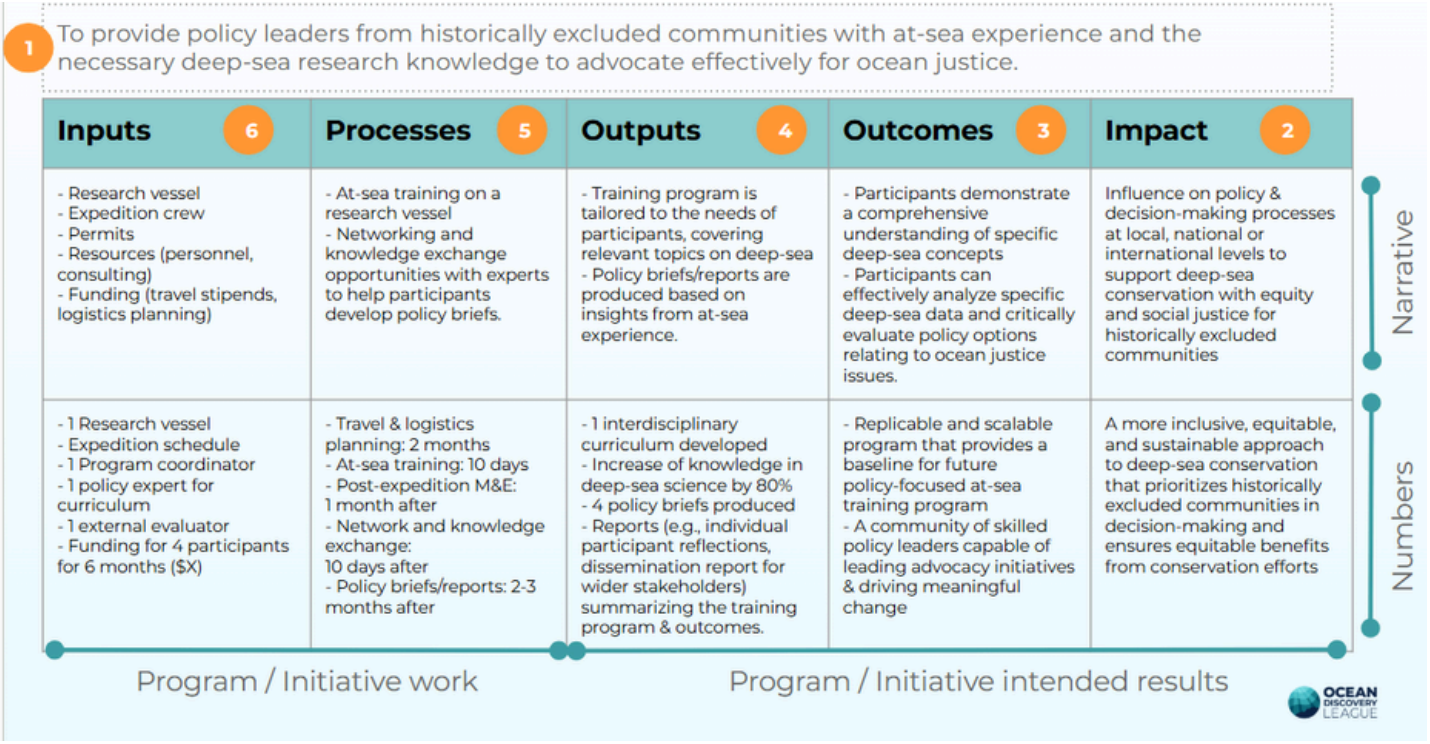
## Guide to Using a Theory of Change

Follow the numbered steps (1-5) outlined in the template. If you are unsure what is required in a certain section, refer to the examples below the template.

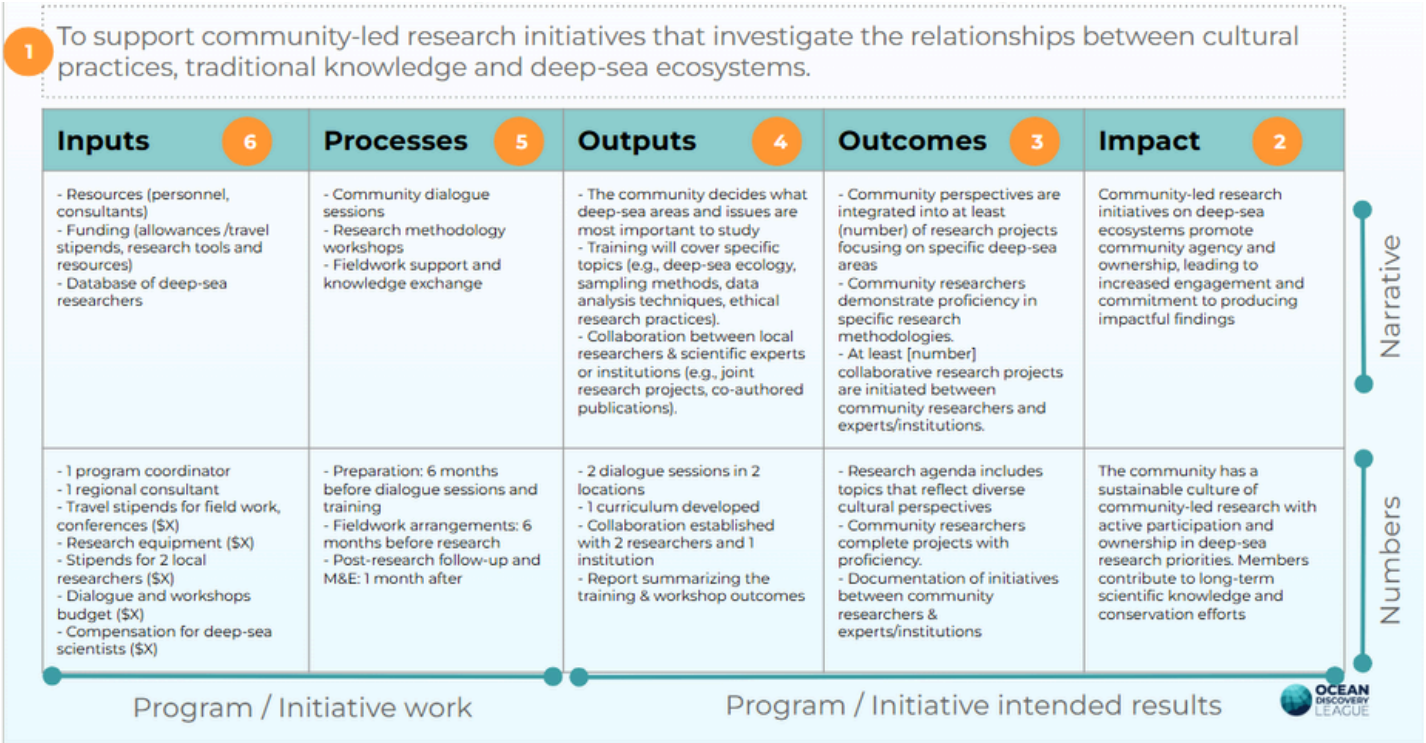


Here are two examples for you to follow, including (1) a well-funded organization and (2) a grassroots organization.

## Theory of Change Template: Well-funded organization




## Theory of Change Template: Grassroots organization



OCEAN DISCOVERY LEAGUE

# RESOURCES

## DEEP-SEA CAPACITY DEVELOPMENT MATURITY MODEL

# About the Authors

**Nadiah Rosli**
**Capacity Development Program Manager, Ocean Discovery League**
Nadiah is a freelance journalist, communications specialist, and project manager from Malaysia with extensive conservation experience. She has worked with organizations such as WWF-Malaysia, Animal Projects & Environmental Education Malaysia, and Earthworm Foundation. Her writing explores the intersection of science, culture, and nature, with work featured in VICE (Motherboard), Scidev.net, New Naratif, and more.

**Katie Leeper**
**Community Engagement Manager, Ocean Discovery League (2023-2024)**
Katie coordinated community engagement for the Ocean Discovery League, supporting both internal programs and the broader ocean community. She has a strong background in marine conservation, science communication, and volunteer management. Katie values collaboration and enjoys building meaningful connections across diverse communities.

**Dr. Karlisa Callwood**
**Monitoring and Evaluation Consultant**
Dr. Karlisa Callwood is a marine scientist and educator focused on equity, inclusion, and community engagement in STEM. Her work bridges science, culture, and social justice with the goal of expanding access to underrepresented groups. She brings deep expertise in research, evaluation, and nonprofit leadership to support inclusive practices and build capacity in underserved communities.

## Reviewers

**Veta Wade**: Founder, Fish 'N Fins Inc., and Environmental Consultant, Montserrat

**Dr. Zoleka Filander**: Deep-Sea Researcher, South Africa. Department of Forestry, Fisheries and the Environment, Oceans and Coast Branch, Oceans and Coastal Research Chief Directorate, Biodiversity and Coastal Research Directorate. Nelson Mandela University, Institute for Coastal and Marine Research

## About Ocean Discovery League

Founded by deep-sea explorer Dr. Katy Croff Bell, Ocean Discovery League's mission is to accelerate deep-ocean exploration by developing accessible systems to broaden the community of those who explore and understand the deep sea. ODL is developing a strategic approach to expand the area of the seafloor that is explored, mapped, and characterized while reducing expenses by creating lower-cost, easier-to-use tools and technology. These actions, along with a more targeted approach to selecting exploration locations, will expand deep ocean exploration to a broader community of explorers.

# Glossary

| | |
|---|---|
| **Evaluation** | Evaluation is the systematic assessment and analysis of an initiative or program's design, implementation, and outcomes. It aims to determine the intervention's effectiveness, efficiency, relevance, and sustainability by examining its strengths, weaknesses, impacts, and implications. Evaluation findings inform decision-making, learning, and accountability. |
| **Exposure** | Deliberate involvement in impactful experiences aimed at broadening one's knowledge, skills, and perspectives - entails embracing open-mindedness, curiosity, and a readiness to learn while actively seeking new challenges and growth opportunities. Individuals immerse themselves in diverse experiences, facilitating firsthand learning and fostering personal and professional development. |
| **Initiative / Program** | An initiative or program is a planned effort to address specific objectives or solve problems within a defined timeframe. It involves coordinated activities, resources, and strategies to achieve desired outcomes. |
| **Local communities** | Groups of people who live in a specific geographic area or share common interests, culture, or identity within that area and have rights or interests. |
| **Long-term** | The gradual unfolding of change in the program over a year or more, considering individual, organizational, and societal evolution and adaptability along a continuum of change. Long-term emphasizes continuous learning and knowledge transmission across generations and communities to foster resilience and improvement that extends beyond short-term objectives |
| **Mentoring** | Mentoring is a structured and enduring process in which experienced individuals, known as mentors, provide guidance, support, and valuable insights to aspiring leaders or professional learners. Mentors share their knowledge and experiences to help mentees grow, excel in their roles, and navigate career transitions. This may include providing advice on career development, offering feedback on work performance, or introducing mentees to professional networks. Mentoring is a reciprocal process where both mentors and mentees can learn and grow from the experience. Ultimately, mentoring empowers individuals to achieve their full potential by fostering self-awareness, developing key skills, and building confidence. |
| **Monitoring** | Monitoring is a process to periodically collect, analyze, and use information to actively manage performance, maximize positive impacts, and minimize the risk of adverse impacts. It is an important part of effective management because it can provide early and ongoing information to help shape implementation before evaluation. Source: Better Evaluation |

| | |
|---|---|
| **Stakeholders** | Stakeholders are individuals, groups, organizations, or entities that have a vested interest in the success of a capacity development program—whether it's through its impact on their own goal. They can be internal or external to the organization promoting the program, such as NGOs, governmental agencies, community members, funding agencies, policymakers, experts, and practitioners. Stakeholders actively shape the program's design, execution, and sustainability by providing input, resources, support, and feedback. |
| **Theory of Change** | A theory of change is a comprehensive and explicit description or model articulating how and why a desired change is expected to occur due to specific interventions or actions. By outlining the underlying assumptions, causal pathways, intermediate outcomes, and long-term impacts, it helps stakeholders understand the logic behind the chosen strategies and interventions, and how they contribute to achieving the desired change. A theory of change serves as a roadmap for planning, implementing, and evaluating programs or initiatives. |
| **Training** | An element of capacity development that could be done in person or virtually, it focuses on enhancing knowledge, experience, skills, and behaviors to tackle specific issues/problems. |

## Organization Acronyms

| | |
|---|---|
| **ODL** | Ocean Discovery League |
| **COBRA** | Crustal Ocean Biosphere Research Accelerator |
| **UNOLS DeSSC** | The Deep Submergence Science Committee (DeSSC) University National Oceanographic Laboratory System |
| **DOOS DOERs** | Deep Ocean Observing Strategy Deep Ocean Early-career Researchers |
| **OET** | Ocean Exploration Trust Nautilus Exploration Program |
| **NOAA OE** | National Oceanic and Atmospheric Administration Office of Ocean Exploration |

# Additional Monitoring & Evaluation Resources

| Source | Resource Name | Details | Notes |
|---|---|---|---|
| MEERA | MEERA (My Environmental Education Evaluation Resource Assistant) | Online directory | An online "evaluation consultant" to assist with environmental education evaluation needs. It will match resources to your evaluation experience. |
| Better Evaluation | Manager's Guide to Evaluation | Online resource | An interactive guide that goes through the steps of planning and managing an evaluation, including overseeing design and choice of methods and processes |
| Better Evaluation | The Rainbow Framework | Online resource | Provides brief descriptions of methods, processes, and approaches that can be used in evaluation, and organizes them according to the different tasks involved in an evaluation or a monitoring system. |
| Better Evaluation | M&E Capacity Building: Is it really that difficult? | 36 page PDF | The resource describes key concepts in capacity building and M&E and various tools and approaches that can be used. |
| NSF | The 2010 User-Friendly Handbook for Project Evaluation | 150 page PDF | This resource is written for project coordinators with the National Science Foundation (NSF) with a basic guide for evaluating NSF's educational projects. All the information provided can be used for non-NSF programs as well. |
| NSF | CAISE PI Guide: Managing Evaluation in Informal STEM Ed Projects (2011) | 80 page PDF | This resource is designed to help project coordinators of informal STEM education projects integrate evaluation into all project design, development, and implementation phases. |
| NAAEE | NAAEE Guidelines for Excellence: Environmental Education Programs (2022) | 110 page PDF | A set of recommendations for developing and implementing environmental education programs. These recommendations provide a tool for ensuring a firm foundation for new programs, demonstrating program value, and informing improvements. |
| GEO REU | GEO REU Program Evaluation | Online resource | An online repository of guides to help program coordinators with developing an assessment plan, formative and summative evaluation, and helpful evaluation tools that can be used. |

# References


Bergström, L., & Utbildning & Video. (2002). Methods for capacity development: A report for Sida's project group "Capacity development as a strategic question." Sida. https://cdn.sida.se/publications/files/sida1705en-no-10-methods-for-capacity-develpoment.pdf

BetterEvaluation. (2022.). Evaluating capacity development. Retrieved from https://www.betterevaluation.org/methods-approaches/themes/evaluating-capacity-development

European Parliament. (2017). Understanding capacity-building/capacity development: A core concept of development policy (Briefing No. PE 599.411). European Parliamentary Research Service. https://www.europarl.europa.eu/RegData/etudes/BRIE/2017/599411/EPRS_BRI(2017)599411_EN.pdf

Greijn, H., Hauck, V., Land, A., & Ubels, J. (Eds.). (2015). Capacity development beyond aid. Retrieved from https://www.idos-research.de/uploads/media/CAPACITY_BOOKLET_ENG_WEB.pdf

James, R. (2009). Just do it: Dealing with the Dilemmas in Monitoring and Evaluating Capacity Building. INTRAC (the International NGO Training and Research Centre). Retrieved from https://www.intrac.org/wpcms/wp-content/uploads/2016/09/Praxis-Note-49-Dealing-with-the-Dilemmas-in-Monitoring-and-Evaluating-Capacity-Building-Rick-James.pdf

Harden-Davies, H., Amon, D. J., Vierros, M., Bax, N. J., Hanich, Q., Hills, J. M., Guilhon, M., McQuaid, K. A., Mohammed, E., Pouponneau, A., Seto, K. L., Sink, K., Talma, S., & Woodall, L. (2022). Capacity development in the Ocean Decade and beyond: Key questions about meanings, motivations, pathways, and measurements. Earth System Governance, 12, 100138. https://doi.org/10.1016/j.esg.2022.100138

INTRAC (the International NGO Training and Research Centre). (2017). Outputs, Outcomes, and Impact: Evaluating development projects and programmes. Retrieved from https://www.intrac.org/wpcms/wp-content/uploads/2017/01/Outputs-outcomes-and-impact.pdf

Local Government Academy Philippines. (2016). The LGU Capacity Assessment and CapDev Agenda Formulation Toolkit Second Edition: A Guide to the new SCALOG and CapDev Agenda Processes and Tools. Retrieved from https://lga.gov.ph/uploads/publication/attachments/1590501045.pdf

# References (cont.)

PlanetB. (2019, May 14). A simple guide to the Theory of Change model. Retrieved from https://planetb.com.au/2019/05/14/a-simple-guide-to-the-theory-of-change-model/

Organisation for Economic Co-operation and Development (OECD). (2011.). Paris Declaration and Accra Agenda for Action. Retrieved from https://www.oecd.org/dac/accountable-effective-institutions/48315248.pdf

Proença, D., & Borbinha, J. (2016). Maturity Models for Information Systems - A State of the Art. Retrieved from: https://www.sciencedirect.com/science/article/pii/S1877050916324486?via%3Dihub

Shapiro, I. (2005, January). Theories of Change. Beyond Intractability. Conflict Information Consortium, University of Colorado, Boulder. Retrieved from http://www.beyondintractability.org/essay/theories-of-change

Simister, N., Morris, L., James, R., & Napier, A. (2021). M&E of Capacity Strengthening. INTRAC (the International NGO Training and Research Centre). Retrieved from https://www.intrac.org/wpcms/wp-content/uploads/2021/01/ME-of-capacity-strengthening.pdf

Theory of Change. (2023.). What is Theory of Change? Retrieved from https://www.theoryofchange.org/what-is-theory-of-change/

United Nations Department of Economic and Social Affairs. (2020). Blended learning methodologies for capacity development. United Nations. https://www.un.org/development/desa/da/wp-content/uploads/sites/52/2020/11/BLENDED-LEARNING-METHODOLOGIES-FOR-CAPACITY-DEVELOPMENT.pdf

United Nations Development Group. (2017). Capacity Development: Practice Note (UNDAF Companion Piece). Retrieved from https://unsdg.un.org/sites/default/files/UNDG-UNDAF-Companion-Pieces-8-Capacity-Development.pdf

Vallejo, B., & Wehn, U. (2016). Capacity Development Evaluation: The Challenge of the Results Agenda and Measuring Return on Investment in the Global South. World Development, 79, 1-13. https://doi.org/10.1016/j.worlddev.2015.10.044