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# MONITORING, EVALUATING, AND LEARNING FROM BIODIVERSITY CONSERVATION'S BENEFITS ACROSS SECTORS

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## **BRIDGE CONTRACT INFORMATION**

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## **DISCLAIMER**

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## ACRONYMS

<b>BRIDGE</b>	Biodiversity Results and Integrated Development Gains Enhanced
<b>CITES</b>	Convention on International Trade in Endangered Species
<b>CLA</b>	Collaborating, Learning, and Adapting
<b>DFAT</b>	Department of Foreign Affairs and Trade (Australia)
<b>DfID</b>	Department for International Development (U.K.)
<b>DRG/CSP</b>	Center of Excellence on Democracy, Human Rights, and Governance, Cross-Sectoral Programs
<b>FAB</b>	Office of Forestry and Biodiversity
<b>FBL</b>	Fisheries, Biodiversity, and Livelihoods (Senegal)
<b>GBP</b>	Guatemala Biodiversity Project
<b>IUU</b>	Illegal, Unreported, and Unregulated Fishing
<b>MEL</b>	Monitoring, Evaluation, and Learning
<b>PEA</b>	Political Economy Analysis
<b>SFMP</b>	Sustainable Fisheries Management Project (Ghana)
<b>TNRC</b>	Targeting Natural Resource Corruption
<b>TWP</b>	Thinking and Working Politically
<b>USAID</b>	United States Agency for International Development

# CHAPTER ONE: THE WHYS AND HOWS OF MEASURING BENEFITS ACROSS SECTORS

## I. INTRODUCTION

Decades of biodiversity programming have contributed to human well-being through improved food security, governance, health, and economic growth. These benefits are provided by ecosystem services—such as clean water, food provisioning, and reduced natural disaster risk—and by programming co-benefits to beneficiaries such as diversified livelihoods, promotion of gender equity, increased government transparency, and contributions to peace and security. These benefits demonstrate that “conservation is development,” and that biodiversity programming can yield positive outcomes across the USAID portfolio.

Although the benefits of biodiversity programming to USAID’s development goals are broadly recognized, the contributions are often not measured by monitoring strategies nor included in program evaluations and learning agendas. This gap in monitoring, evaluation, and learning (MEL) for benefits across sectors limits USAID’s ability to understand the value biodiversity conservation brings to other sectors and the conditions under which these benefits are maximized. By expanding MEL to measure benefits across sectors (referred to as “integrated MEL” in this document), USAID can better design, implement, and adaptively manage activities that create multiple benefits from development funding.

One of the challenges to integrated MEL is the real and perceived time, capacity, and financial costs and complexity of implementing it. Developing and implementing traditional program baselines, performance monitoring, evaluation strategies, and learning agendas is costly in terms of staffing requirements and material resources. Adding additional components to these processes for integrated MEL may increase costs and complexity and add management burden to both USAID and implementing partners. Therefore, identifying approaches that maximize the opportunities for tracking benefits across sectors while managing costs is essential.

To better understand how USAID biodiversity programming might more effectively and efficiently monitor, evaluate, and learn from its benefits across sectors, the Office of Forestry and Biodiversity (E3/FAB) worked with the USAID Biodiversity Results and Integrated Development Gains Enhanced (BRIDGE) and Measuring Impact 2 (MI2) activities to identify some of the challenges and opportunities related to integrated MEL. To do this, FAB, BRIDGE, and MI2 used a combination of desk review of USAID projects and activities and interviews with USAID staff and implementing partners. From these, this team developed a short list of lessons learned from USAID experience and illustrative examples of integrated MEL. This report is a starting point for USAID environment staff seeking to develop MEL to measure the impact of biodiversity programming across sectors, both in order to demonstrate biodiversity’s contributions to broader USAID goals, and to learn and adapt for future programming.

## PURPOSE AND STRUCTURE OF THIS DOCUMENT

The purpose of this document is to promote monitoring, evaluation, and learning that measures the benefits that USAID biodiversity programming provides across development sectors. By doing so, USAID staff will be able to better demonstrate the value of their biodiversity programming and identify the conditions under which biodiversity investments can yield the broadest possible range of benefits. This document provides an introduction to the potential positive benefits biodiversity programming can deliver across development sectors and the reasons for developing MEL plans that measure these

benefits; identifies lessons learned from USAID’s work in the field; and illustrates the types of indicators and learning questions that might be useful in measuring and learning from these benefits. It is divided into three chapters:

- **Chapter One** provides the rationale for using integrated MEL to measure benefits across sectors, some brief examples of the cross-sectoral benefits provided by biodiversity programming, and lessons learned from USAID programming. Though these lessons concentrate on activity-level MEL, they also discuss how this may contribute to broader institutional learning around the benefits of integrated programming.
- **Chapters Two and Three** provide two examples for integrating cross-sectoral development outcomes in MEL and the types of learning questions and indicators that might be useful for this work. These examples focus on fisheries management and forestry (respectively) and are intended to be illustrative and encourage USAID environment staff to identify the types of considerations that might be important in their own work.

Due to the complexity of reporting requirements for activities that receive funding from multiple sectors (e.g. co-funded biodiversity and food security programming), this report focuses on opportunities to measure cross-sectoral benefits that result from biodiversity-funded programming. That said, the lessons learned should be broadly applicable to integrated programming regardless of the source(s) of funding.

In addition, this report does not intend to prescribe specific indicators, learning questions, or other MEL components. Instead, this report provides USAID environment staff with lessons learned from their colleagues and implementing partners, and illustrative examples of how they might begin integrating indicators and learning questions related to other sectors into their own work.

Lastly, to ensure that the examples provided in Chapters Two and Three are as relevant as possible to USAID biodiversity program design and implementation, they are illustrated using results chains-based theories of change in alignment with current USAID biodiversity best practices. This approach uses results chains to illustrate the logic underlying cross-sectoral development outcomes and provides a framework around which key MEL elements such as indicators, evaluation questions and data needs, and learning questions can be organized. A full description of these best practices is provided by the USAID Biodiversity Programming How-To-Guides (USAID 2016).

## WHO SHOULD USE THIS DOCUMENT?

The primary audience for this document is USAID environment staff who are interested in measuring, demonstrating, and learning from the benefits of their programming across sectors. This work might facilitate advocating for additional MEL resources with program and front office staff; identifying efficient mechanisms for conducting MEL of benefits across sectors; designing MEL strategies based on USAID biodiversity programming best practices; and using these to learn about and adapt programming.

An additional audience for this document is USAID mission program and front-office staff who are interested in demonstrating the broader development impacts of their biodiversity programming but may be concerned about the additional costs in time and resources. This report aims to help those staff better understand the benefits of this work and how it might be conducted without substantial increases in program cost or effort.

A third potential audience for this report is the USAID partners that are instrumental in developing and implementing MEL strategies. Though this document is primarily intended for internal USAID use, the rationale and lessons learned described here may be useful in assisting partners in understanding the value of this work, USAID's experience, and how this approach might be implemented in the context of Agency biodiversity programming.

## II. WHY CONDUCT MEL OF OTHER DEVELOPMENT OUTCOMES

The purpose of this section is to demonstrate the value of the benefits that USAID biodiversity programming provides to cross-sectoral development goals; and explain how biodiversity programming, and USAID operating units, can benefit from MEL of these benefits. Section III then provides the information that Agency staff can use to better weigh the costs and opportunities for MEL of benefits across sectors.

### WHAT ARE CROSS-SECTORAL DEVELOPMENT OUTCOMES?

Biodiversity programming is essential to international development, both for protecting the ecosystems that provide food, clean water, and income to millions, and for the benefits this programming provides across sectors in the form of improved governance, gender equity, and other benefits. The selection of “biodiversity and habitat protections” as one of USAID's primary Self-Reliance Metrics underlines the importance of biodiversity conservation to USAID's broader development objectives, as does the inclusion of conservation of high-priority biodiversity areas in the new Environmental and Natural Resource Management Framework (USAID 2019). USAID's 2019 Policy Framework also highlights the importance of sustainable management of natural resources in overcoming barriers to self-reliance and strengthening resilience to crises.

The USAID Biodiversity Policy recognizes two pathways by which through which biodiversity programming contributes to broader outcomes across sectors: ecosystem services and development co-benefits. In the first of these pathways, biodiversity and healthy ecosystems provide goods and services such as provisioning of food and fuels, or regulation of flooding and water quality that are critical to human well-being. Ecosystem services are particularly important for food security and economic growth. For example, more than three quarters of the leading types of global food crops rely to some degree on wild pollinators for both yield and quality, including leading exports such as cacao and coffee (IPBES 2016). Similarly, wild-caught fisheries are essential to food security, and more than 3.2 billion people rely on fish for more than 20 percent of their protein. Fish are also the most traded foods in the world, and in 2016, the net value of fish exports from developing countries was an estimated \$76 billion—greater than the net exports of rice, sugar, tobacco, and meat combined (FAO 2018).

Ecosystem services are also important for human health. Recent research based on USAID Demographic and Health Survey data found that children living within 3 km of forests had 25 percent greater dietary diversity (Rasolofoson et al. 2018). In addition, higher tree cover in rural areas correlated with significant reductions in downstream diarrheal disease among children (Herrera et al. 2017). The above benefits for food security, economic growth, and health demonstrate the valuable benefits that ecosystem services can yield across development sectors.

In the second of these pathways, biodiversity conservation actions create development “co-benefits” such as building empowered local communities, diversifying livelihoods, promoting gender equality, increasing government transparency and accountability, and contributing to peace and security. For example, trafficking of wildlife parts—such as from tigers, rhinos, and elephants—threatens the survival of these important species; imperils livelihoods; contributes to organized crime, terrorism, and other



kinds of trafficking; and diminishes rule of law and national security. Biodiversity conservation interventions that combat trafficking can thus have benefits for governance, livelihoods, and security.

The potential economic and development value of these benefits are substantial, and more than justify the development of systems to monitor, evaluate, and learn from them. The boxes on this page provide some specific examples of the benefits that biodiversity programming provides across USAID's development portfolio.

Biodiversity programming can improve food security, as illustrated by USAID Southern Africa Regional's Resilience in the Limpopo River Basin activity (2012-2017). By restoring community wetlands in a high mountain catchment in Zimbabwe, the activity improved **food security** for both local and downstream communities by ensuring a more sustainable water supply. The program also observed increases in crop productivity which were attributed to higher populations of bees and other insects that can serve as pollinators, another benefit of the program (USAID 2017a).

Biodiversity programming can lead to significant **economic benefits** for local communities, as illustrated by USAID Philippines' Ecosystems Improved for Sustainable Fisheries activity (2012-2017). By developing a variety of market-based initiatives to improve economic opportunities—including seaweed farming, expanding ecotourism, and sustainable sea cucumber ranching—these initiatives helped decrease the reliance of small-scale fishers on fishing and resulted in a 12 percent increase in employment or better employment in focal areas (USAID 2017b).

By improving watershed management, the USAID Philippines' Emerging Champions for Biodiversity Conservation and Improved Ecosystem Services (2011-2015) activity helped local communities **adapt to climate change**. By restoring forests and establishing multi-layered vegetation along gullies, the activity buffered local communities from extreme weather events. In addition, the ability of the activity to adjust their approaches to an ecologically meaningful scale and adapt them to a variety of land uses and tenure regimes significantly increased their effectiveness compared to gray infrastructure (USAID 2018).

#### WHY MONITOR, EVALUATE, AND LEARN FROM, CROSS-SECTORAL OUTCOMES?

As noted above, the benefits of biodiversity programming can extend far beyond the ecosystems or species the programming is intended to help. Integrated MEL across sectors thus provides three clear benefits to USAID: first, it allows USAID environment staff to better measure the benefits of their programming across development sectors and demonstrate the broader value of biodiversity programming; second, it allows USAID operating units and USAID as an institution to better track their progress toward overall development objectives; and third, it allows USAID environment staff to design activities that maximize these benefits with modest changes in program cost or interventions. Following is a brief description of each of these three benefits.

First, by measuring biodiversity programming's benefits across sectors, USAID environment staff are able to make the connection between protection of ecosystems and species, and the success of USAID's broader development objectives, and thus tell the story of how "conservation is development." Telling this story has two immediate benefits for environment staff. First, it demonstrates the broader value of

biodiversity programming, both for individual USAID operating units and the Agency as a whole. Second, it helps environment staff build bridges with their colleagues across sectors and develop integrated programming that has the opportunity to yield improved outcomes—in reach, sustainability, impact, and efficiency—that may not be possible with single-sector programming. By building the evidence base for biodiversity’s benefits for food security, water and sanitation, governance, and other outcomes, USAID environment staff can build the profile of their work and improve cross-sectoral collaboration.

Second, measuring biodiversity programming’s benefits across sectors more consistently through integrated MEL can better capture USAID’s accomplishments toward development objectives broadly. In cases where biodiversity conservation programming is working in areas or with stakeholders that are important to other sectors, adding appropriate indicators to those activities, allocating funds for their measurement, and attributing those gains might help the USAID mission or office demonstrate increased outcomes despite limited funds. Even where cross-sectoral indicators are not feasible to measure, gains may still be reported through key issue narratives that demonstrate the operating unit’s commitment to USAID’s broader goals. In both cases, this provides an opportunity for technical, program, and front-office staff to discuss MEL strategies to capture these benefits.

Third, integrated MEL offers USAID a chance to learn about the conditions under which cross-sector benefits are realized and possibly adapt programming to maximize them. For example, though the connection between improvements in an ecosystem service and a benefit to another sector might appear logical and possibly inevitable, closer examination of this logic might reveal multiple underlying assumptions, any one of which might limit the ability of biodiversity programming to yield those benefits. Examples of these assumptions and learning questions and indicators that might be used to test them, are provided in Chapters Two and Three.

### III. LESSONS LEARNED FROM USAID PROGRAMMING

Given all that can be gained from integrated MEL, the purpose of this section is to understand the associated costs, identify possible approaches, and review the tools that USAID might use to understand these benefits. To identify key lessons learned from USAID experience, BRIDGE and MI2 conducted desk reviews of 10 USAID projects and activities as well as interviews with 27 personnel, covering both fisheries and forest management (as described in Chapters Two and Three). The broad finding from these lessons is that integrated MEL is feasible, beneficial, and applicable at many scales at USAID. Following are some key lessons learned about MEL of other development outcomes.

### Key Lessons Learned About Integrated MEL

1. The greatest challenges to integrated MEL are a lack of adequate funds and expertise for implementing partners to conduct this work, particularly when faced with reporting requirements for multiple sectors.
2. To ease this reporting burden, it may be useful to move MEL of other development outcomes out of activity monitoring plans and into baseline, midterm, and completion surveys.
3. Household and community surveys, or similar tools, may be a particularly useful means of identifying other development outcomes.
4. MEL of other development outcomes should be treated as designated budget items or program requirements in contracts and agreements, and implemented from the beginning of activities.
5. Multi-sector technical expertise is key to effective MEL of benefits across sectors.
6. USAID's ability to monitor, evaluate, and learn from benefits across sectors may vary substantially from sector to sector.
7. USAID could benefit from MEL processes that extend beyond individual five-year activities and are better able to capture longer-term benefits to other development sectors.
8. Centralized support for MEL across sectors could serve both to standardize indicators and processes, and to enable cross-mission learning.
9. Centralized support may also lay the foundations for answering the "big questions" about integration.
10. Negative effects of biodiversity interventions are as important to measure and learn from as positive effects.

#### **1. The greatest challenges to integrated MEL are a lack of adequate funds and expertise for implementing partners to conduct this work, particularly when faced with reporting requirements for multiple sectors.**

Based on interviews, implementing partners typically bear the majority of the burden for MEL of multiple-sector development outcomes, resulting in pressures on funding, time, and expertise. In simpler cases, implementing partners may be able to subcontract their baseline, midterm, and completion surveys to local experts, an approach that can yield useful and comprehensive data but typically requires additional funds and time. In more complex cases—such as blended funding streams in which other development outcomes are part of ongoing performance monitoring—partners may be required to report results for multiple sectors in multiple reporting portals, placing a substantial burden on limited partner resources. In either case, supporting these partners through additional funding or independent MEL mechanisms may be essential to facilitating integrated MEL.

#### **2. To ease the reporting burden, it may be useful to move MEL of other development outcomes out of activity monitoring plans and into baseline, midterm, and completion surveys**

Desk reviews and interviews also revealed that implementing partners often measured other development outcomes using household surveys or similar tools at the beginning, middle, and end of

activities. These periodic surveys were conducted independently from annual MEL processes and were intended to capture broader outcomes in multiple sectors rather than monitor specific program performance. This approach offers multiple benefits: it ensures that MEL of other development outcomes does not impede regular activity performance monitoring; it limits the expense of MEL of other development outcomes to longer intervals over which benefits are more likely to be realized; and it allows the AOR/COR and activity to establish clear line-items and staff requirements for these more detailed surveys. In addition, this approach allows surveys to focus on other development outcomes, which might be neglected by activity-level performance monitoring.

### **3. Household and community surveys, or similar tools, may be a particularly useful means of identifying other development outcomes**

Household and community surveys, or similar tools such as focus groups or outcome harvesting, have multiple possible benefits for integrated MEL: they allow activities to collect information on many sectors in a single process, including socioeconomic, food security, and health data; the same instrument can be used to collect data throughout the activity; and specialized staff (e.g., resource economists) can be hired expressly for the purpose of conducting the surveys, thus relieving the burden on activity staff. In addition, they can be funded and implemented separately from ongoing program performance monitoring, allowing this data collection analysis to proceed without affecting—or being affected by—program implementation.

It is important to note that not all tools may be appropriate for all sectors. Household and community surveys may be a useful approach for activities that include regular contact with constituents such as fisheries management programming (see Chapter Two). These instruments can generate valuable information through basic demographic or community development status data, such as access to public services, infrastructure, household income, and resource control within households. These approaches may not be as useful, however, for activities that work at broader scales or through policy interventions. Alternatively, retrospective approaches such as outcome harvesting allow evaluators to review activities to identify, verify, and make sense of outcomes (USAID 2013); these are particularly suited to uncovering other development outcomes emerging later or unexpectedly from biodiversity activities.

In addition, these tools may vary substantially in their level of effort and funding requirements. Resource requirements for survey tools may range from modest effort for “piggybacking” on existing surveys, to more intermediate levels of effort for focus groups or outcome harvesting, to higher levels of effort for the implementation of stand-alone and multi-community surveys. Many options are available to conduct MEL of benefits across sectors, allowing USAID staff to tailor the tool used for a particular activity to the particular context and degree of interest in MEL of other development outcomes.

### **4. MEL of other development outcomes should be treated as designated budget items or program requirements in contracts and agreements, and implemented from the beginning of activities with support from champions**

Though the most appropriate tools for measuring benefits across sectors may vary, dedicated funding and an early start for MEL of cross-sectoral benefits were consistent recommendations from implementing partners. By setting aside funding in contracts and agreements for this work, USAID staff can ensure that it will be performed throughout the life of the activity. In addition, interviews with implementing partners revealed that MEL of other development outcomes is often considered *after* the creation of baselines and monitoring plans, resulting in an inability to measure important variables or to ask and answer the appropriate questions. MEL of benefits across sectors should thus be included from

the start of activities to ensure that changes in other sectors can be adequately measured. This may be particularly important if surveys are performed only two or three times during the activity lifetime.

Support from champions in mission technical, program, and front offices can be particularly useful in ensuring that MEL of other development outcomes is sufficiently funded and equipped. Champions in technical offices, and particularly AORs and CORs, can ensure that agreements include requirements for integrated MEL elements, and that these are designed and implemented effectively during the lifetime of the activity. Champions in program and front offices can encourage the use of staff time and funding for this work. Identifying champions during the design phase of an activity who support integrated MEL may thus be a particularly important step.

## **5. Multi-sector technical expertise is key to effective MEL of benefits across sectors**

Regardless of the methods used for MEL of benefits across sectors, interviews of implementing partners found that engaging staff with technical expertise in other sectors is helpful in ensuring that the interests of these sectors are addressed during MEL design and implementation. Working with colleagues from other sectors to identify indicators or learning questions that are directly relevant to their interests will ensure that they are immediately useful and significant. Furthermore, including experts from other sectors in conducting, compiling, and applying the results of these processes will help ensure that MEL data are of appropriate quality and used correctly. Examples of this engagement could include AOR/CORs collaborating with Mission technical staff across sectors during MEL design and implementation, or ensuring that activities hire appropriate technical staff as part of their ongoing or periodic MEL of benefits across sectors. These recommendations reinforce the importance of earmarking funds for MEL across sectors and moving this MEL to dedicated activities such as beginning, mid-term, and completion surveys and analysis.

## **6. USAID's ability to monitor, evaluate, and learn from benefits across sectors may vary substantially from sector to sector**

Another consistent finding is that benefits for some sectors are realized earlier in an activity's lifetime, before or during the achievement of biodiversity outcomes (i.e., on the "left-hand" side of results chains), while some sectors realize benefits later on as a consequence of achieved biodiversity outcomes (e.g., on the "right-hand" side). For example, democracy, human rights, and governance and women's economic empowerment results are often instrumental to achieving biodiversity results, and during the course of a five-year activity, it may be possible to see substantial gains in enabling conditions and outcomes in those sectors. On the other hand, food security outcomes (e.g., from increased fish stocks) may only be realized toward the end of or following a five-year activity, and women's empowerment may be a longer-term result of increased economic activity.

Integrated MEL should be designed with these differences in mind, such that MEL of earlier benefits may be able to focus on direct, other-sector outcomes realized during a five-year biodiversity activity, while MEL of later benefits may need to focus more on enabling conditions that will ultimately yield outcomes after the activity has concluded. Regardless of the specific circumstances, expectations and approaches for MEL should be tailored to the activity at hand, such that MEL for some sectors will include both outputs and outcomes, while others may focus on enabling conditions and initial outputs.

**7. USAID could benefit from MEL processes that extend beyond individual five-year activities and are better able to capture long-term benefits to other development sectors**

As noted above, the impacts of biodiversity programming across sectors may not be felt until after the activity is completed or until several activities in the same geographic area have made their impact. As such, long-term and multi-activity learning may be particularly valuable for MEL of benefits across sectors, and might include mission retrospectives, project-level MEL, or independent MEL mechanisms spanning multiple activities through multiple years. This might also include formalizing the roles of long-term mission staff such as Foreign Service Nationals in institutional learning, a function they often already serve. The costs of these measures can range substantially—from redeploying existing mission resources to the development of new MEL mechanisms or activities—and can be scaled to the degree of integration and interest at the operating unit.

**8. Centralized support for MEL across sectors could serve both to standardize indicators and processes, and to enable cross-mission learning**

In addition, centralized support for MEL may be particularly important for other development outcomes given the preliminary nature of this work and need for Agency-wide guidance. Centralized support could be provided by a variety of approaches, including technical assistance to missions from Washington staff or DC-based integrated MEL mechanisms. Such an approach could help missions select indicators and learning questions, implement MEL strategies, and capture the results for institution-wide learning. Furthermore, this approach might allow indicators and learning questions to be standardized across missions such that USAID as a whole can ask and answer questions about biodiversity’s benefits across sectors. That said, it is important to remember that USAID missions are best equipped to understand the nuances and needs of their programming environment, and most effectively design and implement their MEL strategies.

**9. Centralized support may also lay the foundations for answering the “big questions” about integration**

In addition to tracking and learning about the benefits that USAID biodiversity interventions provide across sectors, MEL of other development outcomes offers an opportunity to answer the “big questions” about integration: does integrated programming yield a greater return on investment than single-sector programming, and under what conditions? Integrated programming is sometimes hypothesized to yield substantial benefits over single-sector programming, including improvements in sustainability, impact, reach, and efficiency. As noted above, however, these benefits can come at the cost of increased complexity in design and implementation, and increased time and effort. A key goal of integrated MEL is to determine whether the benefits of integrated programming exceed their costs and identify the conditions under which this is true.

**10. Negative effects of biodiversity interventions are as important to measure and learn from as positive effects**

Though this report has focused on the benefits of biodiversity conservation across sectors through the two pathways of ecosystem services and development co-benefits, the USAID Biodiversity Policy also recognizes a third pathway: depending on the situation, biodiversity conservation goals (e.g., habitat protection) may be in conflict with other-sector interventions (e.g., infrastructure development) resulting in tradeoffs between conservation and broader development objectives. It is thus important to measure and learn from these tradeoffs. For example, while beneficial in the long term, fishing restrictions can cause short-term reductions in household income if new rules are not implemented as

part of a holistic approach that addresses social and economic impacts of the change in fisheries management. As another example, conserving peatlands may result in substantially greater reductions in GHG emissions than forest conservation, but biodiversity conservation programming may seek to focus on larger land areas instead of peatlands in order to preserve important habitats or to meet hectare targets. Understanding these tradeoffs is essential in learning from and adapting USAID biodiversity programming to mitigate these negative effects.

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# CHAPTER TWO: AN EXAMPLE FROM USAID MARINE & FRESHWATER PROGRAMMING: WILD-CAUGHT FISHERIES AND FOOD SECURITY

## I. INTRODUCTION

### WILD-CAUGHT FISHERIES AND DEVELOPMENT

Aquatic ecosystems cover more than 70 percent of the planet's surface and harbor biodiversity equal to the richest terrestrial ecosystems, and much of it remains undiscovered (Andrades et al. 2019). They also provide services that all people, and particularly those in developing countries, depend on for trade, livelihoods, and food security and nutrition. Fish and fisheries products are among the world's most-traded foods, with approximately half coming from developing nations (FAO 2014, 2016). Fish products additionally support the livelihoods of 800 million people and a \$500 billion global economy, accounting for net export value greater than that of meat, tobacco, rice, coffee, and sugar combined (Smith et al. 2010, FAO 2016).

In particular, fish are highly nutritious, providing affordable protein and essential nutrients for billions of people globally. More than 3 billion people rely on fish for almost 20 percent of their animal protein; in 2013, fish accounted for about 17 percent of the global intake of animal protein and 6.7 percent of all protein consumed (FAO 2016, 2018). In some countries with highly productive fisheries like Bangladesh, Cambodia, Ghana, and Indonesia, fish contributes more than half of total animal protein intake (FAO 2018, USAID 2018a). Wild fish, particularly if eaten whole, provide a range of important nutrients including minerals (e.g., calcium, iodine, zinc, iron, selenium, and phosphorus); vitamins (D, A, and B); high quality proteins containing all essential amino acids; and essential fatty acids (FAO 2016). These fatty acids are particularly important for brain development in unborn babies and infants, and fish consumption during pregnancy and lactation also benefits the nutritional and health status of mothers. Furthermore, fish from coastal areas is often dried, processed, and transported to inland areas, thereby contributing to food security and nutrition in areas that do not have fisheries themselves. For example, the intra-regional fish trade in Africa provides nutritious food to communities hundreds of miles from where the fish was caught (USAID 2018b). Small-scale fisheries, which contribute about half of global fish catches and two-thirds of catches for human consumption, are particularly important targets for improved management (FAO 2015).

### MEASURING DEVELOPMENT BENEFITS OF WILD-CAUGHT FISHERIES MANAGEMENT

Despite the clear linkages between improved fisheries management and development goals such as economic growth, livelihoods, food security, and nutrition, measurement of these broader benefits has been limited. By tracing the path from biodiversity outcomes to other development outcomes, identifying key assumptions and learning questions, and using targeted indicators to measure key results, USAID staff can better capture the benefits of biodiversity conservation across sectors, test assumptions, and adapt accordingly. This can allow USAID to more fully account for development outcomes across sectors, maximize the benefits of biodiversity programming for development goals more broadly, and consider when biodiversity conservation may be an appropriate intervention to achieve development goals across sectors, including food security and nutrition.

In light of the contribution of wild-caught fisheries management to food security, the FAB Office and BRIDGE activity examined the pathways through which improved fisheries management leads to food security outcomes, including increases in income, fish consumption, and ultimately nutrition. BRIDGE

conducted a review of monitoring, evaluation, and learning (MEL) plans; annual reports; and evaluations of five USAID activities: Philippines Ecosystems Improved for Sustainable Fisheries (ECOFISH), Enhanced Coastal Fisheries in Bangladesh (ECOFISH-BD), Ghana Sustainable Fisheries Management Project (SFMP), Malawi Fisheries Integration of Society and Habitats Project (FISH), and Philippines Fisheries Improved for Sustainable Harvest (FISH). BRIDGE then conducted interviews with staff from USAID Missions, implementing partner organizations, and the FAB Office to understand their experiences with integrated MEL.

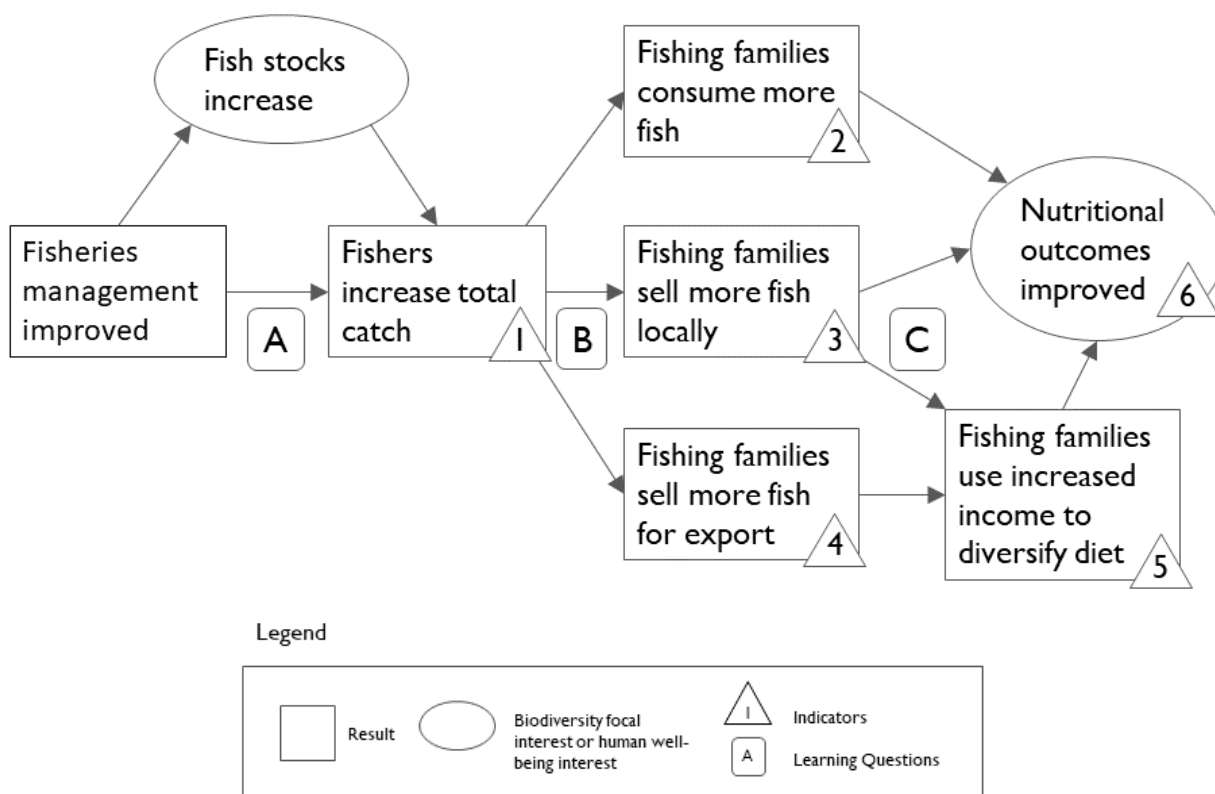
The product of this process is an illustrative example of the logical connections that might lead from improved fisheries management—which protects the habitats and reproductive stock that support enhanced natural productivity of these systems—to increases in total catch, to increased fish consumption and sale, and eventually to the food security result of improved nutrition (as described above; Costello et al. 2016, World Bank 2017). This theory of change, illustrated in the form of a results chain, is followed by illustrative key assumptions and learning questions, and the indicators that can be used to examine and answer them. Notably, this example is meant to be illustrative rather than prescriptive, and its goal is to inspire USAID Missions to identify the sequence of results that might lead from biodiversity outcomes to other sector development outcomes, and the learning questions and indicators needed to develop MEL plans and adaptively manage for these outcomes.

## II. WILD-CAUGHT FISHERIES AND FOOD SECURITY: AN ILLUSTRATIVE EXAMPLE

### THEORY OF CHANGE

In this theory of change (Figure 1), the combination of improved fisheries management and increased fish stocks is hypothesized to result in increased catch for fishers, after which fishing families can consume more fish, sell more fish locally, or sell more fish for export to outside markets. These results then improve nutritional outcomes through the consumption of more fish (and the health benefits noted above); the sale of fish locally, resulting in increased fish consumption in the local community; or the sale of fish both locally and for export, resulting in additional income that can be used to diversify fisher family diets.

Figure 1. Fisheries management and food security illustrative results chain, where letters indicate learning questions and numbers indicate indicators.



Following typical results chain depictions, boxes in this results chain indicate results, circles indicate outcomes, and arrows indicate the causal relationships between results. For more information about the depiction of results chain-based theories of change, please see the USAID Biodiversity How-To Guides (USAID 2016).

### ASSUMPTIONS AND LEARNING QUESTIONS

Arrows in results chains indicate causal relationships between results and represent assumptions in programming logic. These assumptions can be the basis for essential learning questions. In this case, there are three key assumptions:

1. That improvements in fisheries management and increased fish stocks will lead to increased catch for fishers. Though increased stocks typically result in increased catch, understanding the strength of this relationship and how these benefits are distributed between fishers based on wealth, political power, or other variables can allow projects and activities to understand how the catch flow is distributed in fishing communities and later patterns in consumption, income, and nutrition.
2. That increases in catch by fisher families will lead to increased household consumption of fish, increased local sale, or increased sale for export. Though each of these three results are common outcomes of increased catches, understanding the balance between them can allow projects and activities to better track the benefits of their work and adapt accordingly. This

illustrates the importance of monitoring pathways to benefits and the choices that beneficiaries make.

3. That increases in fish consumption or sale will lead to improved nutrition. As noted above, increased fish catch may result in increased household income and thus opportunities to diversify household diets. By monitoring dietary diversity and nutrition outcomes, projects and activities can better understand the magnitude of these improvements and possible alternative routes for this new income (e.g. spending on less nutritious foods or non-food items such as new fishing gear). In addition, household consumption of fish is expected to result in increased nutrition due to the nutritional properties of fish. By monitoring nutrition outcomes, projects and activities can better understand the extent to which and under what conditions the greatest nutritional gains are achieved.

As such, this results chain suggests at least three key learning questions:

- A. Does improved fisheries management result in increased catch for fishers? Which types of fishers are able to increase their catch under improved management rules?
- B. What do fishing families do with their increased catch? Do they consume more, sell locally, or sell for export?
- C. Do nutritional outcomes improve in the geographies of interest? Which pathways most strongly account for changes in nutritional outcomes?

Identifying these assumptions and learning questions are key steps in helping identify how biodiversity outcomes may lead to benefits across sectors, possible failure-points or tradeoffs in this process, and the variables that may be measured to track these results, as described next.

## INDICATORS

Indicator data is essential to measuring biodiversity results and outcomes, and can be particularly useful in measuring, understanding, and learning from the contributions of biodiversity interventions to other development goals. Once key results, assumptions, and learning questions have been identified for a particular development sector (as above), USAID staff can then identify the indicators that can be used to capture key results and measure their progress to outcomes. In addition to measuring the benefits of biodiversity conservation towards another sector's outcomes, these data also allow USAID staff to understand how strategies vary in their impact under different situations, and this type of work can help refine understanding of what works best under different conditions.

To identify illustrative indicators for the example described above, BRIDGE reviewed indicators used by several USAID activities including Philippines ECOFISH, Ghana SFMP, Philippines FISH, Malawi FISH, and Bangladesh ECOFISH-BD to understand how they monitored the results identified in Figure 1. BRIDGE also reviewed indicators used by external organizations such as the World Bank, FAO, and WorldFish to capture food security benefits from fisheries programming. BRIDGE then developed a list of illustrative indicators (Table 1) from USAID activities and external sources for each result in the above results chain, including a subjective measure of the relative level of effort required to collect the corresponding data.

Table 1. Illustrative indicators, where numbers indicate results in Figure 1.

Result	#	Illustrative Indicator	Source of Indicator	How to Measure	Level of Effort
Fishers increase total catch	1	Catch rate of selected fisheries in focal areas (average % change in catch per unit effort by gear type compared to baseline)	USAID/Philippines FISH activity	Focus group interviews with fishers from target communities	Low
Fishing families consume more fish	2	Average number of days in a week that fish is eaten by each member of the household (specifying how the fish is consumed, e.g., in condiments, stew, etc.)	World Food Programme Comprehensive Food Security and Vulnerability Analysis	Focus group interviews with fishers' families or household surveys of target communities	Low to med
Fishing families sell more fish locally	3	Average monthly incomes of fisheries-based livelihood activities from managed fishery (The indicator can also clarify if income is from fish sold locally or for export)	USAID/Bangladesh ECOFISH-BD activity	Household surveys of target communities	Med
Fishing families sell more fish for export	4	Average monthly incomes of fisheries-based livelihood activities from managed fishery (the indicator can also clarify if income is from fish sold locally or for export)	USAID/Bangladesh ECOFISH-BD activity	Household surveys of target communities	Med
Fishing families use export income to diversity diet	5	Prevalence of women of reproductive age consuming a diet of minimum diversity OR Prevalence of children 6-23 months receiving a minimum acceptable diet	USAID Feed the Future 2018 Indicator Handbook	Household surveys of target communities	Med
Nutritional outcomes improved	6	Prevalence of stunted (low height for age) children under five	USAID Feed the Future 2018 Indicator Handbook	Household surveys with children's height measurements of target communities	High

Through indicators such as these, staff working on the illustrative fisheries management activity described here could begin to gather essential information about the activity's contributions to nutrition and food security and begin to answer the learning questions described above. These indicators can help this hypothetical activity trace progress through each result in the results chain and determine if it is indeed making contributions to food security goals; if so, by what pathway; and how these benefits vary under different conditions. In addition, based on these indicators, the activity can specifically answer the three learning questions described above. Though the full complement of indicators described here would help a detailed accounting of the activity's progress from increased fish stocks to food security, even a subset of these indicators may be sufficient to trace this progress and help answer these questions.

The use of these indicators comes with at least three important caveats, as noted in Chapter One. First, collection of these data as part of annual or quarterly activity performance monitoring may place a substantial burden on implementing partners, and may require staff time, expertise, and funding that are not available at this frequency. It may thus be useful to measure these variables on a less frequent basis and as part of dedicated household surveys, focus group interviews, or other mechanisms used to collect information for baseline, mid-term, and end-of-activity assessments.

Second, meaningful changes in some of these indicators—and particularly long-term nutritional outcomes—may not be observable within the typical five-year time period of USAID programming. As such, Missions or other operating units may find it useful to establish MEL mechanisms that extend beyond individual activities to include longer time periods or multiple activities.

Third, these indicators have been chosen so that they might be accommodated within household, focus group, or similar survey methods conducted on a less-frequent basis than activity performance monitoring, as suggested in Chapter One (see Lessons Learned, numbers two and three). They thus have the benefit of requiring less effort and frequency of measurement than direct measurements (e.g., direct observations of fish catch at landing sites). That said, these indicators are intended to be illustrative only, and individual activities can adjust their selection of indicators to fit the degree of detail appropriate for their programming.

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# CHAPTER THREE: AN EXAMPLE FROM USAID FOREST CONSERVATION PROGRAMMING: COMMUNITY FOREST MANAGEMENT

## I. INTRODUCTION

### COMMUNITY FOREST MANAGEMENT AND DEVELOPMENT

Forest ecosystems are critical components of biodiversity but threatened by unsustainable timber harvesting, conversion to agriculture, and other threats and underlying drivers of deforestation and degradation. Forests are also a critical development resource. According to the FAO's 2018 State of the World's Forests, "Forests act as a source of food, medicine, and fuel for more than a billion people... forests hold more than three-quarters of the world's terrestrial biodiversity, provide many products and services that contribute to socio-economic development and are particularly important for hundreds of millions of people in rural areas, including many of the world's poorest" (FAO 2018).

USAID invests in three general approaches to reduce threats to forest ecosystems: improving protection, management, and restoration. Community Forest Management (CFM) is a common approach to improving forest management and reducing legal and illegal deforestation. CFM approaches provide communities the skills and resources, and often help them obtain the legal rights, that they need to manage their forest resources.

CFM activities may also develop community members' skills and resources to manage economic enterprises from the sustainable use of forest resources, including timber and non-timber forest products. These could include community-based forestry or forest enterprises, social forestry, and conservation enterprises (see USAID 2017a for more information about conservation enterprises as stand-alone conservation approaches). In addition to biodiversity conservation, these approaches can also have benefits for other development outcomes, including climate change mitigation, governance, and economic growth. Given their multiple benefits, CFM approaches are common across USAID's terrestrial biodiversity conservation programming (USAID 2018, USAID 2020d).

### MEASURING DEVELOPMENT BENEFITS OF CFM

Similar to the fisheries example described in Chapter Two, however, there is no guarantee that an individual CFM activity will yield these positive outcomes in other sectors. A number of interim results lie between the development of community-enabling conditions and technical capacity supported by USAID programming, and the positive outcomes in economic growth, climate mitigation, and governance that are expected to occur. The objective of the integrated monitoring, evaluation, and learning (MEL) approaches described here is to allow USAID staff to measure these results, learn from their findings, and adjust programming accordingly.

Given the prevalence of this approach in USAID programming and the clear benefits across sectors, this example will use CFM to illustrate how to capture benefits beyond biodiversity. To understand how USAID programming might incorporate integrated MEL of benefits across sectors, Measuring Impact II examined USAID projects and activities that apply CFM-related approaches, focusing on those activities working with indigenous and local communities on forest management in Indonesia and Peru (including the Indonesia LESTARI, and Peru Alianza Forestal and Pro-Bosques activities; and the South America Regional Amazon Vision project). This included a desk review of MEL plans, annual reports, and evaluations, plus interviews with selected staff from USAID Missions and implementing organizations to understand their experiences with MEL across sectors. Based on this review, the team developed



illustrative, high-level results chains from existing activities and vetted these with USAID and external informants, including climate change, economic growth, and governance experts.

This chapter provides an illustrative example linking improved CFM to climate mitigation, governance, and economic growth outcomes, including key assumptions and corresponding learning questions, and indicators to measure progress relative to these benefits and answer these questions. This example is not meant to be prescriptive; rather its goal is to inspire USAID missions to consider how biodiversity activities could deliver measurable benefits across multiple sectors, and how indicators and learning questions might support adaptive management to maximize these benefits. Individual USAID operating units will know best the specific MEL elements that are appropriate in their context, and the hope is that these units will share the results of their programming and learning with their colleagues across the Agency.

## II. CLIMATE MITIGATION: AN ILLUSTRATIVE EXAMPLE

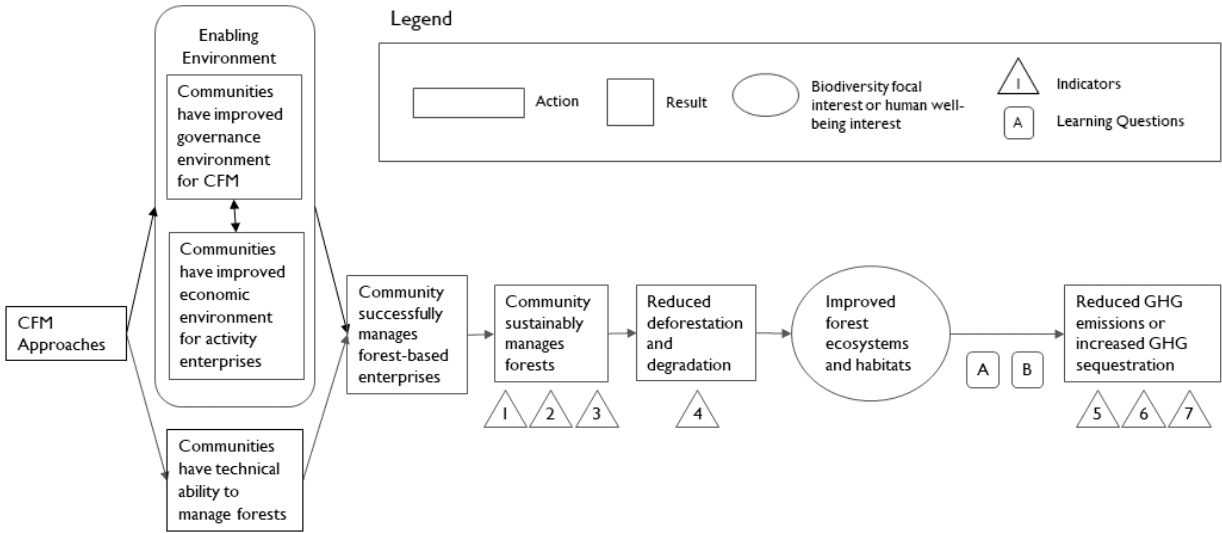
One of the most likely benefits from CFM, in addition to biodiversity conservation, is climate mitigation. Deforestation and forest degradation are major contributors to global greenhouse gas (GHG) emissions. The land use sector, which includes deforestation and forest degradation, agriculture, and land use change, accounts for 25 percent of global emissions, the majority of which occurs in developing countries where people are highly dependent on forest resources (USAID 2020e). Understanding how USAID CFM programming contributes to GHG emissions reductions is thus a key opportunity to examine the linkages between biodiversity conservation and climate mitigation outcomes.

USAID's land use-based climate mitigation activities are conducted under the USAID Sustainable Landscapes (SL) program, which promotes sustainable management of forests and other lands to help countries reduce GHG emissions, increase carbon storage, and improve livelihoods (see USAID 2019c for SL goals and assumptions). Though climate change mitigation may occur through any measurable reduction in emissions or increase in sequestration related to an activity, USAID's criteria for attributing benefits to SL usually require that activities and projects contribute to national-level goals for GHG emission reductions from the land use sector.

### THEORY OF CHANGE

Under the example described here, CFM approaches strengthen the governance-enabling conditions for community forest management and the economic-enabling conditions for enterprises, while building the technical capacity of communities to manage their forested lands. These results together lead to communities successfully managing forest-based enterprises, such as timber or non-timber forest products, which replace livelihoods based on poor forest management practices such as unsustainable harvesting and slash-and-burn activities. These enterprises in turn lead to communities sustainably managing their forests, which reduces deforestation or forest degradation and improves the status of important biodiversity habitat. Because more carbon is stored in the conserved ecosystems, the ultimate result is reduced GHG emissions (see below, Assumptions and Learning Questions).

Figure 2. Results chain summarizing the role of CFM in promoting governance, economic growth, and climate mitigation outcomes, as indicated by bold boxes. Letters and numbers indicate illustrative climate mitigation learning questions and indicators, respectively.



As with the fisheries example in Chapter Two, the benefits from CFM approaches can be illustrated in a results chain format (Figure 2) to illustrate the theory of change. In this depiction, climate mitigation outcomes are on the right-hand side of the results chain, and are realized as a result of improvement in the status of forest ecosystems and habitats. Outcomes in governance and economic growth are on the left-hand side of the results chain, as instrumental elements of achieving the biodiversity outcomes. This illustrative approach yields benefits to governance and economic growth earlier in the activity lifetime, before realizing benefits to climate mitigation.

For the purposes of this report, the current section on climate change mitigation covers all results from the sustainable management of forests (i.e. “Community sustainably manages forests”) through biodiversity outcomes (“Improved forest ecosystems and habitats,”) to climate mitigation outcomes (“Reduced GHG emissions or increased GHG sequestration”). The following two sections cover the creation of the enabling environment for governance and economic growth and subsequent benefits (Sections III and IV, respectively). More detailed results chains for these two sections are provided below (Figures 3 and 4).

**ASSUMPTIONS AND LEARNING QUESTIONS**

Though CFM approaches may protect priority forest biodiversity, USAID staff cannot automatically assume that this programming also results in significant climate mitigation outcomes. The key assumption linking biodiversity programming to climate mitigation is that the conservation of a forest ecosystem results in an increase in carbon sequestration or a decrease in GHG emissions to meet USAID SL funding requirements. However, for CFM activities to contribute to USAID’s SL outcomes, they must affect national GHG emissions, either through the area of forest conserved or the magnitude of carbon stocks protected. The following assumptions are the basis for learning questions and indicators described below:

- I. That the forest ecosystems managed by communities are sufficiently carbon-rich, due to spatial extent or carbon density per hectare, that their sustainable management will contribute to

national GHG emission reductions commitments. Biodiversity conservation and climate mitigation priorities may not align, however, if CFM activities protect areas that may be important for biodiversity but are small or have low carbon density, and therefore do not contribute meaningfully to national GHG reductions.

2. That community management of forests sequesters more carbon than would have occurred in the absence of management. Despite the appeal of community management, CFM approaches may encourage the removal of lower economic-value but higher carbon-value tree species to make room for higher-priced but lower carbon-value species.

This leads to two illustrative learning questions that examine the assumptions underlying the connections between biodiversity and climate mitigation outcomes. Answering these questions can help biodiversity projects and activities determine if their CFM actions might also yield meaningful climate mitigation outcomes as defined by USAID SL programming:

- A. Are the ecosystems managed by communities large and carbon-rich enough to contribute to national GHG emissions reductions commitments? What ecosystems might yield the greatest reduction in emissions or increase in sequestration?
- B. What CFM activities are most effective at increasing forest carbon sequestration or reducing I emissions?

If the intention is to simultaneously support both biodiversity conservation and GHG emissions reductions, teams should investigate these questions prior to implementation—for example, during project and activity design and planning—to identify and select areas in which both conservation priorities and carbon storage are under threat and can be conserved simultaneously. Recent guidance developed jointly by the USAID Forestry and Biodiversity and Global Climate Change Offices emphasizes the importance of identifying these possible overlaps and the opportunities for biodiversity projects and activities to attribute their outcomes to SL (USAID 2019c).

## INDICATORS

Because CFM is a common approach for sustainable landscapes and biodiversity programming, USAID standard indicators are similar for both sectors. Some of these standard indicators may be useful for the current illustrative example (Table 2). For example, both sectors use indicators that track the number of people trained to better manage their lands, or the number of people with improved economic benefits from improved management. Given the focus of Sustainable Landscapes programming on GHG emissions, however, the key outcome indicator for that sector is the standard “EG. 13-6 Greenhouse gas (GHG) emissions, estimated in metric tons of CO<sub>2</sub> equivalent, reduced, sequestered, or avoided through Sustainable Landscapes activities supported by USG assistance.”

Custom indicators based on an individual activity’s theory of change may be useful alternatives, especially for tracking integrated outcomes. For example, number of hectares with reduced GHG emissions or increased sequestration effectively gets at the area managed and at the results of the activity. Custom indicators have the additional benefit of binding together a diverse team around a shared goal, prioritizing integration, and helping drive integration during project and activity design (as noted by USAID 2019c, page 25). However, as noted in Chapter One, GHG mitigation information requires a certain level of expertise to be properly collected, and activities should plan and budget for that expertise.

Lastly, the use of these indicators carries two key caveats. First, if the amount of emissions reduced or carbon sequestered by an activity is sufficiently small, the effort required to report against the corresponding indicators may not be justified. Second, in co-funded activities, attempting to meet objectives of both biodiversity and SL can result in tradeoffs. For example, biodiversity standard indicators such as hectares under improved management may encourage teams to work in large landscapes with lower GHG emissions per hectare than smaller, carbon-rich landscapes in order to meet hectare conservation goals. In one USAID project, implementing partners noted that their efforts were spread thin over a wide area when they might have reduced the same amount of GHG emissions and had more significant development outcomes had they worked in the more compact, higher-carbon ecosystems.

*Table 2. Illustrative indicators for climate mitigation benefits, including subjective measures of level of effort. Numbers indicate positions in Figure 2.*

Result	#	Illustrative Indicator	How to Measure	Level of Effort
Community sustainably manages forests	1	Custom: Percent of (or number of) communities implementing sustainable harvesting or forest management practices	Community observations and interviews or surveys	Med
	2	Custom: hectares of forests managed to sustainability standards	Self-reporting or third-party verification	Med
	3	Custom: volume of legal, certified, or verified products in supply chains or available in markets	Observations or third-party verification	Med – High
Reduced deforestation and degradation	4	Custom: Percent reduction in rate of deforestation in activity communities compared to similar non-activity communities or to rates of deforestation before activity implementation	Remote sensing (e.g., Global Forest Watch) combined with ground observations and community surveys	Med
Reduced GHG emissions or increased carbon sequestration	5	Custom: GHG reductions or carbon sequestered per hectare under improved management	GHG calculators	Low
	6	EG 13-6 GHG emissions, estimated in metric tons of CO <sub>2</sub> equivalent, reduced, sequestered, or avoided through sustainable landscapes activities supported by USG assistance	GHG calculators	Low
	7	Custom: Carbon sequestered in protected forests	Use national monitoring, reporting, and verification systems to estimate carbon in protected ecosystem	Med-High

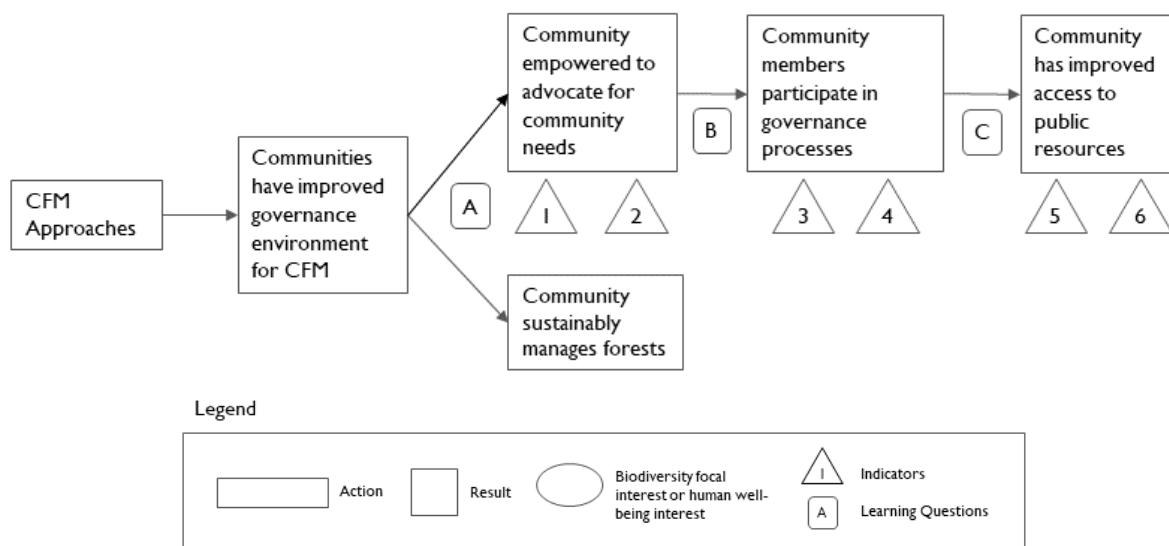
### III. GOVERNANCE: AN ILLUSTRATIVE EXAMPLE

Democracy, human rights and governance (DRG) is another sector that may benefit from CFM approaches, as the links between biodiversity loss and governance weaknesses are well understood. The drivers of biodiversity loss are often DRG challenges, such as weak institutional arrangements, insecure community access and use rights for natural resources, and lack of participation and transparency in decision-making. Furthermore, biodiversity programming often yields substantial and unmeasured benefits for DRG outcomes (USAID 2020b). CFM and DRG objectives also overlap considerably, in that they share the same high-level objectives of developing stronger, well-functioning, and accountable societies that prioritize and benefit from better natural resource and land management. Better natural resource management in turn protects the assets that underpin local economies, and supports participation, inclusion, accountability, and transparency in governance (USAID 2020c).

#### THEORY OF CHANGE

Under CFM approaches, strengthening community and forest management systems can lead to governance-related benefits. In the illustrative example presented here, when communities are empowered and enabled to manage their forests, they may also be empowered to advocate for their community needs in other ways (Figure 3). Empowerment and advocacy can grow to community members taking on more formal roles and participation in broader governing bodies which in turn increases the community’s access to public resources and participation in higher-level decision making processes (see Chapter One for an example). These outcomes may support a variety of key DRG objectives including strengthened political processes and institutions, increased accountability, and improved human rights (USAID 2013b).

*Figure 3. Illustrative results chain depicting the relationship between CFM approaches and DRG outcomes, where the letters indicate illustrative learning questions and the numbers indicate illustrative indicators. Not pictured here are the right-hand results leading from sustainable management of forests to the biodiversity conservation results of reduced deforestation and degradation, and improved forest ecosystems and habitats (see Figure 2).*



## ASSUMPTIONS AND LEARNING QUESTIONS

Though CFM approaches can have substantial benefits for governance, the results chain above (Figure 3, simplified to focus on governance outcomes) illustrates some key assumptions that should be tracked to determine whether these benefits are being realized. These assumptions include:

1. That community empowerment to manage forests leads to additional openings to advocate with public agencies for other community needs. Instead it is possible that increases in community capacity and official recognition to manage forests do not empower citizens in other ways.
2. That increased community advocacy leads to community members' participation in governing bodies. In fact, this may not translate into increased participation in governance processes due to discrimination or historical disenfranchisement.
3. That participation in governing bodies increases community access to public resources. Even if community members increase their participation in broader governance processes, it is not certain that these will translate into broadly improved outcomes due to inequitable access to resources within the community (e.g., due to preferential treatment of specific households, families, or clans), inefficiency, or competition between communities for public resources. In addition, communities may gain access to public resources even without formal participation in broader governance processes, making this causal link questionable.

These assumptions lead naturally to learning questions that explore these assumptions. At their simplest, these learning questions could include:

- A. To what extent does community empowerment to manage forests build empowerment to advocate with public agencies for other community needs?
- B. Under what conditions does increased community advocacy lead to more members participating in governing bodies beyond the community?
- C. In what ways might community members' participation in governing bodies increase community access to public resources, and in what other ways might community members gain access to public resources?

Answering these questions is a key step in determining to what degree this example of biodiversity-funded CFM programming is achieving DRG results and identifying any barriers to these outcomes. The 2017 DRG Learning Agenda provides broad questions that can be adapted to explore additional assumptions in the CFM example through a DRG lens and in a way that speaks to DRG priorities (USAID 2017b). We have included three examples in Table 3.

Table 3. Examples of DRG learning questions adapted to CFM projects and activities.

DRG Learning Question	CFM Assumption	CFM-Relevant Learning Question
How and under what circumstances can citizen engagement in community decision-making, advocacy, and monitoring influence reforms at higher levels of government?	Community management of forests engages citizens in governance systems.	How and under what circumstances can community engagement in forest management lead to broader support for participatory democratic processes writ large?
To what extent does targeting marginalized groups for DRG assistance have spillover or multiplier effects on DRG outcomes among untargeted groups?	Communities outside of the activity area will pick up CFM approaches when they are shown to be effective in activity communities.	To what extent are non-targeted communities affected by the governance-enabling environment supported by CFM activities?
When PITA principles (participation, inclusion, transparency, and accountability) are introduced into non-DRG programming, how do outcomes in other sectors change?	CFM governance activities and outcomes align with DRG principles.	How do CFM activities integrate PITA principles into governance activities, and how does inclusion of PITA principles affect the outcome of those CFM activities?

## INDICATORS

USAID standard indicators can be useful in revealing progress toward governance outcomes from CFM activities (Table 4; USAID 1998, USAID 2019a, USAID 2019b). For example, former standard indicator 2.4.1-12: “Number of public policies introduced, adopted, repealed, changed, or implemented consistent with citizen input” may be useful to explore whether community empowerment to manage forests results in broader outcomes such as empowerment to advocate with the government for other community needs. In addition, custom indicators can be useful for exploring how CFM activities yield governance benefits (Table 4). For example, the Pro-Bosques activity in Peru developed its own Indigenous Empowerment Index to “monitor changes in the levels of empowerment of Peruvian native communities” (USAID and Tetra Tech 2019). Not only will this indicator demonstrate how the activity empowers local communities, but the Government of Peru has itself expressed interest in adapting the index to measure the impacts of other projects and activities in the country.

Table 4. Illustrative indicators for governance benefits, including subjective measures of level of effort to collect data. Numbers indicate positions along the results chain in Figure 3.

Result	#	Illustrative Indicator	How to Measure	Level of Effort
Communities empowered to advocate for community needs	1	EG. 13-2 Number of institutions with improved capacity to address Sustainable Landscapes issues as supported by USG assistance	Survey or observations of institutional capacity; count participating institutions	Med
	2	Custom: Indigenous Empowerment Index in the Amazonian Forest Sector (USAID and Tetra Tech 2019)	Individual and group surveys	High
Community members participate in governance processes	3	Custom: Number of community members participating in governing bodies or processes	Survey or observations; simple count	Low
	4	2.4.1-12 Number of public policies introduced, adopted, repealed, changed, or implemented consistent with citizen input	Survey or observations; community member interviews	Low
Community has improved access to public resources	5	Custom: Number of public resources accessible to community members	Community-level focus groups or surveys	Med
	6	Custom: Value of public resources invested in or provided to community	Observations and official data reviews; possibly interviews	Med

These indicators may be particularly useful when incorporated as part of baseline, midterm, and final surveys rather than regular reporting; and as part of household surveys, focus group interviews, or other mechanisms (Chapter One, Lessons Learned, numbers two and three). However, because achieving governance results is often essential to realizing biodiversity outcomes over the longer term, regular reporting on these indicators may be necessary to understand whether an activity is making progress toward its ultimate biodiversity objectives. In addition, USAID operating units may find it useful to establish MEL mechanisms that extend beyond individual activities to include longer time periods or multiple activities (Chapter One, Lessons Learned, number seven). For example, the environment office at a Mission could monitor the number and types of government benefits communities receive before, during, and after multiple mission-supported CFM activities over time periods longer than a single activity.

**IV. ECONOMIC GROWTH: AN ILLUSTRATIVE EXAMPLE**

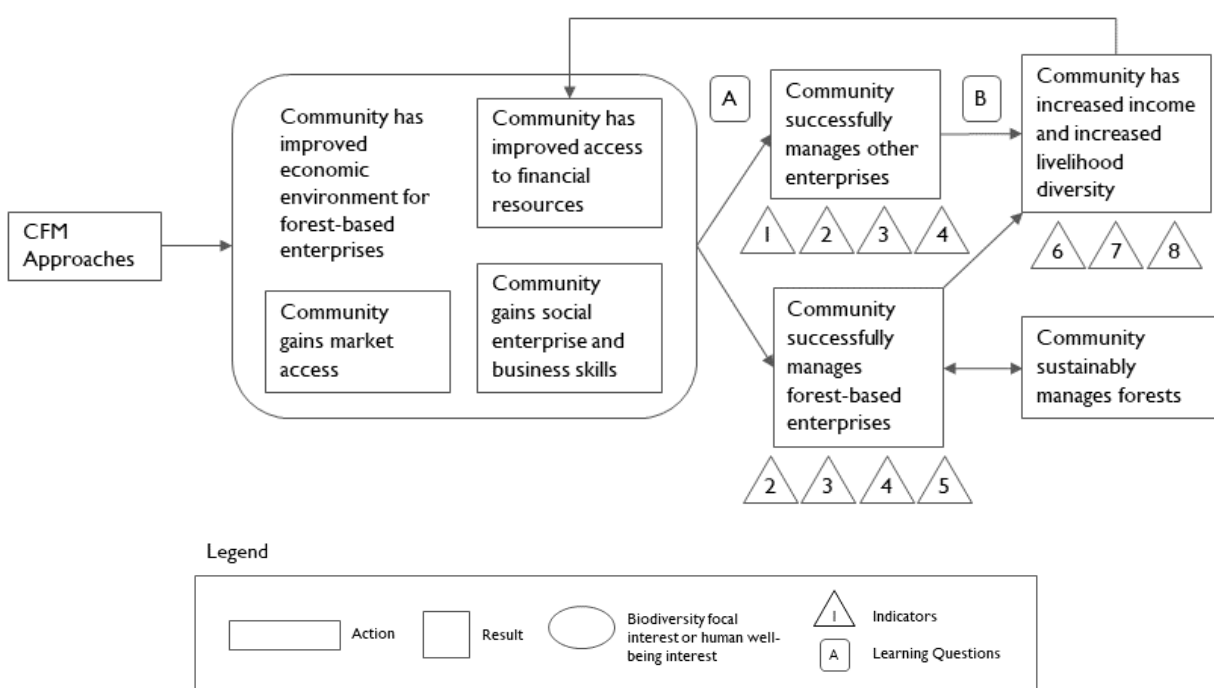
As noted above for governance outcomes, CFM activities that build the economic enabling environment can also lead to economic growth benefits more broadly. These benefits could include enterprises in addition to those developed by the activity, such as ecotourism; the sustainable harvesting, processing, and sale of timber or non-timber forest products; or enterprises unrelated to forest resources. For simplicity, here we refer to “forest-based” enterprises as those that are created and supported directly by the CFM activity and are more directly linked to natural resources, in contrast to other enterprises that stakeholders might develop using the skills built by the activity. Following is the theory of change associated with these broader benefits, possible assumptions and learning questions, and illustrative indicators.



## THEORY OF CHANGE

Activities to build the enabling economic environment for activity enterprises often include developing community members' business skills, increasing financial resources available to communities, and building access to markets (Figure 4). These interim results contribute to the establishment of forest-based enterprises and enable the community to sustainably manage their forests. Once these enterprises are established and communities realize increased income and livelihood diversity, this may further support community access to financial resources as communities reinvest their profits into other activities.

Figure 4. Illustrative results chain depicting the relationship between CFM approaches and economic growth outcomes, where letters indicate illustrative learning questions and numbers indicate illustrative indicators. Not pictured here are right-hand results leading from sustainable management of forests to biodiversity conservation results of reduced deforestation and degradation, and improved forest ecosystems and habitats (see Figure 2).



## ASSUMPTIONS AND LEARNING QUESTIONS

Though the use of CFM for biodiversity conservation may have broader benefits for economic growth, the results chain above illustrates some key assumptions that can be tracked through integrated MEL systems:

1. That the skills gained and improved overall economic environment that enable successful forest-based enterprises will lead to the successful management of other enterprises. Indeed, it is possible that the markets, skills, and financial resources that become available to support a specific forest-based enterprise may not apply to other enterprises; e.g., market access for a timber production activity enterprise may not increase access for rubber production, or the business skills needed to manage a rattan microenterprise may not apply to managing ecotourism operations.

2. That when communities better manage enterprises, both forest-based and otherwise, they will receive increased revenue and household income, and achieve livelihood diversity. Instead, enterprises may need to reinvest all revenue to keep the enterprise running during the timeframe of the activity, so income benefits to communities might not be realized until substantially after the activity ends, if at all. In addition to private benefits, such as increased income, enterprises might generate public benefits such as community-wide services, which benefit all.

These assumptions lead naturally to learning questions that assist USAID in understanding when these benefits are possible and how best to maximize them during current or future programming:

- A. Under what conditions does building an enabling economic environment for forest-based enterprises support the development of other enterprises in the community? Specifically, to what extent are market access, management skills, and financial resources for forest-based enterprises applicable to management of other enterprises in the community?
- B. Under what conditions does community management of forest-based or other enterprises lead to increased income and livelihood diversity for community members? Are these benefits distributed equitably, and what other benefits do community-managed forest-based enterprises confer to communities?

As described next, both standard and custom indicators can be useful in measuring progress toward economic growth benefits from CFM, answering these questions, and adapting projects and activities accordingly.

## INDICATORS

Economic growth underpins much of USAID's work, and a variety of standard indicators (USAID 2020d), and custom indicators (USAID 2020a) are available to track progress through the above results chain (Table 5). It should be noted that economic and other social benefits are especially important to projects and activities that support Reduced Deforestation and Forest Degradation, the sustainable management of forests, and the conservation and enhancement of forest carbon stocks (REDD+), and related prior USAID guidance provides a thorough review of potentially applicable metrics and approaches used to collect and analyze them (USAID 2013a).

Table 5. Illustrative indicators for capturing economic growth benefits, including subjective measures of level of effort to collect data. Numbers indicate positions along the results chain in Figure 4.

Result	#	Illustrative Indicator	How to Measure	Level of Effort
Community successfully manages other enterprises (define “enterprise” based on local context to reflect informal activities, multiple income streams, etc.)	1	Custom: Number of additional, non-project supported enterprises in the community	Observation, community surveys, tax data, business registrations or licenses	Low to Med
	2	EG.5-3: Number of microenterprises supported by USG assistance	Observation, partner reporting	Low
	3	Custom: Number or value of benefits accruing to community members or participating members (depending on activity design)	Observation, community-level surveys or interviews, household surveys	Med
	4	Custom: Revenue generated by community enterprises	Community or household surveys, tax data, sales data	Med
Community successfully manages forest-based enterprises	5	Custom: Percent or number of communities within the priority regions using the standing forest for environmentally sustainable forest-based economic activities	Observations or community survey	Low
Community has increased income and livelihood diversity	6	EG. 10.2-3 Number of people with improved economic benefits derived from sustainable natural resource management and/or biodiversity conservation as a result of USG assistance	Observations, community surveys or focus groups, household income and benefits surveys	Med
	7	Former FTF EG-c Prevalence of Poverty: Percent of people living on less than \$1.90/day 2011 PPP (USAID 2019d.) or Former EG 4-17 Prevalence of Poverty: Percent of people living on less than \$1.25/day (United States Government, 2020)	Household surveys or national statistics	High
	8	Custom: Community economic well-being index	Household Economy Approach (USAID 2013a): in-depth household and individual surveys, observations, and interviews National or regional Living Standards and Measurement Surveys ( <a href="http://surveys.worldbank.org/">http://surveys.worldbank.org/</a> )	High  Low if data

The illustrative indicators for this example range from variables that might be measured through household surveys or focus groups to those requiring local or national tax data or other statistics. These indicators also range substantially in level of effort, from low (in the case of already-existing government datasets) to high (in the case of poverty or well-being measures). As in the above sections, this illustrates the importance of dedicated funding and specialized personnel to assist in the collection and analysis of this data, consistent with the lessons learned in Chapter One of this document.

## V. CHAPTER THREE REFERENCES

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## SUPPORT AND ADDITIONAL RESOURCES

Support for integrated biodiversity programming, including integrated MEL strategies, is available from the USAID Office of Forestry and Biodiversity. For more information, please contact:

- Olaf Zerbock, [ozerbock@usaid.gov](mailto:ozerbock@usaid.gov)
- Office of Forestry and Biodiversity, [biodiversity@usaid.gov](mailto:biodiversity@usaid.gov)

Additional resources regarding integrated MEL and integrated biodiversity programming include:

- [FHI360 Guidance for Evaluating Integrated Global Development Programs](#)
- [The USAID Biodiversity Policy](#)
- [The USAID Biodiversity and Development Handbook](#)
- [The USAID Biodiversity and Development Research Agenda](#)
- [The USAID Biodiversity Results and Integrated Development Gains Enhanced Project \(BRIDGE\)](#)