USAID
FROM THE AMERICAN PEOPLE

EVIDENCE IN ACTION
USING AND GENERATING EVIDENCE ABOUT EFFECTIVENESS IN
BIODIVERSITY PROGRAMMING

Unit 1: Understanding an Evidence-Based Approach

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ACRONYMS

ADS	Automated Directives System
CLA	Collaborating, Learning, and Adapting
MEL	Monitoring, Evaluation, and Learning
PAD	Project Appraisal Document
USAID	United States Agency for International Development

I. OVERVIEW

Healthy rivers, forests, and oceans are essential to development, supporting and sustaining livelihoods and human well-being. Conservation protects the biological resources that people depend on and that are a critical component of good development outcomes. To this end, the United States Agency for International Development (USAID) has made significant investments in mitigating threats to biodiversity in key ecosystems and landscapes.

Faced with finite resources and great demand, it makes sense to ask tough questions about the effectiveness of biodiversity programs. It is not only important to know if a program achieved its expected outcomes; it is also important to understand how and why a program achieves success. Using and generating evidence about what works, what doesn't, and in which contexts can help teams make better programming decisions (see Box 1 on page 6). *Evidence in Action* helps mission staff and implementing partners use and generate evidence about the effectiveness of biodiversity programs. The resource is presented in four units that can be used alone or as a series. A glossary defining key terms is included with each unit.

- **This first unit, *Understanding an Evidence-Based Approach* provides an introduction to evidence and evidence-based approaches to biodiversity programming in the context of the USAID Program Cycle.**

- *Unit 2: Using Evidence* focuses on the critical review and use of evidence to increase the effectiveness of biodiversity programs.

- *Unit 3: Generating Evidence* identifies Program Cycle processes that teams can use to generate credible evidence about the effectiveness of biodiversity programs.

- *Unit 4: Building the Evidence Base* highlights ways in which evidence can be shared and applied to strengthen biodiversity programs across USAID.

BOX 1: ESTABLISHING THE PROFESSIONAL NORM FOR EVIDENCE-BASED APPROACHES IN BIODIVERSITY CONSERVATION

More than 15 years ago, Pullin and Knight (2001) called for stronger use of evidence to improve the effectiveness of biodiversity conservation programs. In the intervening years, however, it has become clear that, on its own, better access to evidence is not enough to garner widespread adoption of evidence-based approaches. Changes in conservation practices are lagging behind advances in the evidence base, resulting in what Sutherland and Wordley (2017) have called "evidence complacency." These outcomes suggest that additional barriers to the adoption of evidence-based approaches continue to exist.

There is no question that a robust evidence base is necessary for effective implementation of evidence-based approaches, and its development continues to be a major effort in the conservation evidence community. However, there is also a growing understanding that simply improving the availability of evidence – even when that evidence is relevant and accessible – is not enough to facilitate broad-scale change in the way that decisions are made (Langer et al. 2016). The most effective approaches simultaneously enhance capability and motivation to use evidence alongside increased access to relevant evidence. For example, in the nursing field social marketing has been used to build positive attitudes about using evidence as a first step in establishing new norms for incorporating evidence in their day-to-day work (Breckon and Dodson 2016). The four units of *Evidence in Action* are designed to support a culture of using and generating evidence in biodiversity programs at USAID.

Land that has been cut and burned in Central Kalimantan, Indonesia. An evidence-based approach can help identify effective strategies to address deforestation. Photo credit: Nanang Sujana/CIFOR.

2. INTRODUCTION

An evidence-based approach to biodiversity programming operationalizes Agency policies (such as the USAID Program Cycle Operational Policy (**ADS Chapter 201**) and the **USAID Biodiversity Policy**) and best practices (such as **collaborating, learning, and adapting (CLA)** and **local systems** approaches) that focus on the importance of evidence as an essential element of effective programming (see Box 2 on page 8).

Unit 1: Understanding an Evidence-Based Approach develops a model for evidence-based conservation that USAID program managers can apply as part of the adaptive management approach to implementing the **USAID Program Cycle**. Taking an evidence-based approach to biodiversity conservation involves not only reviewing data and information but, more broadly, cultivating and applying a critical perspective to program design and implementation.

After completing this unit, teams will understand how:

- An evidence-based approach to biodiversity programming uses evidence about program effectiveness to improve conservation outcomes

- An evidence-based approach to biodiversity programming is used to generate evidence about program effectiveness

- Opportunities to use and generate evidence about program effectiveness occur at multiple points in the Program Cycle

BOX 2: WHAT DETERMINES THE EFFECTIVENESS OF BIODIVERSITY PROGRAMS?

Program effectiveness is the degree to which an implemented project or activity achieves intended outcomes. Designing and implementing successful programs (see Figure 1) depends on a team's knowledge about:

- *The causes of biodiversity loss in the program context:* The accuracy of the problem analysis, or the degree to which the assumptions about the causes of biodiversity loss are correct, determines whether a program will address the "right" problems.

- *How proposed solutions work:* A strategic approach is a set of actions with a common focus that work together to achieve a series of relevant results that address specific threats, drivers, and/or opportunities. A strategic approach is based on a theory of change, which describes the reasoning behind "how and why a purpose or result is expected to be achieved in a particular context" (ADS Chapter 201, page 157). The validity of the assumptions in the theory of change for a given strategic approach determines whether a program will employ appropriate solutions.

- *How to achieve desired results:* The effectiveness of implemented actions in the program context, as well as the quality and completeness of their execution, determines whether a program will achieve intended results.
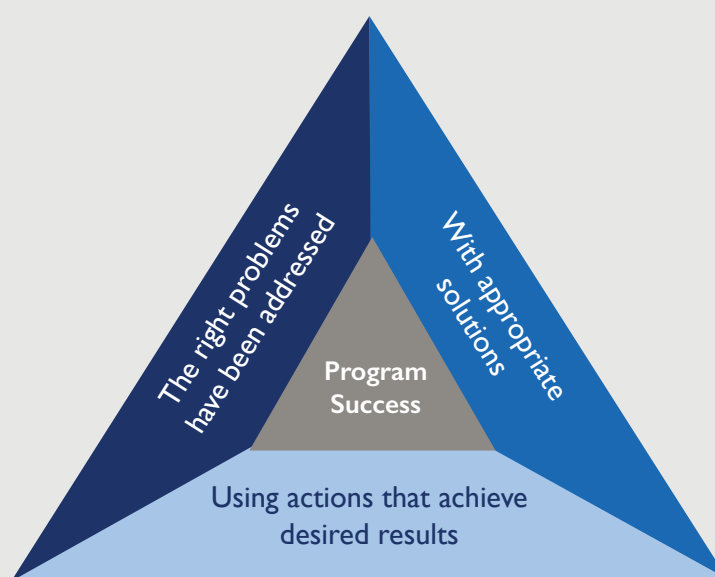
Figure 1: Three components of program success

3. WHAT IS EVIDENCE?

Evidence is defined in ADS Chapter 201 as the "[b]ody of facts or information that serve as the basis for programmatic and strategic decision-making in the Program Cycle. ... [Evidence] can be sourced from within USAID or externally and should result from systematic and analytic methodologies or from observations that are shared and analyzed" (page 145).

The term "evidence" refers to both: (1) individual findings or pieces of information used to help make a decision or support a conclusion; and (2) the body of findings or information providing support for (or countering) a belief or claim. Evidence can be generated through primary research, literature reviews, case studies, assessments, evaluations, and performance monitoring.

- Evidence for program effectiveness comes from real-world observation and documentation of program outcomes.

- Not all observations are evidence; it depends on how those observations are used. Observations are not considered evidence unless they are used to investigate whether a belief or claim is true.

- Triangulation – or using multiple sources of evidence drawn from diverse research methodologies – provides a higher level of confidence in findings that support a belief or claim.[1]

The use and generation of evidence provides a systematic framework for developing knowledge and increasing the effectiveness of programs. Teams that incorporate evidence about program effectiveness into conservation decisions reduce the risk of repeating mistakes and increase opportunities for replicating success. Failure to use and generate evidence about program effectiveness can lead to the perpetuation of management actions that are ineffective at achieving desired results.

4. WHAT IS AN EVIDENCE-BASED APPROACH TO BIODIVERSITY PROGRAMMING?

An evidence-based approach is the "conscientious, explicit, and judicious" use of current best evidence in program decisions.[2] It helps teams understand what approaches are most likely to work and in what contexts, which is key to efficient management of conservation investments.

An evidence-based approach is a process that encompasses identification, use, and generation of evidence. Evidence-based approaches are a critical component of adaptive management and an important element of program accountability.

Teams adopting an evidence-based approach to biodiversity programming use evidence to support their analysis of the problem, their understanding of the solution, and the design of strategic approaches used to implement the solution. They will also consider the evidence supporting their understanding of how social and political factors in the program context are likely to influence the results leading to threat reduction:

- Are there political barriers[3] that hinder the success of the strategic approach?

- Have the needs, values, and motivations of stakeholders[4] been considered?

- What can the team learn from their and others' experience in implementing particular actions?[5]

An evidence-based approach integrates the team's expertise with the best available evidence from internal and external sources to determine what approaches are likely to work in a given program context.

Identifying and Using Evidence in Biodiversity Programming *is a helpful resource for teams interested in applying evidence-based approaches to biodiversity programming.*

EXAMPLE 1: APPLYING THE EVIDENCE BASE TO EXTRACTIVE USES OF RESOURCES IN MARINE PROTECTED AREAS

The use of marine protected areas is an important strategic approach for marine resources affected by extractive use. Marine protected areas encompass a range of protection levels, from fully protected no-take reserves to restriction of particular activities, fishing gear types, target species, or extraction periods.

A team is designing an activity that implements a marine protected area approach and trying to decide whether to support the establishment of a no-take reserve to protect local coral reef and fish communities affected by overfishing. They find several published assessments (Halpern 2003, Stewart et al. 2008) that support the effectiveness of no-take marine reserves as an approach for achieving biological outcomes, including increased density, biomass, and average size of target species, and increased species diversity within the borders of the marine protected area. There also appear to be positive effects on fish stocks outside of protected areas (García-Charton et al. 2008) that could benefit fishers in the community. In contrast, a review examining the effectiveness of partially protected marine areas for achieving biodiversity outcomes found that outcomes were mixed (Lester and Halpern 2008). Based on this information, the team decides to focus the activity on the establishment of a no-take reserve.

The implementing partner successfully petitions the national government to establish a fully protected area under a newly enacted National Protected Areas Act. The Act establishes permanent protections for biologically important habitat for priority species and provides short-term funding for enforcement of prohibited activities. Initially, enforcement is successful in reducing fishing in the no-take reserve. However, local fishers are not able to replace the income supported by fishing in the closed areas, and they lack resources to move to alternative open areas. At the end of the activity, there is limited community support for continued enforcement, and fishers begin returning to previous practices once the original funding for enforcement runs out.

What might the team have done differently?

The team's review of the evidence supported their assessment of the problem – that the status of declining fish stocks would likely improve if fishing were eliminated – but they were unable to achieve key results required of the solution.

Based on the evidence that they reviewed, the design team assumed that marine protected areas that allow extractive activities within their boundaries provide little protection to marine biodiversity in their decision to exclude partial protection as a management option. If this project were being designed ten years ago, this assumption would have been reasonable based on the limitations of the evidence base at the time. However, if the team were designing a marine protected area today, their review of the evidence base should have identified more recent evidence challenging this assumption.

*A **systematic review** uses established protocols to acquire, critically appraise, and synthesize all available evidence relevant to a specific question. Unlike other types of reviews, a systematic review strives to locate all relevant published and unpublished studies relevant to the research question and explicitly considers differences in study methods or study quality in order to base conclusions on those studies that are most methodologically sound (Bilotta et al. 2014).*

In 2013, Sciberras et al. completed a systematic review (see inset) assessing the potential benefits of different levels of protection for fish and invertebrate populations. This review confirmed that no-take reserves provide greater ecological benefits than partially protected areas, and it added additional information about the ecological benefits of partially protected compared to open access. This new evidence suggests that partially protected areas can be a valuable management tool, particularly in areas where complete exclusion of extractive activities is not socio-economically or politically feasible. With this additional information, the team should explore the feasibility of establishing partially protected areas either alone or in combination with adjacent no-take areas as a more effective approach when community support for full fishing closures is likely to be difficult to achieve.

OVERCOMING BARRIERS TO USING AN EVIDENCE-BASED APPROACH

Barriers to using evidence-based approaches include limitations in the evidence base itself as well as individual and institutional factors (see Figure 2). A lack of relevant information (Fazey et al. 2005), difficulty accessing existing information (Bayliss et al. 2012), and higher value placed on experience over research (Pullin and Knight 2005) have all been cited as factors affecting the use of evidence in conservation decisions. That landscape is changing with the emergence of new journals focused on rapid dissemination of evidence syntheses in open access (e.g., *Environmental Evidence*, *Conservation Evidence*) and increased interest among other conservation journals.

However, increased availability does not mean that evidence is accessible to decision makers. Access to information in suitable formats is also important. Implementing teams may not have time to search for and appraise the information needed to judge the effectiveness of strategic approaches, let alone evaluate the relevance to their particular context (Pullin et al. 2004). Furthermore, the time and resources necessary for program evaluation – which provides important contributions to the evidence base – are often seen as tangential to the central focus of programming (Ferraro and Pattanayak 2006). The approach outlined in Units 2 and 3 of *Evidence in Action* leverages USAID policies and resources to address common barriers encountered in biodiversity programming (see Table 2 on page 14).

Limitations in the evidence base

- Lack of high quality information on the effectiveness of conservation interventions
- Lack of access to available information or information not available in suitable form

Individual factors

- Lack of knowledge about evidence-based approaches
- Lack of time and resources for search and appraisal of evidence
- Unwillingness to question experience-based information
- Low capacity to apply evidence to design and implementation decisions

Institutional factors

- Lack of operational models for evidence-based approaches within institutions
- Lack of infrastructure to support evidence-based approaches
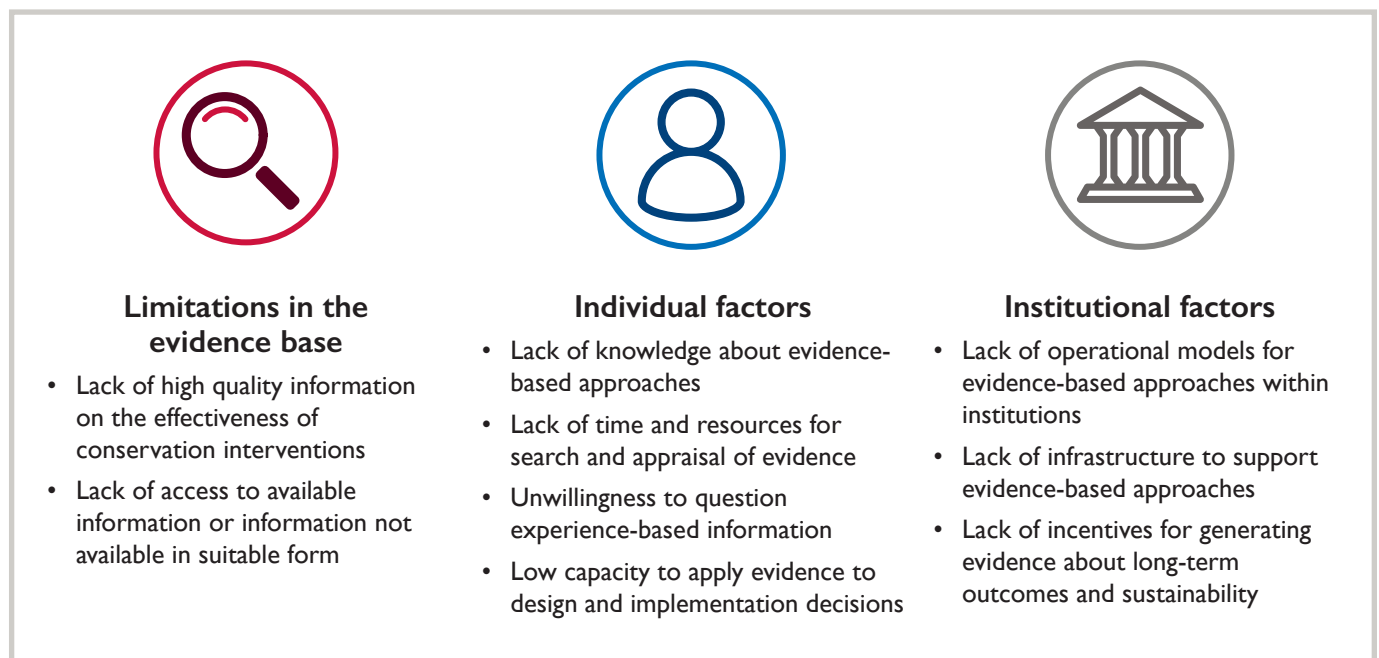- Lack of incentives for generating evidence about long-term outcomes and sustainability

Figure 2: Barriers to evidence-based approaches in biodiversity programming

Table 1: Selected tools and resources that address barriers to evidence-based approaches

Tools and Resources	Application
The *USAID Biodiversity and Development Research Agenda* defines and prioritizes critical questions in biodiversity conservation in support of *USAID's Biodiversity Policy*.	The Agenda provides a foundation for outreach to key research partners interested in carrying out research that can better inform development programming decisions.
The USAID Biodiversity Gateway includes access to a searchable collection of USAID-funded research products in the area of biodiversity and development.	These documents are an important source of evidence for use in program design and implementation.
USAID's Biodiversity Cross-Mission Learning Program provides an opportunity for USAID staff to share evidence and learning.	The Cross-Mission Learning Program develops learning agendas that support evidence syntheses and research on topics relevant to program design and implementation.
The USAID Biodiversity and Development Research Agenda's two companion documents provide guidance on identifying and using evidence in biodiversity programming and research questions and methods.	These documents help teams better understand how to use and apply evidence to program design and provide guidance to teams on options for generating evidence.
The four units in *Evidence in Action* and a companion online resource describe the use and application of evidence-based approaches in the context of biodiversity programs at USAID.	These resources build capacity among program managers, other USAID staff, and their partners supporting the use and generation of evidence in program design and implementation.
The Collaborating, Learning, and Adapting (CLA) framework is USAID's approach to program learning and improvement. The learning component of CLA draws on evidence and experience to design programs that are grounded in good practice and appropriate for the local context.	The learning component of CLA is an example of an institutional resource that operationalizes evidence-based approaches in USAID programs.

5. EVIDENCE-INFORMED DECISIONS IN THE PROGRAM CYCLE

Evidence relevant to biodiversity conservation and integrated programming can be synthesized and incorporated at different stages in the Program Cycle (see Figure 3).

When defining the problem:
Individual studies, reviews, and syntheses of published and grey literature can inform program scope, understanding of threats and drivers, and selection of focal interests.

When selecting and designing strategic approaches:
This step can be informed by reviews and syntheses about the effectiveness of common strategic approaches or theories of change.

During implementation:
Implementers can generate evidence about effectiveness and key assumptions through monitoring and evaluation.

The use and generation of evidence about program effectiveness is a key component of adaptive management (see Table 1 on page 16). *Unit 2: Using Evidence* and *Unit 3: Generating Evidence* focus on the use and generation of evidence to support the logic of the problem analysis and theory of change because the validity of these underlying assumptions determines program success. *Unit 4: Building the Evidence Base* emphasizes the use of an evidence-based approach as part of a learning process that builds knowledge and understanding about program effectiveness.
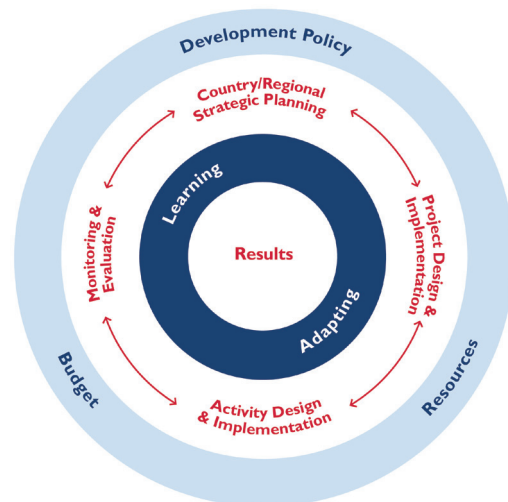

Figure 3: The USAID Program Cycle offers program design and implementation teams many opportunities to use evidence to inform decisions

Table 2: Illustrations of how an evidence-based approach is operationalized within the Program Cycle

Program Cycle Process or System	Sample Roles and Responsibilities
Project Design and Project Monitoring, Evaluation, and Learning (MEL) Plan	The project design team reviews the evidence base supporting critical assumptions in the problem analysis and theories of change, including the effectiveness of identified strategic approaches.
	The project design team identifies critical evidence gaps and priorities for generating evidence in the Project Appraisal Document (PAD) MEL plan.
	The project design team identifies opportunities for review of evidence generated through project activities, such as a learning review.
Activity Design and Procurement	The activity design team reviews the problem analysis in the PAD and seeks additional evidence that would inform the activity-level problem analysis.
	The activity design team reviews the evidence base used to support project-level theories of change and refines activity-level theories of change as needed.
	The activity design team reviews evidence gaps identified in the PAD and identifies additional activity-level priorities for MEL, then formulates questions and activities to address them, where appropriate.
Activity Start-Up and Implementation	The implementing partner uses evidence for effectiveness and causal pathways in activity-level theories of change to support proposed actions.
	The Contracting or Assistance Officer's Representative critically reviews the use of evidence supporting decisions in work and MEL plans. For example, the work plan should justify selected actions with evidence where appropriate. MEL plans should describe evidence gaps, how they will be addressed, and how generated evidence will be used for adaptive management.
	The implementing partner builds in opportunities in the work plan and MEL plan to review evidence generated during life of the activity (e.g., annual reflections) and use the evidence for adaptive management.
Evaluation Design and Implementation	During project and activity design, the Technical Officer or Environment Team identifies MEL processes and data designs that could be used to generate evidence about program effectiveness and test critical assumptions.
	The implementing partner collects data that can be used to generate evidence about the effectiveness of the implemented activity and test critical assumptions.
	An external evaluator analyzes data to generate evidence about the effectiveness of the implemented activity (or provides independent review of analyses undertaken by the implementing partner).

EXAMPLE 2: THE IMPORTANCE OF PROGRAM CONTEXT TO REDUCE DEMAND FOR BUSHMEAT

A design team is interested in supporting small-scale livestock industries as an alternative to dependence on bushmeat as a primary protein source. According to the team's theory of change, households participating in the enterprise will be able to successfully raise pigs that will be brought to market. The availability of this protein source is expected to help reduce demand for bushmeat. The team considers using a village-led microfinance approach to support household livestock rearing similar to that taken in "Pigs for Peace" (Glass et al. 2012). Pigs for Peace provides a "loan" of a pig to women and their families as a means to generate household income. After the loan has been repaid in the form of two piglets, the remaining piglets can be kept as meat or sold for profit. Participating families have been successful at bringing pigs to market and selling them for as much as $40 (Glass 2016).

The team believes that supplying village-reared pork to local markets could be an effective approach to reduce demand for bushmeat. However, when they interview community members, they discover that the primary consumers of bushmeat do not view pork as an acceptable protein substitute. Furthermore, the local economic context for the proposed activity differs from that of the Pigs for Peace program. The population density is much lower and there are few active markets. As a result, pig farming in this region is not a profitable activity. In the absence of conditions enabling market demand, the team concludes that the socio-economic context is not favorable to the strategic approach, even though there is evidence showing that it is effective elsewhere.

Piglets can serve as a "loan" as a means to generate household income. Photo credit: Pixabay

EVIDENCE POLICIES AND RESOURCES ACROSS USAID

The approach described in *Evidence in Action* is consistent with USAID policies and efforts that recognize the importance of cultivating evidence-based approaches within the Agency.

- The USAID Program Cycle Operational Policy (**ADS Chapter 201**) builds strong linkages between evidence and program decisions, including requiring programs to develop learning plans that identify knowledge gaps and ways to address them.

- The **USAID Scientific Research Policy** improves the quality and use of research – a process by which evidence is generated – for decision-making.

- The **USAID Biodiversity Policy** promotes evidence-based biodiversity programming.

- The **USAID Biodiversity and Development Research Agenda** is a collaborative effort that prioritizes research questions in support of effective biodiversity programming.

- The USAID **Collaborating, Learning, and Adapting Maturity Matrix** identifies using and contributing to the technical evidence base as a key component of strategic learning.

Evidence in Action complements other USAID forestry and biodiversity tools and resources:

Evidence Products:
Unit 2: Using Evidence supports the use of evidence products to inform program design decisions. USAID's Office of Forestry and Biodiversity has developed evidence products on topics ranging from **fishing as an approach to food security** to **community engagement as an approach to reducing wildlife crime**. These resources synthesize existing evidence on the effectiveness of commonly used approaches in biodiversity programming. They are available on **USAID's Biodiversity Conservation Gateway**.

Programming Resources:
Three **Biodiversity How-To Guides** provide in-depth guidance on key tools and practices to support teams as they design and manage biodiversity programs within the Program Cycle and according to the USAID Biodiversity Policy. As covered in *Unit 2: Using Evidence* and *Unit 3: Generating Evidence*, the effectiveness of these practices relies heavily on the application of evidence-based approaches (see Example 3 on page 20).

Case Examples:
Incorporating Geospatial Design into USAID Biodiversity Programming and *Design of Integrated Biodiversity and Climate Change Adaptation Development Projects* (forthcoming) illustrate best practices for the use of appropriate evidence to strengthen program design. Units 2 and 3 provides context and support for missions interested in employing similar evidence-based approaches.

Learning Initiatives:
Institutional learning programs provide a platform to capture and share institutional knowledge acquired through an evidence-based approach. USAID's Biodiversity Cross-Mission Learning Program currently supports two Collaborative Learning Groups that focus on capturing and sharing knowledge about the effectiveness of conservation enterprises and approaches for combating wildlife trafficking.

Nomadic Himbas ride through the Marienfluss Conservancy in Namibia, one of dozens of community-managed conservation areas, benefiting tens of thousands of Namibians. Photo credit: Steve Felton/ WWF

EXAMPLE 3: APPLYING AN EVIDENCE-BASED APPROACH TO THE THEORY OF CHANGE FOR THE GRAND RIVER EXAMPLE

Wherever possible, the reasoning behind a theory of change should be supported by available evidence. A results chain is tool that a team can use to represent their assumptions about how they think a specific strategic approach will contribute to reducing direct threats and lead to conservation outcomes.

Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming describes an example in the fictional Grand River project and illustrates the development of a results chain for a strategic approach promoting sustainable freshwater fishing practices (see Figure 4). During program design, the team should document key sources of evidence used to support the assumptions that underlie their theory of change. In the Grand River example, one key assumption is that if fishers use the new, more sustainable fishing practices, then overfishing will decline. The team would want to support this assumption with evidence that the sustainable fishing practices being promoted are effective at reducing overfishing in systems similar to that of the Grand River.
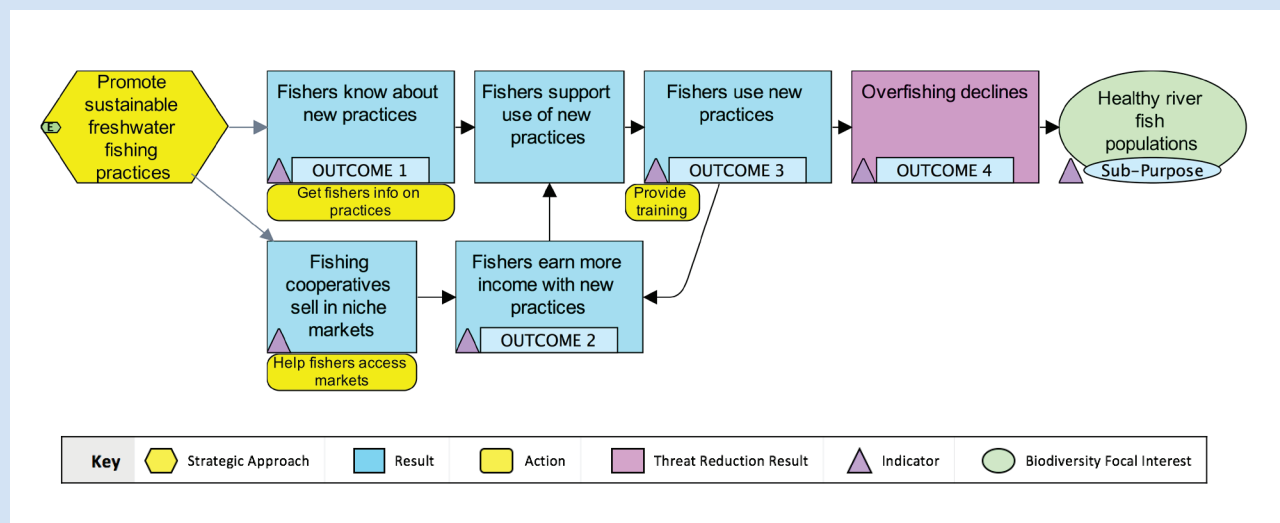
Figure 4: Results chain for a strategic approach promoting sustainable freshwater fishing practices

Following the steps of an evidence-based approach, the team starts with identifying an information need. In their problem analysis, excessive juvenile take had been identified as a driver of declining fish stocks. The team is considering imposing size limits on catch in order to allow stocks of juveniles to replenish, but is uncertain

as to the effectiveness of this approach. They articulate the information need in the following question, "Does imposing size limits on catch induce favorable shifts in population size structure in fisheries facing stock declines?" Next, they search a variety of sources for existing evidence that would support or refute their assumption that using practices that limit juvenile catch will allow the fish populations to stabilize.

A results chain is also a useful tool for documenting evidence gaps in the theory of change. Evidence gaps are assumptions (captured by the black arrows in a results chain) for which there may be uncertain or limited evidence supporting (1) the proposed relationship between the strategic approach and one or more results or (2) causal relationships between intermediate results. Identifying evidence gaps is an important part of an evidence-based approach.

Fishing village of Mabua, Tandag, Surigao del Sur, Philippines, where USAID-supported community initiatives to control illegal fishing have brought back some of the productivity of local fisheries. Photo credit: Asuncion Sia

6. SUMMARY OF KEY CONCEPTS

- Evidence is the "[b]ody of facts or information that serve as the basis for programmatic and strategic decision-making in the Program Cycle" (ADS Chapter 201, page 145). An evidence-based approach requires careful consideration of evidence in program decisions.

- Evidence-based approaches support USAID policies and recommended practices for biodiversity programming. The use and generation of evidence about program effectiveness is a key component of adaptive management.

- In biodiversity programming, teams use evidence to support their analysis of the problem, their understanding of the solution, and the design of strategic approaches used to implement the solution. They may also generate evidence through processes that monitor and evaluate results as well as through the commission of independent research.

- Careful consideration of what is known and not known about program effectiveness helps program managers and implementing partners make well-informed decisions and investments, and increases transparency and accountability throughout the Program Cycle — from program design to monitoring, evaluation, and learning.

7. FURTHER READING

Evidence-based approaches to biodiversity programming and conservation:

Identifying and Using Evidence in Biodiversity Programming (USAID 2016). This USAID brief reviews sources of evidence that inform biodiversity programming and provides examples of incorporating evidence into the Program Cycle.

Evidence-Based Conservation (Dyson and Wentworth 2011). This brief, published by the United Kingdom's Parliamentary Office of Science & Technology, summarizes the benefits of an evidence-based approach to conservation and the issues surrounding the widespread adoption of evidence-based approaches to conservation and management.

The need for evidence-based conservation (Sutherland et al. 2004). This paper reviews the status of evidence-based approaches in conservation and suggests solutions to further their uptake.

Conservation, evidence and policy (Adams and Sandbrook 2013). This paper furthers the discourse on the role of evidence in conservation policy and argues for a model of evidence-informed conservation that considers a broader array of evidence sources and frames conservation science as one source of information among many informing policy decisions.

Challenges to using evidence-based approaches in biodiversity conservation:

Do conservation managers use scientific evidence to support their decision-making? (Pullin et al. 2004). This paper presents a survey of management plans and their compilers from four major conservation organizations in the United Kingdom that assessed the extent to which they used scientific evidence to make decisions about management actions.

Evidence complacency hampers conservation (Sutherland and Wordley 2017). This commentary discusses the culture of "evidence complacency" that remains in many areas of conservation policy and practice despite improved availability of evidence on conservation effectiveness. The authors call on the conservation community to make the consideration of evidence part of the conservation norm.

ENDNOTES

1 See Section 5 in *Unit 2: Using Evidence* for further explanation on how triangulation is used to strengthen the confidence in findings within a study's context.

2 This definition of an evidence-based approach is based on Sacket et al. (1996). The current conceptualization of evidence-based approaches began in medicine in the early 1990s (Sackett and Rosenberg 1995). Now mainstream, evidence-based approaches have expanded to other disciplines including biodiversity conservation.

3 Teams may find a **Political Economy Analysis** a useful approach for exploring political and economic influence on program success. Political Economy Analysis is a field-research methodology used to explore the causes of a development or governance issue or a problem in implementation. See *Using Political Economy Analysis for Biodiveristy Conservation Planning* for a case study applied to the biodiversity sector.

4 See *Stakeholder Engagement for Biodiversity Conservation Goals: Assessing the Status of the Evidence* (Sterling et al. 2016) and Sterling et al. (2017) for a review of how stakeholder engagement approaches affect conservation goals. Companion supplemental guidance on stakeholder engagement in biodiversity programming is forthcoming.

5 USAID learning resources that are available to support teams taking evidence-based approaches are discussed in Section 5 of this unit and in Section 5 of *Unit 4: Building the Evidence-Base.*

GLOSSARY

Adaptive management: An intentional approach to making decisions and adjustment in response to new information and changes in context (ADS 201, page 140). Evidence is an important source of information for adaptive management.

Assumption: Used in *Evidence in Action* to refer to the logical connections between drivers, threats, and the status of biodiversity focal interests in a problem analysis or those that underlie anticipated results articulated in a program's theory of change.

Effectiveness: The degree to which an implemented project or activity achieves intended outcomes. Understanding the effectiveness of a strategic approach involves testing the assumptions that underlie a program's design.

Evidence: The body of facts or information that serve as the basis for programmatic and strategic decision making in the Program Cycle (ADS Chapter 201, page 145). Used in *Evidence in Action* to refer to (1) individual findings or pieces of information used to help make a decision or support a conclusion; and (2) the body of findings or information providing support for (or countering) a belief or claim related to effectiveness or attribution.

Evidence-based approach: The conscientious, explicit, and judicious use of current, best evidence in program decisions. An evidence-based approach encompasses identification, use, and generation of evidence to increase program effectiveness.

Grey literature: Documents and other materials produced outside of commercial or academic publishing and distribution channels, including government agencies, universities, corporations, non-governmental organizations, societies, and other professional organizations.

Open access article: Papers published in scholarly journals that are available online to the reader without a subscription or pay-per-view fees.

Primary literature: Publications produced as a result of original research or observations.

Program (and Programming): Used in *Evidence in Action* as a general term to encompass USAID project and activity levels.

Strategic approach: A set of actions with a common focus that work together to address specific threats, drivers, and/or opportunities in order to achieve a set of desired results.

Systematic review: A type of literature review using established protocols to acquire, critically appraise, and synthesize all available evidence relevant to a specific question.

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