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BIODIVERSITY HOW-TO GUIDE 1

Developing Situation Models in USAID Biodiversity Programming

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MEASURING IMPACT

CONTRACT INFORMATION

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Front Cover: Fisherman drying fish on racks in the village of Nkolongue within the USAID-supported Lake Niassa Reserve, Mozambique. As a result of efforts to manage Lake Niassa's natural resources, local communities are beginning to prosper and sustainably enjoy what is theirs by nature: the rich biodiversity of the lake. Photo credit: Caroline Cook

Back Cover: Coffee plants in Guatemala grow under natural shade created by a native tree species on this Rainforest Alliance Certified Coffee Farm. Photo credit: USAID

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ACRONYMS

ADS	Automated Directives System
CDCS	Country Development Cooperation Strategy
COBI	Comunidad y Biodiversidad, AC (Community and Biodiversity Civil Association)
CMP	Conservation Measures Partnership
E3	Bureau for Economic Growth, Education, and Environment
FAB	Office of Forestry and Biodiversity
IUCN	International Union for Conservation of Nature
PAD	Project Appraisal Document
PANGAS	Pesca Artesanal del Norte del Golfo de California – Ambiente y Sociedad (Artisanal Fisheries in the Northern Gulf of California: Environment and Society)
USAID	United States Agency for International Development

I. OVERVIEW

Biodiversity plays a central role in influencing multiple development sectors, including economic growth, food security, health, governance, and global climate change. To this end, the United States Agency for International Development (USAID) has invested heavily in addressing threats to biodiversity in high priority forests, grasslands, coral reefs, and other ecosystems ($250 million in FY 2015). But, historically, USAID's biodiversity programming efforts have not been sufficient for the Agency to be able to document its impact, learn from its efforts, and adapt and improve its work. With this in mind, USAID's Bureau for Economic Growth, Education, and Environment (E3) Office of Forestry and Biodiversity (FAB), is working to develop strong guidance to support program design teams as they develop and manage biodiversity conservation programs within the Program Cycle and in accordance with the USAID Biodiversity Policy.

This Biodiversity How-To Guide is the first in a series of three guides that provide in-depth guidance on key tools and practices.

- This first How-To Guide focuses on how to develop situation models to map out the biodiversity conservation problem context to be addressed.
- The second How-To Guide, *Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming*, builds off this situation model guide to help design teams develop results chains that clearly state the expected results and assumptions behind the proposed strategic approaches that make up the program's theory of change.
- The third How-To Guide, *Defining Outcomes and Indicators for Monitoring, Evaluation, and Learning in USAID Biodiversity Programming*, uses the results chains developed in the second guide and provides help identifying key results for developing outcome statements and performance indicators.

Collectively, the three How-To Guides are designed to help program design teams systematically approach biodiversity conservation design, planning, monitoring, evaluation, and learning within USAID's Program Cycle, as well as in compliance with the Biodiversity Policy and the updated Biodiversity Code.[1] While this How-To Guide was written primarily to support efforts of teams designing biodiversity conservation projects or activities, the products generated are designed to align with and contribute directly to the Intermediate Results and Development Objectives of a Mission's Country Development Cooperation Strategy (CDCS) Results Framework.

While the focus is on biodiversity programming, the concepts, practices, and tools described in these How-To Guides can and have been used in programming of other development sectors as well as integrated (multi-sector) programming. The methodology described through these three How-To Guides is based on the *Open Standards for the Practice of Conservation*, a resource that is widely used in the global conservation community. While it will help USAID staff and implementing partners comply with Program Cycle requirements and Biodiversity Code requirements, the methodology is not itself required, but highly recommended.

This first How-To Guide describes what a situation model is and how to build one. A situation model is a graphic representation of a problem analysis. It is a diagram that uses a series of boxes and arrows to succinctly represent a set of observed or presumed causal relationships among factors that impact one or more biodiversity focal interests (ecosystems and/or species). Situation models are useful tools for biodiversity program design teams, as they provide a way to work together to build and agree upon a model that represents a common understanding of what they want to conserve (biodiversity focal interests) and the various factors influencing those biodiversity focal interests, both negatively and positively. This common understanding provides the foundation for good strategic planning.

[1] USAID has a Biodiversity Code that guides the Agency in determining which programs meet the "direct" programming biodiversity requirement. All USAID programs that use biodiversity funds must comply with all four of the Code's criteria. See USAID Biodiversity Policy.

This How-To Guide breaks down the process of developing a situation model into seven steps:

Step 1: Define the biodiversity program scope
Step 2: Define biodiversity focal interests
Step 3: Identify important ecosystem services and associated human well-being interests
Step 4: Define and rate direct threats
Step 5: Define and add drivers (constraints and opportunities)
Step 6: Discuss, complete, and document the model
Step 7: Use and revise the situation model

To highlight details of how a design team would develop a situation model, a recurring teaching example using a fictitious biodiversity conservation case is included in each of these steps. This How-To Guide ends with a section devoted to real-world cases where situation models were used for a variety of purposes in biodiversity programming. Finally, this How-To Guide presents some challenges programs may encounter when using situation models and provides suggestions for how to overcome them.

II. INTRODUCTION

Biodiversity conservation programs are comprised of dynamic actions that take place in complex situations. These complex contexts usually involve an intricate interaction of social, political, economic, cultural, and environmental constraints and opportunities. Moreover, design teams must continue to learn about and adjust to the constantly changing context within which their actions take place. Given this complexity, it is particularly important for USAID biodiversity design teams to carefully consider the situation within which they are working when they plan their programs.[2]

The Automated Directives System (ADS) 201 requires or recommends a number of assessments that provide the evidence that helps design teams understand the context within which they are working (Box 1). This understanding is critical to project design teams during the preparation of a Project Appraisal Document (PAD). While these assessments are useful, they often generate so much theme-specific information that it can be difficult for design teams to determine how to use them to help make decisions and determine the best potential strategic approaches[3] for the planning task at hand.

> *Box 1. How Does a Situation Model Relate to a Context or Problem Analysis?*
>
> *As described in ADS 201, the Program Cycle's Project Design Planning Phase requires conducting a number of assessments – specifically an environmental assessment (consistent with relevant findings of the mandatory, country-level Tropical Forest and Biodiversity analysis, as in FAA 118/119, developed to inform the CDCS) and a gender analysis. It also recommends conducting or commissioning additional assessments that may be critical to understanding the current context and efficacy of possible strategic approaches.*
>
> *Collectively, these assessments, along with design team expertise and other sources of information, provide the evidence to complete a* ***context or problem analysis*** *that examines and explains the context of the problem being addressed. A situation model, however, is not equivalent to a context or problem analysis.*
>
> *A* ***situation model*** *is a diagram that displays the findings from a context/problem analysis in a logical, causal fashion to convey the most important direct threats and drivers affecting biodiversity focal interests.*

Situation models provide design teams a way to organize evidence from assessments and other sources of information in a concise, logical fashion that better prepares them to make informed decisions and, by extension, identify the best strategic approaches to achieve biodiversity conservation. A draft situation model can help design teams identify what information they need, and thus better focus the assessments they conduct or commission. Situation models also lay the foundation for starting to develop a logic model that illustrates a program's theory of change and links to the higher-level Mission Results Framework. For example, if one of the Intermediate Results in a Results Framework is to "conserve biodiversity in key ecosystems," the design team needs to determine what to conserve and how best to conserve it. A situation model can help make that determination by guiding the design team to focus on the key ecosystems and species the program needs to conserve, the direct threats affecting them, and the drivers behind those direct threats.

[2] In this and companion Biodiversity How-To Guides, the term "program" or "programming" is used as a general term to encompass USAID project and activity levels.

[3] A strategic approach is 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. *Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming* provides guidance on how to develop and use strategic approaches.

III. WHAT IS A SITUATION MODEL AND WHY IS IT USEFUL?

A situation model (often called a conceptual model) is a graphic representation of a context or problem analysis. It is an easy-to-use tool that can help a program design team understand and illustrate in a logical fashion the major forces that are influencing the biodiversity of concern at a site – large or small (Box 2). It is a diagram that uses a series of boxes and arrows to succinctly represent a set of observed or presumed causal relationships among factors that impact one or more biodiversity focal interests (ecosystems and/or species).

The step-by-step process of developing a situation model will help design teams to explicitly show the relationships among the main drivers affecting one or more direct threats that, in turn, impact the program's biodiversity focal interest(s) and related interests in any given area. As such, a situation model draws out and summarizes information and data typically captured in a context or problem analysis. If a formal context or problem analysis has been completed, the design time should use these findings to conduct the steps described in this How-To Guide. If a formal context or problem analysis has not been completed, the process described here will serve as an informal context or problem analysis exercise and can help identify important knowledge gaps.

Box 2. How Does a Situation Model Help Biodiversity Planning?

Situation models can help design teams:

- *Summarize and integrate results from a formal context analysis or from less formal sources, such as the collective, existing knowledge of design team members and/or stakeholders*
- *Identify and address information gaps in early planning stages, which can help inform a research agenda and/or learning plan*
- *Provide a forum for broader brainstorming and discussion, while helping design team members organize their thoughts and communicate a shared understanding of the conditions under which they are working*
- *Synthesize and prioritize complex information in a simple, visual form that illustrates the interrelation of factors in a problem scenario*
- *Identify which factors may be the most strategic to influence and which strategic approaches could be most appropriate for doing so*
- *Map strategic approaches and investments of other actors*
- *Effectively communicate with others what is happening in their program area and why the strategic approaches they choose are important*
- *Capture discussion of ideas and perspectives from different stakeholders*

Situation models, or variations of them, have been used in the fields of international development and public health for at least two decades. Some examples of similar tools include problem trees, SWOT analyses, fish-bone analyses, and concept maps. Over the last decade, many members of the conservation community, especially those following the Conservation Measures Partnership's *Open Standards for the Practice of Conservation*, have been using situation models in their conservation planning processes. Among the various tools in use, situation models are one of the most effective at explicitly depicting the interrelatedness among the constraints and opportunities affecting the biodiversity of a given site.[4]

A situation model provides a succinct way of documenting the most critical evidence collected from studies, research institutions, experts' input, and/or the ADS 201 required and recommended assessments for the project design phase (Box 1 on page 7). Project design teams can develop a situation model to support the context section of their PAD.

The situation model and the process of developing it will help define USAID's strategic entry points. If a team is working on the design of an activity, they could develop a more specific situation model that focuses on their site and/or thematic issues. Likewise, a situation model could be used at a CDCS or country level to help a Mission develop a focused Results Framework. Regardless of a program's level or scale, a situation model can be a useful tool for biodiversity planning (Box 2).

A situation model is a powerful communication tool to help USAID technical and program team members, implementing partners, collaborating donors, and other stakeholders visualize a program's context. A situation model illustrates, at a basic and manageable level, how different factors influence one another in a systematic way, allowing stakeholders to see how current or potential strategic approaches may affect factors within the model (see Box 3 on page 9). Likewise,

[4] Margoluis et al. 2009

a sound situation model can help design team members identify key factors to focus on when selecting strategic approaches, as well as illustrate where partners and other stakeholders are taking action and what strategic approaches they are supporting. A situation model can be developed at any scale, large or small.

Box 3. Components of a Situation Model

***Biodiversity Program Scope**: Definition of the broad parameters or rough boundaries (geographic or thematic) for where or on what a program will focus.*

***Biodiversity Focal Interest**: An element of biodiversity (species, habitat, and/or ecosystem), within the defined scope, on which a team has chosen to focus.*

***Ecosystem Service**: Service that functioning ecosystems, species, and habitats provide and that can benefit people (e.g., water filtration, wild food for consumption, or recreational opportunities).*

***Human Well-Being Interest**: In the context of biodiversity conservation, those components of human well-being affected by the status of biodiversity focal interests (e.g., health, livelihoods, security).*

***Direct Threat**: A human action or unsustainable use that immediately degrades one or more biodiversity interests (e.g., unsustainable logging, overfishing, or mineral extraction).*

***Stress**: An altered key ecological attribute of biodiversity focal interest. In many cases, a stress is the biophysical way in which a direct threat impacts a biodiversity focal interest.*

***Driver**: A constraint, opportunity, or other important variable that positively or negatively influences direct threats*

- ***Constraint**: A factor that contributes to direct threats and is often an entry point for conservation actions (e.g., logging policies, demand for fish, and human population growth). Also called a "root cause" or "indirect threat."*
- ***Opportunity**: A factor that potentially has a positive effect on biodiversity interests, directly or indirectly; often an entry point for conservation (e.g., demand for sustainably harvested timber, established culture of conservation).*

The generic situation model in Figure 1 on page 10 illustrates the relationship of these terms. Figure 2 on page 10 illustrates these concepts in a tropical forest context.

Situation models also serve as the foundation for formulating a detailed theory of change, which indicates how the selected strategic approaches will reduce threats and ultimately conserve biodiversity focal interests. For more information, see *Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming.*

A situation model is a "living" diagram. It will change over time as the context of a program changes and as program managers and implementing partners gather more information on the site, stakeholders, and factors that influence their focal interest (Figure 1 and Figure 2 on page 10). Thus, situation models need to be revisited and updated over the life of the program, a hallmark of good project learning and adaptive management.[5]

Box 4. Software Programs for Situation Models

Miradi Adaptive Management Software – This software helps practitioners complete all the design steps, including laying out a situation model.

***MS Visio** – This diagramming software has features that facilitate creating flow charts, such as situation models.*

***MS Word or MS PowerPoint** – These programs provide basic drawing features that are more time-consuming and less flexible than Miradi or MS Visio.*

[5] This How-To Guide uses the Program Cycle Learning Guide definition of adaptive management: "an approach to implementing the Program Cycle that seeks to better achieve desired results and impacts through the systematic, iterative, and planned use of emergent knowledge and learning throughout the implementation of strategies, programs, and projects…Adaptation may include (a) redefining or otherwise modifying statements of anticipated results and (b) adapting or modifying modalities, mechanisms, and strategic approaches employed to achieve results." This How-To Guide interprets this to mean that adaptive management integrates project design, management, and monitoring to test assumptions, adapt actions, and learn. An important approach USAID uses to practice adaptive management is the Collaborating, Learning, and Adapting framework.

Figure 1: Generic Situation Model Illustrating the Relationship of Key Components

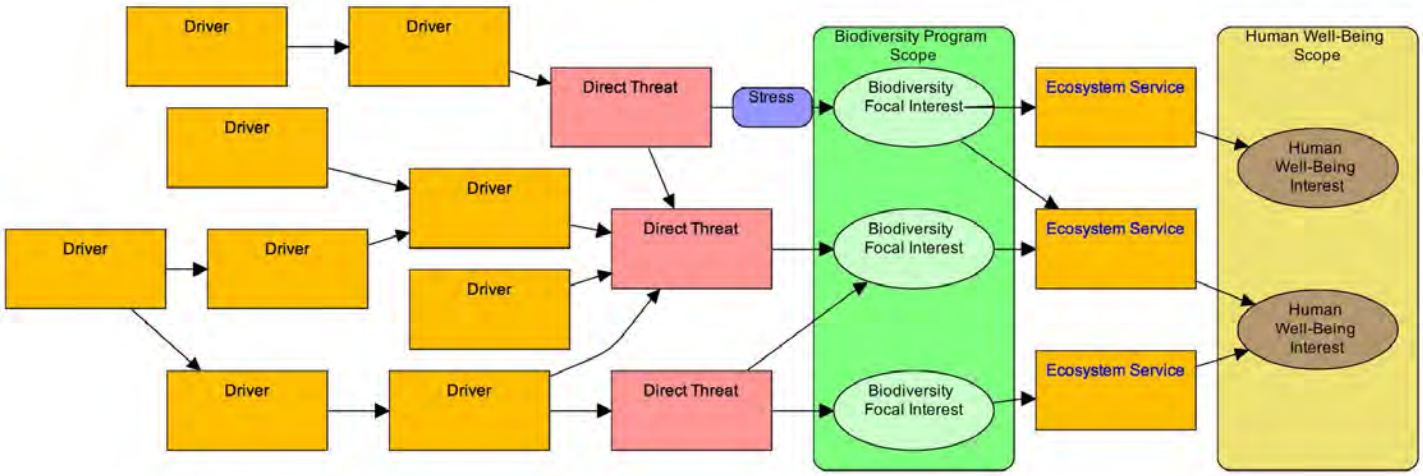
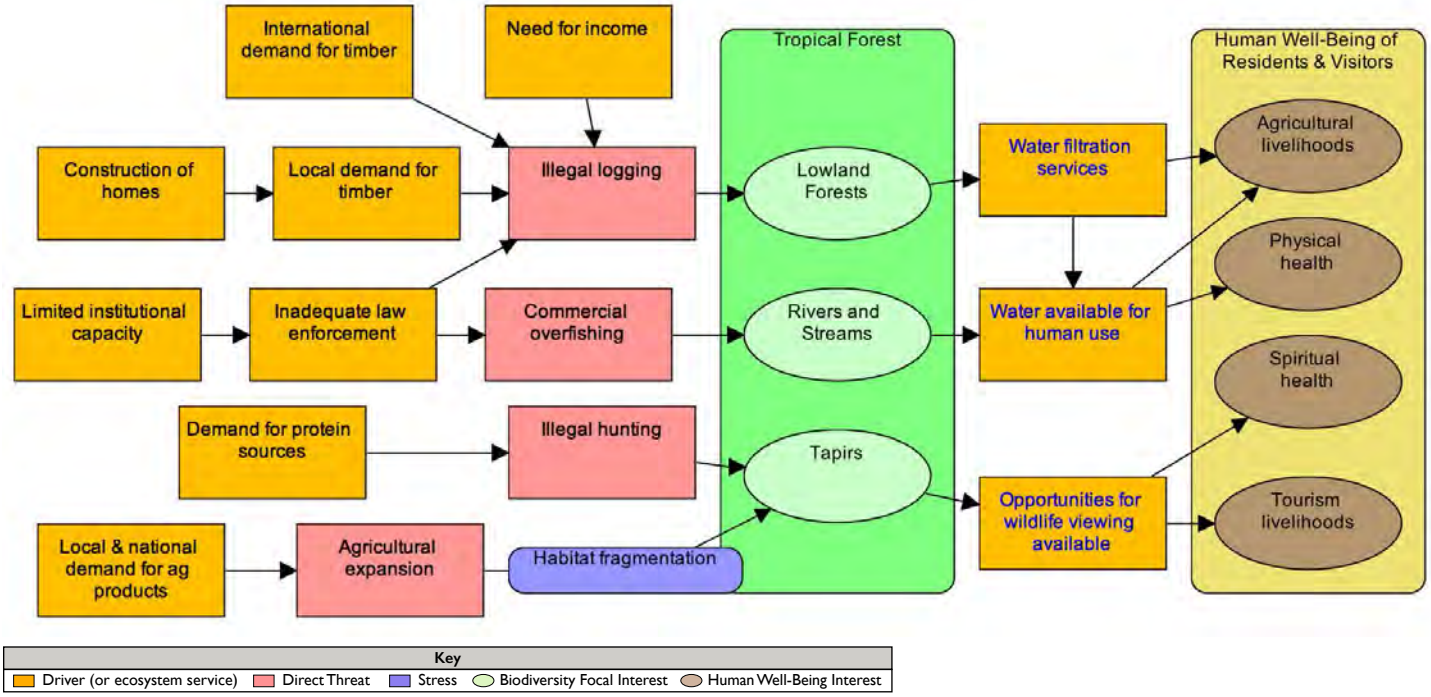


Figure 2: Situation Model Illustrating Key Components in a Tropical Forest Context



IV. HOW TO DEVELOP AND USE A SITUATION MODEL

The explanation of this process assumes that a design team will use color-coded cards to represent different components of the situation model. These cards can be placed and rearranged on a wall, bulletin board, white board, or similar large surface that allows the team members to add, delete, and move cards that describe the situation model component. A team can perform the same task (rearranging factors in a diagram) if it is using planning software. In the biodiversity conservation community, Miradi Adaptive Management Software is widely used and a good choice (see Box 4 on page 9 for other options). The diagrams in this guide were generated using Miradi.[6]

When building a situation model, a design team should plan to invest at least a few hours together, and it may take an entire day to develop the initial model. Developing a situation model is often best done in a participatory fashion. However, it is not always possible to bring together the appropriate stakeholders to build the model. A less animated but more efficient option can be for a small team – of four or fewer people – to draft a first version of the model which can later be vetted with a wider group. Design teams should take care to document discussions and decisions as they go along. This will help the current design team explain their rationale and help future team members understand the decisions and assumptions they made.

BIODIVERSITY HOW-TO GUIDE EXAMPLE: THE GRAND RIVER PROJECT

All three Biodiversity How-To Guides use a fictitious example design team and project referred to as the Grand River project example.[7] The Grand River project example's purpose links to a fictitious CDCS component – an Intermediate Result on "Biodiversity conservation for improved well-being of targeted rural communities." Although fictitious, the example is based on real-life conservation contexts.

PREPARING FOR THE PROCESS

The process of developing a situation model will be only as good as the information and effort put into it. The methodology presented in these How-To Guides will prompt questions and set up decision-making steps. Design team members should bring their expertise, but should also be aware of and willing to fill information gaps as they arise. The design team should have all members present when constructing its situation model (see ADS 201 for guidance on assembling a Project Design Team). The design team should agree upon planning, facilitation, and note-taking roles. Before assembling, design teams should review and make notes on any existing assessments for the area and understand their findings. They should bring this information, along with maps and any additional resources, including any previously completed context or problem analysis, to the group discussions (Box 5 and Box 6).

Box 5. Engaging Stakeholders

A situation model should be based on the best data available. However, it will also reflect the input of those who help build it. A situation model is a great tool for engaging key stakeholders and harvesting local knowledge about the context. It is important to involve stakeholders with different experiences and interests to ensure that the situation model is appropriately comprehensive. Design teams should carefully consider whom to engage and when, as well as the consequences of involving them or not involving them. For more information, see the Collaboration, Learning, and Adapting section on USAID's ProgramNet.

Box 6. Information for a Situation Model

A situation model should draw on empirical evidence from research, assessments, and evaluations. Many USAID-required and USAID-recommended assessments should already be available. In many biodiversity conservation contexts there is a wealth of information available, and the design team should review and use it in developing their situation model.

The design team should include individuals with expert knowledge and/or field knowledge. This will help give the situation model a strong grounding. If experts and field staff have also produced assessments and evaluations, then the design team will be able to harness their knowledge directly and incorporate it into the situation model. During the process, the design team should note where evidence exists and where there are uncertainties and gaps, and decide how to address these.

[6] Within USAID, Miradi is approved software for use in biodiversity conservation programming. For more information, contact the E3/FAB Office (fab@usaid.org)

[7] The Grand River example used in these How-To Guides is a teaching example and should not be interpreted as an endorsement of any specific thematic or technical decisions taken along the course of the example development.

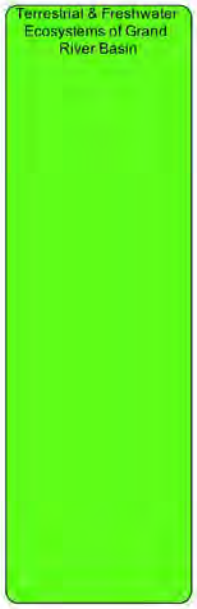
Step 1: Define the Biodiversity Program Scope

Once assembled, the design team members should discuss the biodiversity program geographic or thematic scope,[8] write it on a card, and place it at the far right-hand side or the top center of the workspace (e.g., wall, large flip chart sheet, white or chalk board, etc.). The biodiversity program scope defines the boundaries of where or on what the program will focus. In other words, it encompasses the program's biodiversity focal interests. It can be a natural boundary (e.g., ecosystem, ecoregion, landscapes, watershed), or a political boundary (e.g., state, province, region).

Independent of the scale, the biodiversity program scope should be informed by guidance in the Biodiversity Policy. This program scope will form the basis for the project purpose (depending on the level of planning within a Mission's Results Framework), as described in *Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming*.

As shown in Figure 3, the example design team identified the terrestrial and freshwater ecosystems of the Grand River Basin as the scope of its project. It is assumed this particular watershed was selected because of its high biological diversity; perhaps it has high species endemism, several protected areas, or important ecosystems that are under-represented in the country's protected areas system. The justification and supporting information for the scope definition should be clear and documented in order to comply with the relevant USAID Biodiversity Code requirements. In practice, it is highly recommended to have the biodiversity program scope delimited on a map.

Figure 3: Grand River Project Example – Biodiversity Program Scope

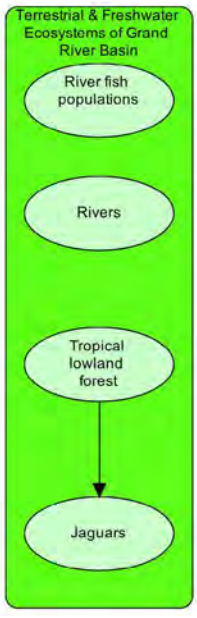


Step 2: Define and Add Biodiversity Focal Interests

Biodiversity focal interests are the species, habitats, and/or ecosystems that a program is working to conserve. Biodiversity focal interests should be clear and discrete and within USAID's manageable interest, yet also represent and encompass the full suite of biodiversity to be conserved and/or managed at the program area (Box 7 on page 13). It is common for a design team to develop a first draft of biodiversity focal interests that they will later revise in order to reduce redundancy and consolidate different, but related, components. When selecting from multiple potential biodiversity focal interests, it is important to consider that USAID works to conserve biodiversity because conservation is an essential element of good development.[9] Biodiversity focal interests, through the ecosystems services they provide, contribute to human well-being on many fronts. Keeping this in mind will help the design team select the right type of biodiversity focal interests.

As part of defining biodiversity focal interests, design teams should access information about the biodiversity focal interests' most important attributes, their status, and what constitutes a healthy condition. This information is usually included in a viability assessment (or equivalent) of the biodiversity focal interests, or more generally in the country's tropical forestry and biodiversity assessments.[10] These types of assessments help to define biodiversity focal interests in the context of the selected program scope, and will later help define the program's purpose or sub-purpose(s) statements.

Figure 4: Grand River Project Example – Biodiversity Focal Interests



[8] This How-To Guide focuses on building a situation model. However, it refers to several important steps and components in the Program Cycle (e.g., defining scope and biodiversity interests and rating threats). For more detailed information, see Resources section on page 29.

[9] See USAID Biodiversity Policy 2014.

[10] Also known as a 118/119 assessment, this is a USAID requirement for every CDCS, and must be updated every five years.

When discussing possible biodiversity focal interests, design teams should put each one on a separate card and then arrange the cards vertically underneath the biodiversity program scope card. If relevant, design team members may also want to show relationships between different biodiversity focal interests (arrows and group boxes can be useful).

In the Grand River project example, the design team determined that river fish populations, rivers, tropical lowland forest, and jaguars were the biodiversity focal interests (Figure 4 on page 12) and that there was a strong relationship between the tropical lowland forest and jaguars (which require large expanses of contiguous forest for their habitat range). Design teams should clarify what the selected biodiversity focal interests include and what they don't include. Narrative descriptions and maps will make this clear to all stakeholders. In the Grand River example, this may imply answering questions, such as: Which river fish populations? What is meant by rivers? What is the extent of the tropical lowland forest?

Box 7. Defining Biodiversity Focal Interests

The process of defining biodiversity focal interests includes selecting a limited set of ecosystems and/or species that collectively represent the biodiversity within the program scope. This involves using a "coarse filter" and "fine filter" approach.

***Coarse filter** interests are those key ecosystems that, when conserved, also conserve the majority of species within the program scope.*

*The **fine filter** is used to identify species and communities that are not well-captured by coarse filter interests and, thus, require individual attention. These fine-filter interests may be rare, face unique threats that do not threaten the broader ecosystem (e.g., overhunting), or require unique strategic approaches (such as the jaguars in the Grand River example).*

For more detailed guidance on defining biodiversity focal interests, see the Resources section on page 29.

Step 3: Identify Important Ecosystem Services and Associated Human Well-Being Interests

As an essential component of development, conservation is inevitably a social undertaking. Humans serve as conservation stewards, depend on natural resources and systems for their livelihoods and well-being, and exert threats to biodiversity through unsustainable use or when they fail in their role as stewards. Given this situation, many design teams and implementing partners feel it is important to illustrate their understanding of these interactions and clarify, where appropriate, how their biodiversity conservation strategic approaches contribute to human well-being. As described in this step, situation models may (but are not required to) include the human well-being context and how it affects or is affected by biodiversity conservation.

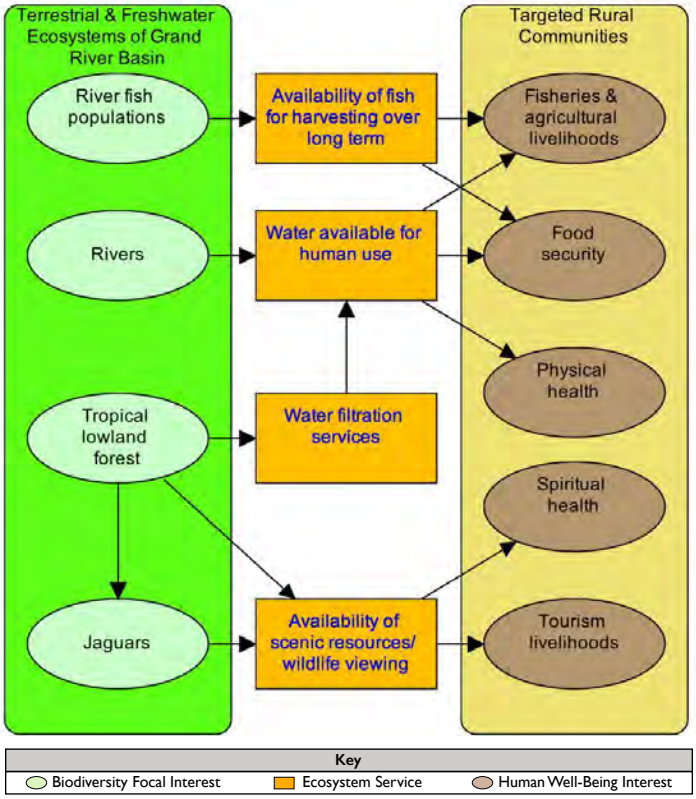
Once the design team has defined its biodiversity focal interests, it could identify and illustrate the ecosystem services they provide and how these ecosystem services may affect human well-being. As described in Box 3 on page 9, ecosystem services are services that functioning ecosystems, species, and habitats provide and that can benefit people (e.g., water filtration, wild food for consumption, and recreational opportunities). The Millennium Ecosystem Assessment offers categories of ecosystem services that can be a useful reference.

In the context of the USAID biodiversity conservation programming methodology detailed in this How-To Guide, the human well-being interests depicted are those affected directly by the status of biodiversity focal interests and the ecosystem services they provide – for example, health, livelihoods, and security. This last point is an important clarification. Although a design team may care about all aspects of human well-being, if its main programmatic goal is biodiversity conservation, it should focus on human well-being as it is derived from or dependent upon biodiversity and associated ecosystem services. This clarification of ecosystem service contribution to human well-being is consistent with USAID's Biodiversity Policy. However, this programmatic focus should not be interpreted as suggesting that (a) this is the only way that biodiversity programming contributes to human well-being, for example, biodiversity conservation efforts can directly yield development co-benefits, such as diversified livelihoods, gender equity, and improved governance; (b) that the only way to benefit such human well-being interests is through biodiversity conservation; or (c) that all biodiversity conservation efforts have a positive effect on human well-being interests.

Design teams that choose to show human well-being interests should be careful to dedicate limited time to this task, as the following steps of developing, describing, and analyzing the problem scenario are critical, as well as challenging. Also, this step does not need to be completed sequentially, it can be worked on separately or added on after other steps in the process have been completed.

Figure 5 shows how the Grand River project example design team included ecosystem services and human well-being interests in their situation model.[11] They noted that if river fish populations were in good health, then fish would be available over the long-term for harvesting – an ecosystem "provisioning" service important for sustaining fisheries livelihoods. Likewise, they identified the availability of scenic resources and wildlife for viewing as an ecosystem service that contributes to tourism livelihoods and spiritual health; the latter is a less tangible yet important aspect of human well-being.

Figure 5. Grand River Project Example – Biodiversity Focal Interests, Ecosystem Services, and Human Well-Being Interests



Step 4: Define and Rate Direct Threats

So far, the design team has identified biodiversity focal interests, the biodiversity program scope where they exist, and their associated ecosystem services and human well-being interests. Step 4 has design teams identify direct threats, which are the human actions that negatively affect the biodiversity focal interests.

Drawing on their own technical expertise, as well as information from required assessments and other key sources, the design team can start proposing direct threats to the biodiversity focal interests that were identified in Step 2. These should be written on cards (using a different color, usually pink, to distinguish threat cards from biodiversity focal interest cards), placed on the workspace, and connected by arrows to the biodiversity focal interests they affect. Design teams should not try to include every single direct threat – just the main ones. If a context or problem analysis has already been completed, add in the direct threats identified during that process. Design teams will find that some direct threats influence multiple biodiversity focal interests and some direct threats contribute to other direct threats (e.g., a threat of road construction could contribute to illegal selective logging because the road provides a way for loggers to access previously remote areas).

As illustrated in Figure 6 on page 15, the Grand River project example design team identified the main direct threats affecting their biodiversity focal interests to be overfishing, small scale agriculture, large scale cattle ranching, illegal selective logging, and excessive hunting and revenge killing.

For clarity, it may be necessary to include stresses that describe the degraded key ecological attributes resulting from one or more direct threats to a biodiversity focal interest (Box 8 on page 15 and Table 1 on page 15). Each direct threat causes at least one stress to a biodiversity focal interest. To keep the model simple, the design team should not

[11] To keep figures readable, not all ecosystem services and human well-being interests are included in all figures throughout this How-To Guide.

add all the stresses, but can illustrate those stresses where the connection between the direct threat and the biodiversity focal interest is less obvious.

For example, in Figure 6, the Grand River project example design team included the stress of altered sedimentation regime because they did not feel it was obvious how cattle ranching affected rivers.

Once the design team develops an initial list of threats, they should review them to clarify intent, reduce redundancy, group, and justify the final selection. The design team can take into account scale and stakeholders to help with clarification. For example, a design team may list "unsustainable cattle grazing" as a threat, but because of the different biodiversity focal interests impacted, the degree of impact, and the different stakeholders involved, it may be a good idea to list it as two threats "large-scale commercial cattle ranching" and "small scale subsistence cattle ranching."

Box 8. Distinguishing Direct Threats and Stresses

Stakeholders commonly confuse direct threats and stresses. While the difference may seem minor, it can affect threat ratings as well as the design team's choice of strategic approaches. Here is some guidance to help use the concepts consistently.

***Direct Threat**: An action taken by a human that degrades a biodiversity focal interest. A threat has at least one actor associated with it, e.g., agricultural expansion, hunting.*

***Stress**: An impaired key ecological attribute – often, the biophysical impact of a direct threat on the biodiversity focal interest. A stress is a property of a biodiversity focal interest. A single stress can be caused by multiple threats (see Resources section on page 29 for more information), e.g., habitat fragmentation, altered population structure.*

Figure 6. Grand River Project Example – Addition of Direct Threats (and Stresses)

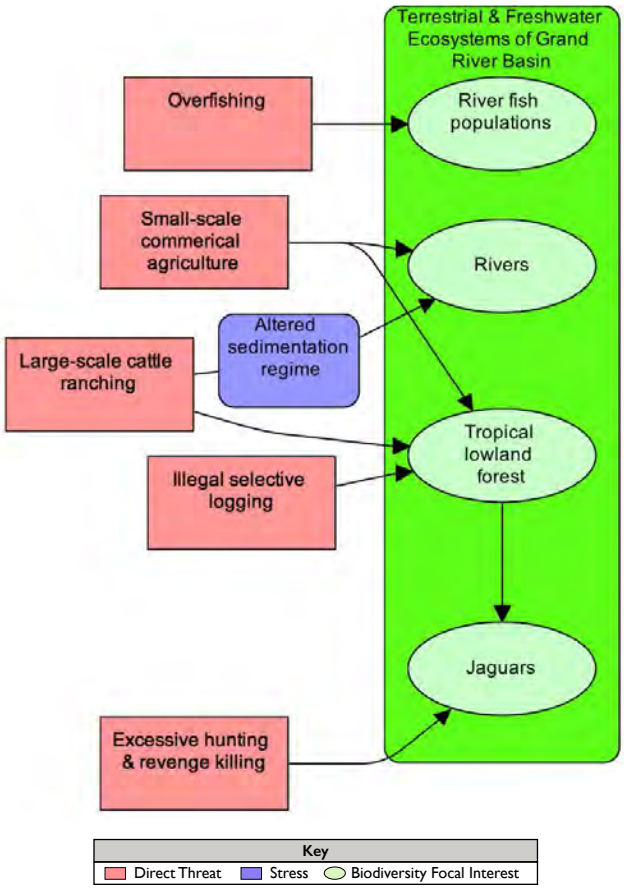


Table 1. Example Direct Threats Versus Example Stresses

Example Direct Threat	Example Stresses	Example Biodiversity Focal Interest Affected
Dams	Altered stream flows Reduced reproductive success of fish	Rivers and Streams Migratory fish
Unsustainable Logging	Altered sedimentation regime Deforestation Habitat fragmentation	Rivers and Streams; Estuaries Forests; Grasslands; Wetlands Forests; Grasslands; Wetlands
Illegal Hunting	Altered population structure	Monkeys; Rhinos
Unsustainable Agriculture	Altered sedimentation regime Habitat destruction Habitat fragmentation	Rivers and Streams; Estuaries Forests; Grasslands; Wetlands Forests; Grasslands; Wetlands
Climate Change	Coral bleaching Altered hydrologic regime (rising sea levels) Altered species composition	Coral Reefs Mangroves Forests; Grasslands; Deserts

In other cases, grouping threats may be appropriate. For example, a design team may group clear-cutting and selective logging into one threat called "unsustainable logging practices" because the actors doing both are similar and the threats have the same drivers. Whether to lump or split direct threats often becomes more obvious as the team develops its situation model. See Annex on Frequently Asked Questions About Situation Models on page 30.

Box 9. Direct Threat Ratings

What is a threat rating? *A threat rating is a method for explicitly assessing the impacts of threats on biodiversity focal interests and the overall project area. It involves using a set of well-defined criteria (e.g., **scope**, **severity**, and **irreversibility**) to systematically assess the direct threats affecting a project's biodiversity focal interests.*

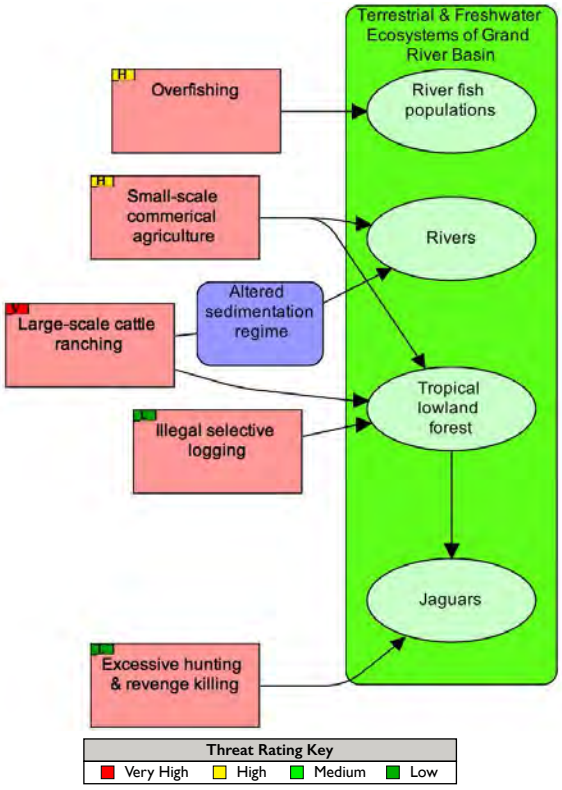
Why are threat ratings important? *Threat ratings help a design team understand priority direct threats affecting biodiversity focal interests and where, with limited resources, strategic approaches might have the greatest impact.*

How do you conduct a threat rating? *Design teams can do absolute ratings or relative ratings. The best practice is to rate each threat as it affects each relevant biodiversity focal interest. Miradi software offers step-by-step guidance for doing a threat rating and will automatically calculate roll-up values across ratings. See Resources section on page 29 for additional information.*

Before developing the rest of the model, it is strongly recommended that the design team rate the direct threats (Box 9). If the model includes a lot of direct threats, the design team may choose to develop the remainder of the situation model for only the highest priority threats.

Figure 7 shows how the Grand River project example design team rated its direct threats. The color-coded squares at the top left of the threat boxes indicate the summary rating for each threat. Through this rating process, the Grand River project example design team identified overfishing, small scale commercial agriculture, and large scale cattle ranching as the greatest threats to the overall area. These are the threats the design team would seek to address with its limited resources.

Figure 7. Grand River Project Example – Direct Threats with Ratings



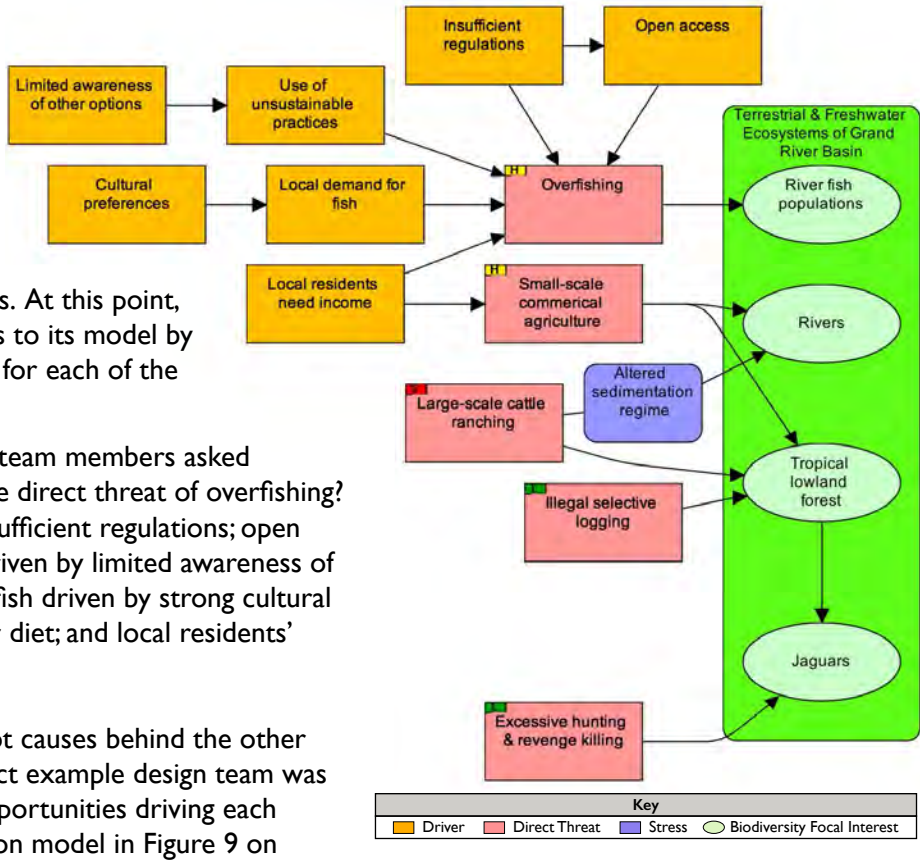
Rating direct threats is a critical step in program design and planning; however, detailed instruction for specific techniques for doing so is beyond the scope of this How-To Guide. For more detailed instructions, see the Resources section on page 29.

When adding direct threats to the model, the design team should review the definitions in Box 8 on page 15 and the proposed direct threats to make sure that none of them are stresses. This will become particularly important when rating or ranking direct threats – the design team needs to rate comparable factors. The *Unified Classifications of Direct Threats*, the result of a collaborative effort between the International Union for Conservation of Nature and the Conservation Measures Partnership, is a very useful tool for identifying and categorizing direct threats and for helping to ensure that the direct threats identified are not actually stresses. If a proposed direct threat is not in this taxonomy, then it is likely that it is a stress or a constraint.

Design teams will probably not have all the information on hand to identify and rate the threats. If this is the case, they should identify evidence gaps, assign responsibilities to address them, seek the missing information, and reconvene with the new information to improve the situation model and update the threat rating.

If a formal context or problem analysis has been completed, there should be information available about the drivers (constraints and opportunities) that are causing, exacerbating, or mitigating the direct threats to the program's biodiversity focal interests. These drivers are the factors that positively or negatively affect the direct threats and usually include economic, political, institutional, social, and/or cultural influences. At this point, the design team can add those other factors to its model by working from right to left and placing cards for each of the factors into the model.

Figure 8. Grand River Project Example – Drivers Causing Overfishing Added



In the Grand River project example, design team members asked themselves the question: What is causing the direct threat of overfishing? They identified several factors, including: insufficient regulations; open access; the use of unsustainable practices driven by limited awareness of other harvesting options; local demand for fish driven by strong cultural preferences that include fish as part of their diet; and local residents' need for income (Figure 8).

By asking themselves what could be the root causes behind the other factors in the model, the Grand River project example design team was able to identify the main constraints and opportunities driving each of their direct threats (see complete situation model in Figure 9 on page 19). Although design teams are often focused on threats, it is also important to capture key opportunities, as these may be areas on which the program can capitalize in the future. These drivers can be flagged as "opportunities" with a "+" sign in front of the text in the box or a different font color.

The design team will need to identify initial drivers for all direct threats and then ask what the root causes behind those drivers are, working to the left until the model is reasonably complete. As the design team completes its situation model, it should draw the arrows to show the influence over or relationship that each factor has to other factors. Some drivers will affect more than one direct threat and/or will affect other drivers. The arrows will help the design team later to identify critical factors and potential paths along which to develop strategic approaches and establish project outcome statements.

If there are uncertainties regarding how one driver affects a direct threat (or other drivers), design teams can use question marks or footnotes (or text boxes and comments fields, if working in Miradi software) to note them so they can be reconciled as more information becomes available. The design team should note in a similar manner where there is solid evidence for a particular relationship depicted in the model. Uncertainties in the model can also help the design team determine whether assessments are needed to fill important gaps or whether the gaps represent unknown causal relationships that require a learning plan to explore, learn, and adapt over time.

Finally, the design team can show many relationships, including feedback loops. However, because the situation model is an important tool for communications and management, the design team should focus on the most relevant factors and refrain from making a very complicated, difficult-to-follow diagram. Box 10 on page 18 provides some general guidance on recommended detail.

Figure 9 on page 19 shows a complete situation model for the Grand River project example, including biodiversity focal interests, threats, drivers (both constraints and opportunities), stresses, ecosystem services, and human well-being interests.

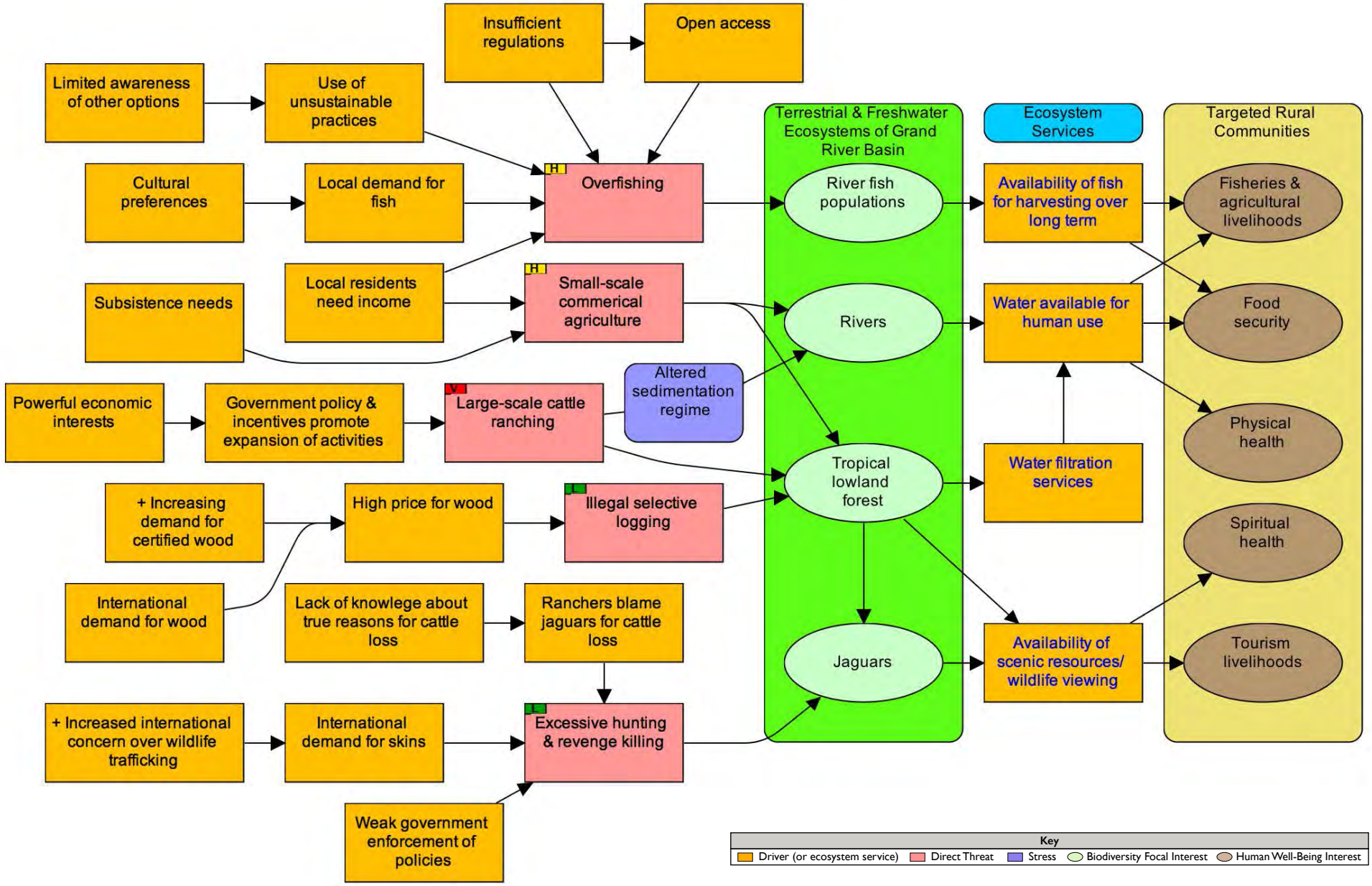
In the process of developing a situation model, the group discussion on drivers may lead to conversations about potential solutions and related strategic approaches. This can be an important initial source of ideas for candidate strategic approaches, and the design team should capture them for future discussion. However, the main focus should be on completing the situation model before going too deep into brainstorming potential strategic approaches – a step that will come later in the design process. This ensures that the situation model represents the full range of key drivers and direct threats and does not simply represent the factors the design team members are accustomed to addressing. *Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming* provides more detail on identifying strategic approaches.

Box 10. How Much Detail Should a Situation Model Include?

Design Teams may debate how much detail to include in their model. A general rule of thumb is to keep the model to 35 total factor boxes (including biodiversity and related interests, direct threats, and drivers). Another 8-10 boxes may be needed if ecosystem services and human well-being interests are included. The actual number of boxes will depend on the complexity of the situation. If a situation model has a lot of factor boxes, the design team should consider developing a simpler version that it could share with people outside the team.

Building a situation model (here in Bogota, Colombia) is a dynamic team exercise. Photo credit: USAID

Figure 9. Grand River Project Example – Complete Situation Model



*Situation models often include opportunities. Here, they are denoted with a "+" in front of the text. A design team can use other preferred conventions, such as different color text if the model is going to be printed in color.

Step 6: Discuss, Complete, and Document the Model

The design team may have to rearrange, add, delete, edit, or combine cards during the process. Many design teams have some lively debates about what should be included, where, how, and why. These discussions and decisions should be documented throughout the process. It is helpful to develop brief write-ups (one or two paragraphs) describing each part of the model, noting the degree of certainty or evidence that exists for different interactions in the model. Some notes may overlap from one factor to another – the most important thing is to document discussions. These notes will prove useful later for the design team's continued planning, for describing the model to others who did not participate in developing it, or for justifying decisions to senior managers, implementing partners, and other stakeholders. The notes can also be useful for communicating with those people who prefer text over box-and-arrow models.

Although a situation model presents a reasonably complete picture of what is occurring at a site, it should include only the most relevant direct threats and drivers. As statistician George E. P. Box said, "All models are wrong, some are useful." The objective is not a perfect or overly complex model. The product should help the design team effectively understand and communicate what is happening and decide what to do in a strategic fashion. Any written documentation of the model should help explain nuances of the model so the graphic can remain simple and easy to follow. The final model should be captured electronically (see Box 4 on page 9) or with digital photos.

Ultimately, the situation model helps the design team identify the most important interactions and causal relationships at a site in order to be able to make informed decisions as to where the program is best positioned to take action to improve the existing situation and to have a meaningful impact. For additional information, see Annex on Frequently Asked Questions about Situation Models on page 30.

Step 7: Use and Revise the Situation Model

A situation model is one of the most helpful and versatile tools for biodiversity conservation programming. The process of building a situation model helps all design team members explicitly state their understanding of the context and come to collective agreement about what is happening within the biodiversity program scope. It also helps narrow the universe of potential strategic approaches a program should consider. Selection of strategic approaches and articulation of the theory of change underlying the approach are described in the second Biodiversity How-To Guide.

Working together to make decisions. Photo credit: USAID

Depending upon who participated in the situation model's development and what technical resources are available, the design team may need to consult with stakeholders and other experts and discuss how to integrate outside input and evidence into the model.

Once project or activity implementation begins, the program managers and implementing partners should revisit the situation model at least once a year to determine if there are any new direct threats or drivers (or ones that may have been missed in an earlier model) that are now affecting biodiversity focal interests. If so, the program managers and implementing partners will need to make decisions about whether and how to address them. A situation model should be a living diagram to help shape programmatic direction, not a static document that sits on a shelf.

V. SITUATION MODELS IN ACTION: REAL-WORLD EXAMPLES

Teams have used situation models in a number of ways to help them improve their program design, implementation, monitoring, and learning, as illustrated with the examples in this section.

EXAMPLE 1. PROVIDING AN OVERVIEW OF THE SITUATION WITHIN THE BIODIVERSITY PROGRAM SCOPE – TERRESTRIAL ECOSYSTEMS, PHILIPPINES

Figure 10 on page 23 provides an example of a situation model modified from work done by the USAID-supported Biodiversity and Watersheds Improved for Stronger Economy and Resilience (B+WISER) Program in the Philippines. This model provides a quick overview of the situation affecting wetlands/mangroves, natural forest, critically endangered species, and endemic species (the biodiversity focal interests). There are nine major direct threats to these interests, some of which contribute to or exacerbate others (e.g., commercial/residential development contributes to road development). The model also shows how climate change, in particular, causes several stresses to all the biodiversity focal interests. This situation model provides a simple overview that allows anyone to easily trace the causes of a direct threat (e.g., hunting and collecting) to the drivers behind it (e.g., inadequate penalties/incentives, pet trade, and local/international demand for exotic pets). The process of developing a situation model helped the B+WISER team develop a shared understanding of what they were working to conserve, as well as the main factors negatively and positively affecting those biodiversity interests.

EXAMPLE 2. DEVELOPING A FRAMEWORK FOR STRATEGIC PLANNING – GALÁPAGOS ISLANDS, ECUADOR

In 2009, the Leona M. and Harry B. Helmsley Charitable Trust launched its Conservation Program with an initiative focused on the Galápagos Islands. After its first three-year grant cycle, the Trust conducted a review of the portfolio and developed a strategic plan for the next five years. Trust staff worked with advisors to develop a situation model (Figure 11 on page 24) and other components of a strategic plan that built off of the situation model. They vetted these initial products with key grantees and stakeholders.

Components of a strategic plan in the Galápagos Islands were built off a situation model. Photo credit: Andrew Miller

The Trust used the situation model as the basis for their strategic planning and for making systematic choices about how they would use scarce time and funding resources. The model helped them define their manageable interest, as well as what they would and would not do with their portfolio. The Trust used the model to:

- Define scope of the program: The Trust considered a range of options for their program scope, from one specific municipality in the Galápagos to the whole archipelago to the entire Galápagos Marine Reserve. They decided an inclusive, holistic approach was necessary to maximize results and, as such, chose a broad scope of the entire archipelago including the Marine Reserve.
- Select biodiversity focal interests: The Trust chose to focus on both terrestrial and marine habitats and species. They also considered human well-being interests directly linked to the biodiversity focal interests, such as economic opportunities and a healthy place to live. (Note: the model in Figure 11 on page 24 is simplified and does not include the human well-being interests.)

- Prioritize direct threats: The Trust then identified direct threats and rated them by scope, severity, and irreversibility. Priority direct threats included invasive species, climate change, infrastructure and urban development, and unsustainable and/or illegal local fishing (see threat rating indicators in Figure 11 on page 24).
- Identify key drivers and leverage points behind direct threats: The fourth strategic choice the Trust made was to identify the key drivers behind each of the direct threats in order to find the best and highest leverage intervention points.
- Brainstorm and prioritize candidate strategic approaches: The Trust brainstormed potential candidate strategic approaches for investment in order to change the situation in the Galápagos to conserve biodiversity focal interests. At this point, the Trust was no longer developing a situation model; rather, they were using their model to make important decisions about investment. Guidance on this step is provided in *Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming*. The Trust systematically compared strategic approaches to determine which might have the biggest potential impact, be feasible for the Trust to implement, and fill an important gap. The Trust also weighed its prospects for achieving meaningful impact through various strategic approaches, given the scope of the challenge, the likelihood of success, and the alignment (or lack thereof) between the Trust's budget for Galápagos and the funding need. Ultimately the Trust identified seven candidate strategic approaches as priorities.

The Helmsley Charitable Trust's process shows how situation models form the foundation for the subsequent development of an action plan by explicitly narrowing the universe of what teams try to address with their project. The Trust's model acknowledges the broader world but clarifies what its conservation program will try to address, as well as what it will not try to address.

EXAMPLE 3. COMMUNICATING AND COLLABORATING WITH SUPERVISORS, DONORS, PARTNERS, AND STAKEHOLDERS – MEXICO'S GULF OF CALIFORNIA

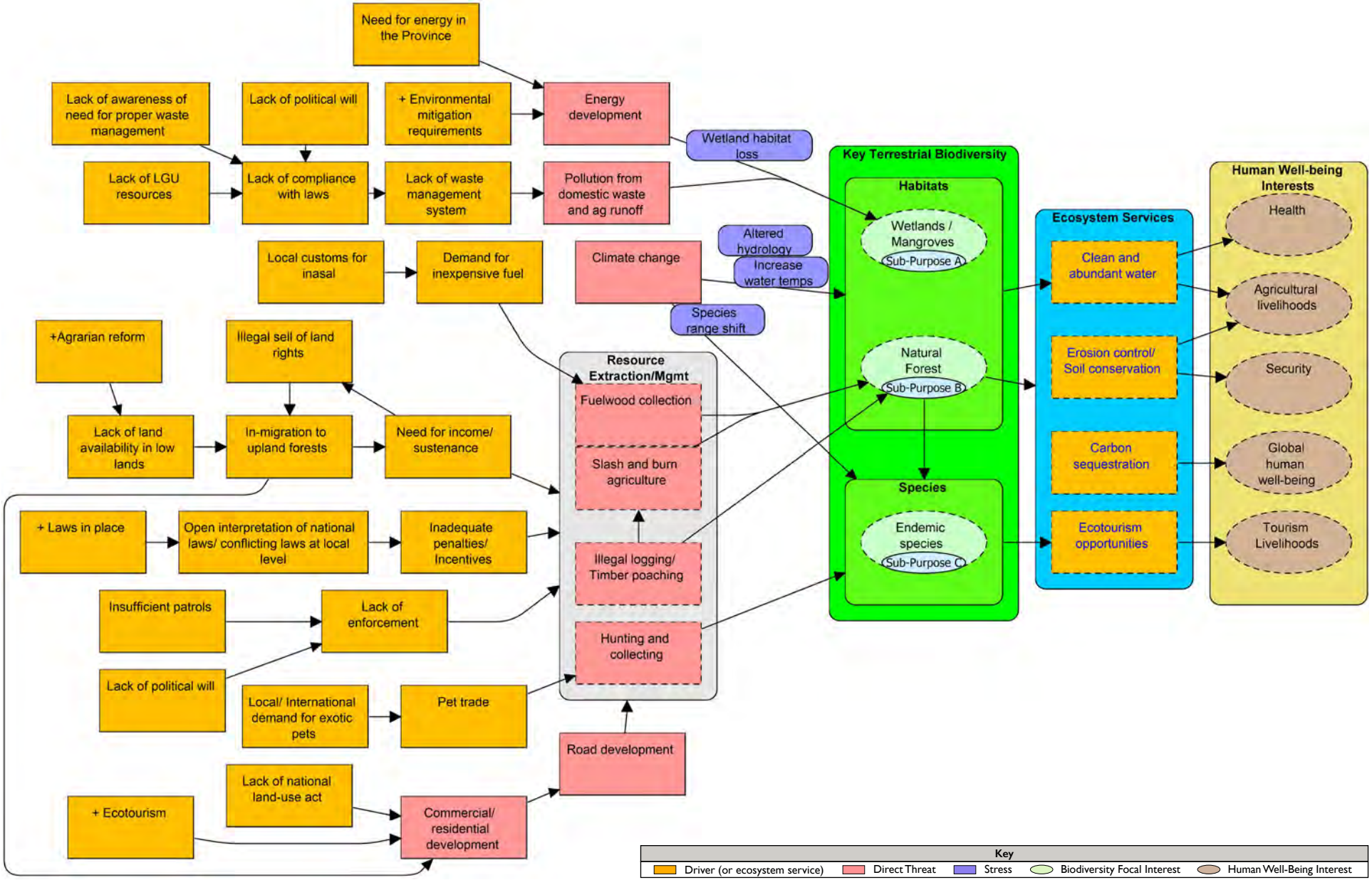
It is common to hear those who develop situation models remark with surprise that the process of developing a situation model and the model itself improve partners' ability to communicate with one another and other stakeholders. The models help them visualize how their individual strategic approaches act together to affect their entire suite of biodiversity focal interests.

In 2008, Comunidad y Biodiversidad (COBI), a nonprofit working on fisheries management and conservation in Mexico held a strategic planning workshop. One of the participants was a COBI partner from the PANGAS project, a long-term interdisciplinary study of small-scale fisheries in the northern Gulf of California.[12] In 2007, PANGAS had also developed a situation model and went through a similar strategic planning process. The PANGAS partner commented how helpful COBI's situation model was for illustrating the overlap between COBI and PANGAS and the mutual factors they were influencing in the region (Figure 12 on page 25 and Figure 13 on page 26).

In particular, the PANGAS team member noted that by looking at each institution's situation model, the team could identify the different areas of the model each organization sought to influence, given their respective areas of expertise. PANGAS's strategic approaches focused on addressing inadequate technical information through conducting research to inform management decisions (Figure 12 on page 25). COBI focused on influencing drivers related to accountability and surveillance, as well as the limited involvement of fishers in management (the bolded areas in Figure 13 on page 26). The PANGAS representative remarked that this layering and comparison of different institutions' situation models facilitated a robust understanding of the overall conservation efforts in the region and helped each institution identify opportunities for collaboration as well as gaps that needed to be filled.

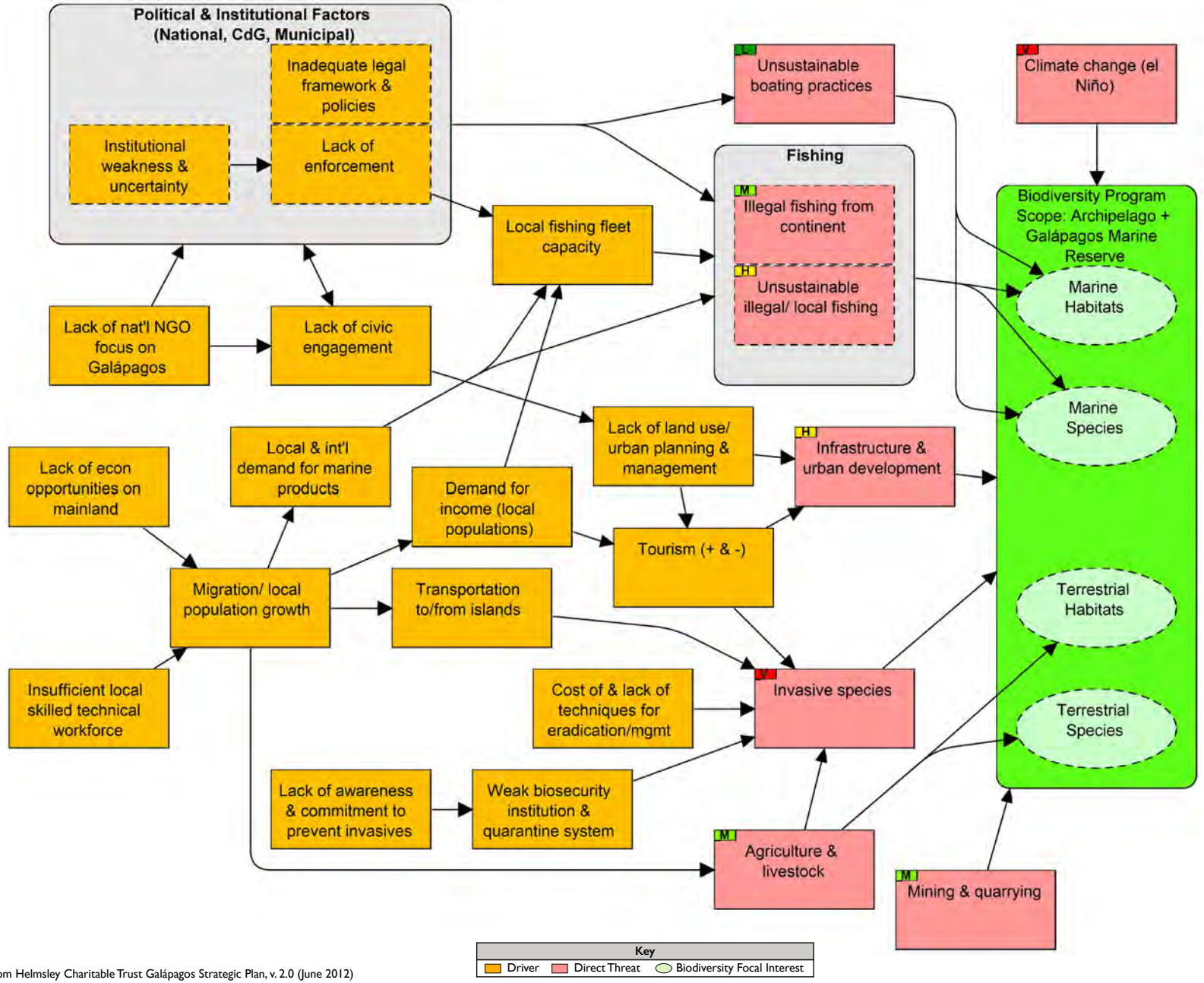
[12] PANGAS: Pesca Artesanal del Norte del Golfo de California – Ambiente y Sociedad (Artisanal Fisheries in the Northern Gulf of California: Environment and Society)

Figure 10. Example 1 – Situation Model for Philippines Terrestrial Ecosystems



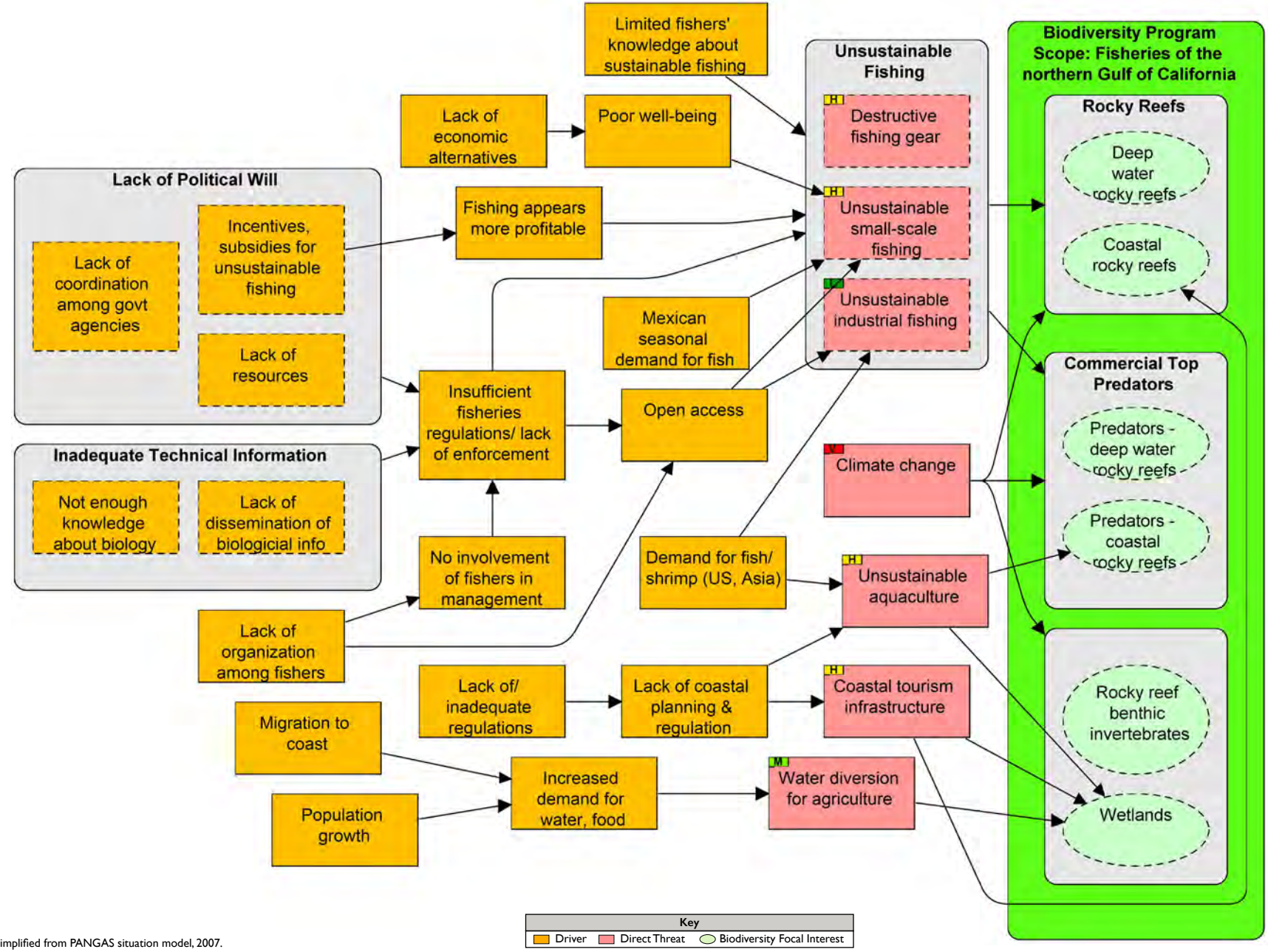
Modified and simplified from Biodiversity and Watersheds Improved for Stronger Economy and Resilience (B+WISER) Program (2013)

Figure 11. Example 2 – Situation Model for the Galápagos Islands Marine Reserve



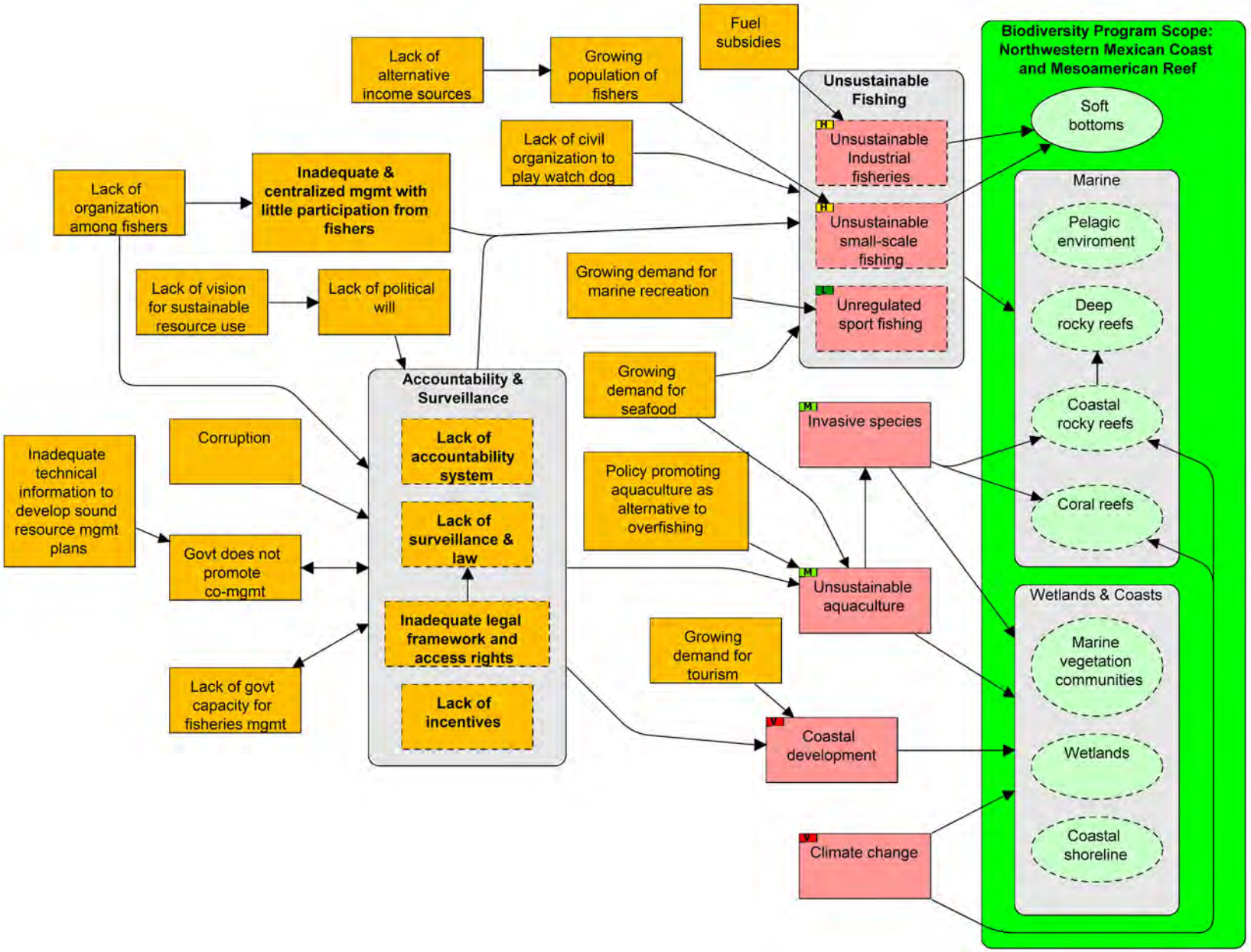
Modified and simplified from Helmsley Charitable Trust Galápagos Strategic Plan, v. 2.0 (June 2012)

Figure 12. Example 3a – Situation Model for PANGAS Fisheries



Adapted and simplified from PANGAS situation model, 2007.

Figure 13. Example 3b – Situation Model for COBI, Northwestern Mexican Coast and Mesoamerican Reef



Adapted and simplified from COBI situation model, 2008. Note: This model uses bold text to indicate drivers seen as particularly important to influence.

VI. CHALLENGES WITH USING SITUATION MODELS

A situation model is a very useful tool for helping design teams agree on the major forces affecting their biodiversity focal interests and for informing the process of strategically choosing how their program will seek to influence those forces. However, they do have some limitations and challenges, most of which are a result of how a design team applies their model:

- **A situation model is only as good as the information that goes into it.** It is critical to have the right people together to develop a situation model – people who know the area well and understand the social, economic, political, and cultural context within which the program takes place, and who will acknowledge evidence gaps and take action to address them. Likewise, situation models should be informed by existing data, including assessments, evaluations, and research.
- **Some people do not like box and arrow diagrams.** It may be necessary to develop some written text to describe the relationships depicted in a situation model. However, the textual descriptions lose the simplicity and graphical elegance of a diagram.
- **Finding the right level of detail can be a challenge.** Many design teams start by wanting to include all factors and all relationships, including feedback loops. This quickly leads to a spaghetti mess. Situation models should show only the most important factors and the most important linkages (e.g., arrows). The right level of detail ultimately varies by design team, but it also varies by audience (see Box 10 on page 18). Some may be comfortable with and even desire a fair amount of complexity because the area is well known to them. If that model is shared outside the design team, however, it will need simplification. For instance, all of the examples shared in this How-To Guide are adapted and simplified from existing projects. To make the model useful, a design team must consider the audience and tailor it to the appropriate level of detail.
- **Understanding how to best share a situation model is a related issue.** It is best to complement a full situation model with a verbal and/or written description when sharing it with anyone outside the design team. A good way to share the complexity is to build or describe the model in sequential pieces, much like the examples in this guide. The presenter can first share the biodiversity program scope, then biodiversity focal interests, and next (if relevant) the key ecosystem services and associated human well-being interests. From there, the presenter can build out the main direct threats affecting the biodiversity focal interests and phase in drivers in manageable pieces, slowly working up to the full model. The design team may need to simplify the situation model depending on with whom it is being shared.
- **Laying out the design team's knowledge and data in a model can be very time-intensive.** It takes time and skill to bring people together, synthesize existing data, and have the discussions necessary to develop a situation model. However, most design team members find this is time well-spent, as it helps them develop a shared understanding and have a strong foundation for identifying and selecting the best strategic approaches. The facilitation skills of the design team leader, or outside facilitation help, will also factor into the time-efficiency of the planning process.

VII. CONCLUDING THOUGHTS

USAID biodiversity program design teams, program managers, and implementing partners work under complex, dynamic circumstances, often seeking to meet multiple goals and challenging timelines. Sorting through the complexity and determining the best strategic approaches for a given set of conditions can be daunting tasks. Situation models can help all stakeholders understand and communicate the complexity of the context within which USAID works and focus efforts in an efficient and effective manner. While various tools exist to help frame the context, situation models are the most effective at simply depicting the interrelatedness among the constraints and opportunities affecting biodiversity within a given geographic or thematic scope. As such, a wide range of conservation organizations across the world are now using situation models.

Situation models serve as an important tool for documenting and communicating assessment and evaluation findings, key informant input, and context or problem analysis results in a clear and concise manner. Likewise, they help design teams identify gaps in knowledge and uncertainties that could inform additional assessments and research. Furthermore, building a situation model is a valuable process to engage a diverse set of stakeholders, seek their input, and organize it in a relatively simple, coherent structure. Involving stakeholders in this way also helps to build a shared understanding of and support for biodiversity conservation within the program scope.

Any USAID design team, program manager, or implementing partner could benefit from using situation models for planning, regardless of the scale. A situation model can help focus a CDCS and the corresponding development objectives. Likewise, PAD teams could use situation models to help them understand which drivers and direct threats to address to achieve desired biodiversity conservation results and thus, which activities may help them influence those drivers and direct threats. Moreover, if activities develop their own situation models, they can build off of the PAD situation model to show what portion of the overall project model they seek to address, as well as how they can contribute to the PAD (sub) purpose(s) and other expected results.

A well-developed situation model will help USAID design teams, program managers, and implementing partners be more strategic when they are considering what actions may be needed and why. Being strategic also means being clear about actions the design team will not take. For biodiversity conservation, this level of clarity will help design teams choose more effective activities and strategic approaches to positively impact their biodiversity focal interests, and will position them well for monitoring, learning, adapting, and improving.

A situation model is a living, dynamic diagram that should change over time as the program stakeholders gain a deeper understanding of or more accurate information about the relevant context. Program managers and implementing partners should plan to revisit it several times throughout the life of the program. Revisions and updates are indicative of good program learning and adaptive management.

The next guide in the series is *Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change for USAID Biodiversity Programming*. It builds off of a situation model to create results chains. Results chains help design teams ensure that causal relationships in their theory of change are clear and explicit. Using the systematic process outlined in the next guide can help design teams address the Biodiversity Policy's call to integrate program design, management, and monitoring to test assumptions, adapt actions, and learn.

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ANNEX

FREQUENTLY ASKED QUESTIONS ABOUT SITUATION MODELS

Design teams often face similar challenges and questions when constructing situation models. There are many ways to develop a situation model. The following Frequently Asked Questions and tips should help with the development of a useful model.

1. **Where do I get my information for developing a situation model?**
   USAID Program Cycle required and recommended assessments are useful but usually not enough to complete a situation model. If a context or problem analysis already exists, this would be an important major reference. Also critical are the design team's knowledge, experience, and access to additional information to fill evidence gaps that may arise while developing the situation model. It is also important to draw on abundant experiences from previous biodiversity conservation work, including past and ongoing USAID programs. Technical experts within and outside of USAID may provide valuable input and/or references. The *USAID Biodiversity Handbook* is also a valuable general reference. Design teams should be sure to allocate the necessary resources, time, and responsibilities to obtain, synthesize, and use this additional information when developing a situation model. Nonetheless, design teams must make a judgment call regarding when they feel comfortable with their situation model and the evidence to support it, in order to proceed to subsequent programming stages. The model is never final – good adaptive management involves using new information generated during implementation to update situation models and all planning frameworks.

2. **Does the full design team have to be involved in developing the situation model from start to finish?**
   No. A design team member or sub-group may draft a first rough version of the situation model for the broader design team to use as a starting point for adjustment and further development. This is a particularly useful approach when there is an existing context or problem analysis, design team meetings with full membership are difficult to schedule, and/or the process of developing a situation model is new to several team members. Having a draft to which the larger team can react can be an efficient and effective approach to developing a situation model, as long as the smaller group developing it is truly open to substantial modification.

3. **What is the right level of detail to include in a situation model?**
   Include as much detail as will be useful for stakeholders, but not so much that it becomes overly complex (a "spaghetti mess"). One rule of thumb is to keep the drivers to 20 or fewer. And not everything has to be in the diagram. Many details can be summarized in the narrative that complements the diagram.

4. **When do I lump/split direct threats?**
   Generally, direct threats can be lumped when the stakeholders behind them are the same, the underlying causes behind the direct threats are the same, and the strategic approaches used to address those underlying causes are the same. When one or more of these conditions does not exist, the design team should consider splitting the direct threat. For example, in some situations trawling, longline fishing, and blast fishing might be lumped under destructive fishing practices, especially if they are conducted by the same type of fishers. Conversely, there may be a situation where overfishing is a direct threat, but there are two main stakeholders: commercial fishing fleets and local fishers. Commercial fishing fleets are responding to different direct threats (e.g., international market demands and government policies encouraging overfishing) than the local fishers (e.g., subsistence needs and small local markets). In this case, it is probably wise to split this direct threat into unsustainable commercial fishing and small-scale subsistence fishing.

5. **Should I only include major direct threats?**
   Yes! The biodiversity within a program scope is likely affected by a number of different direct threats, but when constructing a situation model, a design team should restrict its model to only the most severe and urgent direct threats in order to focus attention and work on where it is needed most and where it can have the greatest impact.

6. **If I cannot or will not address a direct threat, can I leave it out of my model?**
   No, especially if it is an important direct threat to the biodiversity focal interest now or in the foreseeable future. A situation model should present a picture of the current situation. Other planning processes (e.g., strategic approach rankings) can help identify what should or should not be addressed. A situation model can help design teams determine where there are knowledge gaps. If a design team identifies a priority direct threat that it cannot address (or that no one else is currently addressing), the design team should include it in its model as a reminder to at least monitor the direct threat and even consider encouraging others to address it.

7. **I want to do a study. Is it useful for me to develop a situation model even though I am not implementing management or policy strategic approaches?**
   Yes. Situation models can help researchers identify important research questions that will help them provide critical information to managers, thus ensuring that their research has management implications. For example, a model might identify that managers and policy makers lack good scientific information about the sensitivity of beach and dune habitats for bird nesting and, as a result, they are not setting adequate restrictions on tourism. In this example a design team might then want to tailor its research questions to focus on tourism impacts on wildlife and provide critical data to help managers determine appropriate visitor limits and identify nesting areas that should be closed or intensively managed during nesting season.

8. **Where do I include a situation model in my PAD?**
   The context section of the PAD examines the root causes underlying the development problem, including how the interests, perspectives, and interdependencies of key actors in the local system affect the problem (ADS 201). A situation model is one of the tools that is recommended to deepen the understanding of the program context, therefore it would be an appropriate annex to this section of a PAD.

For any additional questions, contact fab@usaid.gov.

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