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Adding Biodiversity Conservation Objectives to a Value Chains & Rural Finance Initiative

The AFIRMA project experience in Mexico



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Cover Photo: Cooperative Oyster farmer in the Morrua Estuary, near Puerto Peñasco, Sonora. With help from local NGO, CEDO, the cooperative has developed an ecotourism product "the Oyster Experience", including working on the farm and enjoying an oyster feast, which is marketed by CEDO's nature tour operator, NaturArte. (Photo by Fernando Fernandez).

1.0 Introduction

The Access to Rural Finance for the Microenterprise (AFIRMA) Project, a USAID/Mexico-funded project implemented by DAI was designed to help build a more inclusive, sustainable financial sector in México, increasing access to a range of services. The project's mission was:

"To contribute to the development of a dynamic, effective microfinance sector in Mexico that provides sustainable financial services to under-served urban and rural market segments, helping them manage risk and contribute to local economic growth."

During year four of this five year project, USAID asked the project to prioritize initiatives to address threats to Mexico's biodiversity. This technical note outlines how DAI went about it, and some of the lessons learned in the process.

2.0 Context for USAID Biodiversity Programming in Mexico

Prior to outlining the approach to biodiversity programming that AFIRMA followed, it is important to point out key aspects related to biodiversity conservation in Mexico:

- **Mexico is one of the world's most biologically diverse countries.** With 1.4% of the planet's surface, it represents 10-12% of its biodiversity, and the priority biologically sensitive

areas are spread throughout the country (Figure 1). Coastal mangrove systems support biologically diverse marine systems, one of the world's most pristine seas in the Gulf of California and a globally competitive fishing industry. As the DAI biodiversity specialist who helped define the AFIRMA strategy put it, "you can throw a dart at the map and you'll be within the watershed of a biologically sensitive area."

Figure 1 - Mexican Government's Priority Areas for Biodiversity



Source: National Commission for Understanding and Use of Biodiversity, under the Secretary of the Environment and Natural Resources (SEMARNAT)
<http://conabioweb.conabio.gob.mx/metacarto/imagen.pl?img=165>

- **The Government of Mexico is committed to improved environmental management.** Based on leadership from the President and on the efforts of sub-agencies under the Environment Ministry (SEMARNAT), the Mexican government has shown an increasing commitment to environmental stewardship, including within non-environmental agencies, such as the Rural Trust Fund FIRA within the Central Bank, which finances three quarters of all agricultural credit in Mexico.
- **There are increased efforts to preserve biodiversity through the promotion of sustainable productive activity, but a need to realize more of the potential.** The government and private actors in Mexico increasingly recognize the important role that

sustainable productive activity can play in meeting conservation goals. Despite some successful experiences, this focus is often more theoretical than real, especially in instances where there is a lack of understanding of the markets for sustainable products and services, and how to link local producers to those markets.

- **USAID/Mexico's role in environmental programming is in transition.** Within the context outlined above, USAID has a long history of supporting local projects in Biodiversity conservation in Mexico. The mission has been looking for ways to move away from locally-based support towards broader, policy-oriented support. While AFIRMA was beginning to plan and implement its biodiversity initiatives, the mission had commissioned a new Assessment of Tropical Forest and Biodiversity Conservation (the FAA Sections 118-119 Report that USAID missions must carry out as part of biodiversity programming). As USAID/Mexico and AFIRMA awaited the new assessment, which was available a few months before AFIRMA closedown, USAID proactively shared priorities emerging from the analysis, which helped AFIRMA activity to be consistent with new priorities, summarize below.

USAID's New Priorities for Biodiversity conservation in Mexico*

In its latest standard review of biodiversity in Mexico published in mid-2009, the following priorities were highlighted as areas where USAID could make contributions to preserving Mexico's vast biodiversity:

1. Strengthen the capacity of government agencies for environmental management. Help the environmental sector implement existing policies, enforce environmental laws, streamline regulations and adopt best practices for sustainable natural resource management, coordinated across sectors.

2. Support efforts to enhance environmental governance at federal and state levels. Build on USAID's past efforts by supporting robust assessments of the efficiency and effectiveness of governmental programs and policies. Work with state and local authorities willing to adopt environmental management responsibilities.

3. Help landowners to develop and sell environmentally-friendly goods and services. Focus on helping producers in biologically sensitive areas acquire skills and knowledge to adopt environmentally-friendly practices and access to differentiated markets that pay a premium price, including technical assistance to meet quality, volume, and time requirements.

4. Enhance the capacity of rural communities to sustainably use natural resources. Assist local initiatives seeking to build institutional capacity at the local level, particularly those that aim to enhance accountability, democratic processes, local governance, and impartial decision-making.

5. Help expand the knowledge base for biodiversity and forest management. Continue assisting Mexico to enhance its information and analytical base for biodiversity and forest management.

* Source: Summarized based on Assessment of Tropical Forest and Biodiversity Conservation in Mexico, (FAA Sections 118 - 119 Report), USAID, Abt Associates. Version January 2009, made available April 2009.

3.0 Background on AFIRMA Biodiversity Programming: an Early Lesson Learned (Re-learned?)

When asked to look at options in biodiversity, AFIRMA initially looked for ways to fit biodiversity programming into ongoing activity, focusing first on work that had been started in the Ataulfo Mango (a tree crop indigenous to the coastal region of Chiapas) value chain¹ along the southern coast of Chiapas in the Soconusco region. The AFIRMA team, which was made up of enterprise and finance specialists eager to learn about conservation (but for whom this was not an area of expertise) sought to build on local experience and conservation initiatives in the region, and hired ProNatura, the largest Mexico-based conservation NGO with a strong presence in Chiapas, to determine options to both support biodiversity and support small scale Ataulfo producers.

¹Hanemann, Patrick; Bourns, Nathanael; Fertziger, Ivana. "Ataulfo Mango in Chiapas, A Value Chain Analysis", USAID, July 2008. Available at www.microlinks.org or http://pdf.usaid.gov/pdf_docs/PNADN332.pdf

AFIRMA and ProNatura mapped production zones, overlaid with data on threats to biodiversity and found good potential to work in preserving biodiversity in this area while involving the mango value chain, especially in mango orchards directly abutting biologically sensitive areas around La Encrucijada and El Triunfo to reduce their use of agrochemicals.² These included:

- **Links between biodiversity and yields.** Based on recommendations in AFIRMA's value chain report, the association of producers hired scientists to study root causes of productivity declines, one of which has since been shown to be the lack of cross-pollination with other types of trees, which is contributing to growing recognition of the importance of biodiversity.
- **Opportunities in organics.** Value chain analysis had shown that the limited organic mango production in the region fetched prices about 30% higher than conventional production, more than compensating for any loss in yields. Also, although not scientifically proven, anecdotal evidence from the largest organics producer suggested that yields may also have been higher in organic than in conventional orchards.

AFIRMA and ProNatura held a workshop with producers which highlighted the importance of looking at the interaction between mango production and environmental systems, market trends and opportunities, and the environmental importance of low impact agriculture in certain areas. However, the project recognized that further work along these lines would have to be with a different set of actors than those that AFIRMA had previously identified. For instance the growers targeted (whether small or large³) would ideally have been around key biologically sensitive areas, and it was not clear these were going to be the growers interested in promoting biodiversity or minimal use or elimination of synthetic agrochemicals.

The value chain partners had largely been defined prior to a new focus on biodiversity, and it was not clear AFIRMA was going to be able to contribute, for instance, to organic conversion among small producers (which takes multiple years, and tends to have negative effects on yields in the first years of conversion) in any meaningful way during the project's life. Therefore, although good analysis and some relevant work was done, it was clear that biodiversity-specific resources might have best been focused at the outset of the initiative rather than trying to fit on top of pre-existing efforts where conservation was unlikely to be a driving force.

In order to ensure that biodiversity conservation as an explicit objective of new activities, DAI brought in a biodiversity specialist to reorient the strategy.

4.0 Refocusing on the Intersection of Conservation and Productive Activity

The biodiversity specialist from DAI worked with AFIRMA to refocus re-focus new biodiversity initiatives based on USAID's biodiversity code. This meant that the project would first focus on threats to biodiversity conservation and then to look for initiatives to reduce, eliminate, or mitigate those threats that were also relevant to AFIRMA's original scope of work. The AFIRMA team worked with the DAI biodiversity specialist on an approach described below.

Given the typically long timeframes for typical quantitative results in environment programming (e.g. number of hectares converted), coupled with the evolving USAID/Mexico focus on broader policy-level initiatives, the DAI biodiversity specialist supported AFIRMA to find areas where the project could make the most significant contribution in a relatively short time frame. The

² One challenge was that due to a lack of extension services in the region dosages were determined by agrochemical distribution companies, or by producers who figured that more would be better.

³ The majority of the certified organic production came from one large producer.

approach needed to be based on reducing threats to biodiversity while also being consistent with the project's scope of work. So the overarching goal was:

“To incorporate productive activities into efforts to conserve biodiversity, via participatory planning processes and analysis of economic opportunities and potential.”

The approach sought to be relevant to broader USAID goals⁴, albeit on a scale limited by the short timeframe, in terms of people with increased economic benefits derived from sustainable natural resource management and conservation as a result of USG assistance, at two levels:

- **Enterprise development:** livelihoods that provide economic benefits from the preservation of biological resources; and,
- **Policy implementation:** to close loopholes that permit destructive activities or to help orient support activity.

DAI and USAID recognized from the outset that, while goals had to be relatively modest in terms of number of initiatives or enterprises, for the Mexican context showing the potential for new models would be important. The project would seek to get relevant work going that, because of available resources for development and environment projects in Mexico and a desire to continually improve approaches could subsequently be built upon or expanded directly by Mexican stakeholders.

5.0 Biodiversity-first Approach

The specific approach followed involved first prioritizing threats to biodiversity, then identifying productive activities relevant both to conservation and to local economies, conducting value chain analysis of the specific activities selected to identify possible areas for support, access to finance or policy change. Each of these elements is addressed below and it is important to note that the *order was essential* to come up with a set of actions meaningful (on the scale identified) both to biodiversity conservation and to promotion of productive activity.

5.1 Prioritize biodiversity threats

Along with an Environment Specialist from DAI, AFIRMA first prioritized biologically sensitive areas in conjunction with the existing Biodiversity Assessment done for USAID/Mexico (118/119 analysis that was available at the time), and on likely areas of focus of the new analysis, and in coordination with national and international conservation NGOs. The role of these resources was important, since the AFIRMA team was staffed with finance and economic growth specialists who, while also passionate about biodiversity conservation, required support to guide their efforts.

AFIRMA applied a threats-based approach to conservation on a watershed scale. This perspective called for a broad view of relevant activities, recognizing that an activity in one area of a watershed that is not itself biologically significant may have critical impacts in other biologically significant areas of that watershed or neighboring ecosystems, as in the case of mangroves at the base of a watershed. The initial focus of these activities was local, but over the course of working with local stakeholders and local and national government agencies AFIRMA sought to identify broader policy issues related to biodiversity conservation and economic activities and coordinate with relevant stakeholders to inform policy decision-making. The strategy took into consideration that:

⁴ The so-called “F” process goals coordinated between USAID and the State Department.

- direct threats must be mitigated in order to achieve effective biodiversity conservation;
- addressing all threats is impossible, so threats and actions will be prioritized principally within the framework of AFIRMA's areas of expertise in finance and value chains
- effective interventions require an understanding of the context and root causes of threats
- threat analysis is an iterative process that serves not only to select priorities and set targets, but also requires monitoring over time to inform program adjustments

Prior to initiating activities in a biologically significant area, AFIRMA did further site-specific threats analysis. Site-specific analysis consisted of relevant, recent analyses conducted by reputable NGOs or consultants. Once the threat analysis was complete (or previously indicated in the 118/119) AFIRMA prioritized those identified and defined specific project activities with local public and private stakeholders. Factors considered included:

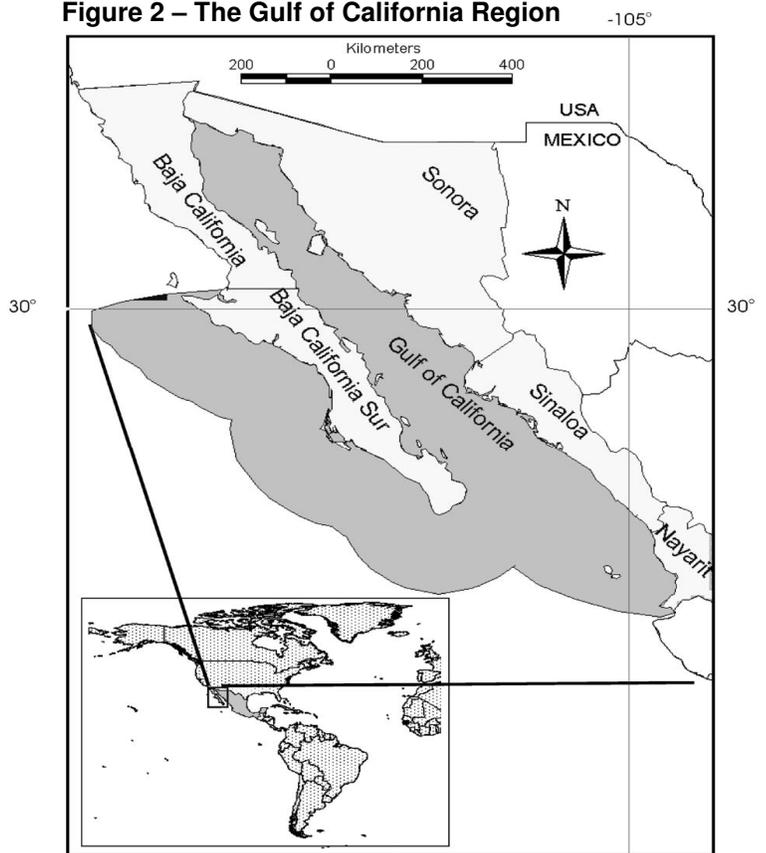
- urgency of addressing the threat
- area affected by the threat
- feasibility of addressing the threat (culturally, politically, economically, etc.)
- timeframe required to adequately develop appropriate activity
- consistency with AFIRMA's scope of work of supporting small rural producers
- level of agreement among stakeholders about the threat

The final criteria cited above related to building consensus among local stakeholders was a particularly important factor both in identifying initiatives and in following up on them. Through participatory processes, AFIRMA consulted with key stakeholders in the target biologically significant areas. These consultations helped the project address issues of importance for local populations in order to increase the likelihood of community ownership and longer term results.

Following the USAID/Mexico biodiversity assessment and in consultation with agencies in the field, in particular with the Protected Areas Commission (CONANP), an agency under the Ministry of Environment (SEMARNAT) and Conservation International, AFIRMA prioritized two types of activity in two biologically significant areas, outlined below.

Marismas Nacionales is a mangrove system that extends for nearly 200,000 hectares between the states of Nayarit and Sinaloa along the Pacific Coast (southern Gulf of California region), a region of extremely high environmental value as an intact mangrove forest as a carbon sink,

Figure 2 – The Gulf of California Region



The Gulf of California Region accounts for approximately 10% of Mexico's GDP, with a population of 8.6 million, and a projection of 10.4 million by 2010. More than 500,000 tons of shrimp, sardine, tuna and squid, among others species, are caught annually, worth more than US \$300 million. Approximately 40% of Mexico's agricultural production comes from the region, mainly from the states of Sonora, Sinaloa and Nayarit.

for migratory birds, as a natural filter for sediment and agricultural runoff, and as an essential breeding ground for fish⁵. The region is soon to be declared a National Protected Area but faces various risks to the mangrove's immense biodiversity, including fishery and aquaculture practices, and intensive agriculture and cattle grazing, as well as generally low incomes of communities within the region. In coordination with CI and CONANP, AFIRMA committed to conduct two separate value chain analyses in the area, one for ecotourism and another for sustainable fisheries.

Further north, in the states of Baja California and Sonora, AFIRMA and its partners prioritized work in the **Upper Gulf of California** (Sea of Cortez), a very different setting from Marismas where desert meets ocean, with different challenges. The most urgent direct threat is well known and has to do with the lucrative gillnet fishery that is contributing to the near extinction of the vaquita marina, a porpoise endemic to the region, of which only 150 remain as of the last count in late 2008. The vaquita is therefore very close to becoming the second marine mammal declared extinct, following the Baiji river dolphin in China in 2007. While the vaquita marina is the *symbol of conservation* in this area, the totoaba (a large marine fish of the drum family) is also at risk, and the area itself, which Jacques Cousteau once referred to as “the world’s aquarium” and “the Galapagos of North America” is among the world’s five most biologically diverse and productive marine ecosystems.

150 Vaquita remain in “the world’s aquarium”



The 150 remaining vaquita marina porpoises endemic to the Upper Gulf of California are an important marine mammal in their own right, and a key indicator of the health of one of the world’s most biologically diverse oceans. Vaquita are rarely seen and very few clear photos of vaquita exist. This photo was taken and provided courtesy of Chris Johnson – earthOcean.

5.2 Prioritize sustainable productive activities relevant to local economies

Given the major challenges mentioned above it was essential for AFIRMA to focus on key aspects of each prioritized challenge where the project had some hope of having a positive impact. Once these threats and areas were selected, AFIRMA worked with local stakeholders, Conservation International, CONANP and other agencies under SEMARNAT, to identify and prioritize productive activities in these two areas. Based on this coordination and on review of literature and data on local economies, AFIRMA focused on **alternative fisheries** and on **ecotourism** as presenting, in different ways, the most promising near term prospects for both conservation and local incomes. Given additional time and resources, another important area to consider, especially in Nayarit and Sinaloa, would have been supporting lower impact agriculture around key mangrove systems.

Analysis of the two selected value chains within the two regions identified would ultimately follow the USAID Microenterprise Office’s emerging approach to value chain development.⁶ However, **AFIRMA’s approach to selection represented a notable exception to this process,**

⁵ New estimates on the value of mangroves for fisheries in Northwestern Mexico suggest they have been consistently and grossly undervalued. See for instance: Octavio Aburto-Oropeza, Exequiel Ezcurra, Gustavo Danemann, Victor Valdez, Jason Murray, and Enric Sala “*Mangroves in the Gulf of California Increase Fishery Yields*”. May 2008.

⁶ As documented through various reports on the USAID Microenterprise Office’s Microlinks website: www.microLINKS.org/valuechains

since it *first* addressed environmental considerations and *then* economic considerations (e.g. competitiveness potential, economic impact potential, other cross-cutting issues, industry leadership). Although environment is sometimes included as a cross-cutting issue in such selections, here environmental considerations, specifically threats to biodiversity, were effectively the first filter because they defined geographically where to begin looking and then whether one or more links along a particular value chain could be strengthened or adjusted to address the identified threats. This is a minor but important adjustment to the USAID value chain approach that may help bring two USAID priority areas of programming into harmony.

5.3 Conduct value chain analysis to understand bottlenecks and opportunities

Other than a modified selection process, the team followed the USAID Microenterprise Office's emerging approach to value chain analysis. AFIRMA conducted analysis of value chains related to the threats to biodiversity in order to identify constraints and opportunities to promote productive activities that mitigate biodiversity threats in these regions. While it is now common for conservation initiatives to examine productive activities that are relevant to conservation goals, the reviews that AFIRMA has seen in Mexico tend to focus on production and often certification of production. These aspects may be essential but are incomplete without an understanding of the full value chain, especially the potential to address **end markets that demand** (or could demand) **the products and services offered** (or that could be offered).

For fisheries and ecotourism the project examined dynamics across the different levels of each chain, from input suppliers, to producers, buyers, brokers, and end markets to understand interaction among actors throughout the chain, governance of the value chain, and important support markets, including finance. Particular focus was placed on opportunities for upgrading and support of public sector initiatives, especially related to conservation-related subsidies for productive activities managed by SEMARNAT. Elements of the project's work included:

- **Options for Alternative Fisheries in the Upper Gulf of California:** AFIRMA analyzed the value chain for sustainable fisheries focusing on the primary threat to vaquita marina, gillnet shrimp fishing, in an effort to promote alternate fisheries activities to those that are harming both of these biologically significant regions. In the Upper Gulf region, the federal government had a number of initiatives to mitigate the risks of traditional gill net fisheries to the endangered vaquita marina porpoise. One of those initiatives supported by the National Fisheries Commission (INAPESCA) and the National Ecology Institute (INE) included the development of new fishing gear that doesn't harm vaquita, and they requested support from AFIRMA to identify end market opportunities for "vaquita safe" shrimp. AFIRMA presented the results of the analysis to representatives of

Many in the protected area want to remain fishermen



High value wild-caught shrimp drive many aspects of the local economy within the Upper Gulf of California marine protected area. The government and conservation NGOs hope that experimental gear can reduce the environmental impact while helping fishers retain their livelihood.

fishing cooperatives and federations and other key actors from the region, including the trilateral (US-Mexico-Canada) Commission for Environmental Cooperation to highlight options. Given the controlling nature of trade credit in this chain, AFIRMA also worked with the US-based non-profit lender Root Capital to help them understand chain dynamics and options to eventually extend credit to fishing cooperatives via factoring arrangements.

- **Support of the GoM buy-out program focused on tourism as an alternative to fishing.** An important part of the GoM strategy to mitigate the threat of extinction of the vaquita marina was a buy-out program that invested in alternative productive activities in exchange for fishermen's equipment, boat, net, and license. Over 80% of these alternative income-generating activities were related to tourism; however the value chain analysis revealed significant challenges in linking those services to tourists. The analysis offered a series of recommendations to address this challenge and in the last months of the project AFIRMA worked with the Natural Protected Areas Commission in charge of the subsidy program to implement a process with local stakeholders to regularly conduct market studies to identify trends in the demand for nature-based tourism in the region, helping develop survey tools, train staff, and establish a survey plan for compiling information at key points during the year. The project also assisted a key local tour operator, NaturArte which promotes nature-based tourism in the region⁷, to develop strategic and business plans to demonstrate a new approach. AFIRMA supported the process by analyzing market trends and ensuring that business plans were intimately linked to the understanding of the market.

Linking nature-based tourism to existing tourism markets



Despite interesting natural attractions in the Upper Gulf of California, important challenges remain to link tourism service providers nature-based tourism markets. Linking nature-based tours to the existing Sun & Beach segment was a prioritized approach. Photo: Ivana Fertziger

5.4 Work with stakeholders throughout the process

AFIRMA presented findings to those involved in the process in a participatory manner and **worked with stakeholders to prioritize their response to the most relevant opportunities and the bottlenecks.** This is good practice but was even more important for AFIRMA given the short timeframe of support.

The project worked to **involve other key actors throughout the process.** This was essential for the Mexican context considering the scale of the environmental challenges, existing stakeholders and efforts in project sites, and the significant resources the Mexican Government

⁷ NaturArte is an initiative of the local Conservation organization The Centro de Estudios del Desierto y Oceano (CEDO). CEDO has used NaturArte to help local communities develop nature-based tourism services that generate economic value and in turn incentivize conservation of local ecosystems. CEDO committed to spinning off NaturArte as a private tour operator that develops market-oriented services with local providers and directly links those services to tourists.

can dedicate. Collaboration with public and private stakeholders was not a step in a linear process, but rather an ongoing aspect of the work. This collaboration resulted in coordinating closely with different agencies of SEMARNAT while also actively seeking to involve FIRA, Mexico's most important source of lending capital for agriculture, fisheries and rural development.

5.5 Common themes encountered

While it is not the purpose of this document to go into specific findings from this analysis, it is worth pointing out a few common themes arising from the analysis and interaction with public and private stakeholders.⁸

- **Significant subsidy programs recognize the need for productive activity to be “part of the solution” to environmental challenges.** AFIRMA worked with designers and implementers of policy to jointly understand how programs might remain flexible (within reason considering necessary administrative controls) to respond to dynamic conditions, both in terms of the biodiversity and in terms of markets.
- **Market trends in environmentally conscious market niches, while generally positive, are simultaneously influenced by other standards that require deep understanding.** There were clear end market trends along these lines both in ecotourism and sustainable seafood, but there were expectations that the market opportunity would be realized largely from improvement and labeling of products and services. A result of this oversimplified view was that the effort required to link to such markets was underestimated. For environmentally conscious market segments, environmental standards are an important element but may not be the most important aspects for the relevant market. For instance in ecotourism, to attract a segment of tourists likely to go on nature-based tours it is necessary, but insufficient, to have good environmental practices to mitigate threats to biodiversity. It is also necessary to meet standards in terms of safety, cleanliness of accommodations, etc, which may be at cross-purposes. In the sustainable seafood niche, it is necessary to use approved gear and practices, but this segment also requires high quality in terms of freshness, health-related procedures, and long-term relationships with providers, among others.
- **A need for deeper connections to end markets.** Across the board, the conservation-led activities had tenuous connections to end markets. In fisheries, for instance, this meant that while organizations involved in conservation had sold the idea of a premium via eco-labeling and selling into “green markets”, this was not backed up with in-depth analysis of actual markets. Eventually AFIRMA focused on such analysis, which was highly valued by local fishermen and conservationists alike. Linkages to attractive end markets require support and development over time. They are far more difficult to establish and nurture, and far more fragile, than one might imagine when designing a program from an office in the capital city.
- **Limited or inaccurate view of the role of financial services and what can happen in their absence.** While finance professionals may tend to see most problems as having financial solutions, non-finance professionals may either overlook financial solutions or, at the other extreme, over-estimate the role that finance, and microfinance in particular, can play in development or conservation.⁹ Although AFIRMA did support a local microfinance institution in the Upper Gulf dedicated to providing services for microenterprises not linked to fisheries, it did so recognizing that microfinance itself was unlikely to have an important impact on

⁸ Full reports are available at: www.dec.org

⁹ Nathanael Bourns, Ivana Fertziger, “Incorporating Finance into Value Chain Analysis, Case Study: Ataulfo Mango Value Chain in Chiapas, Mexico, MicroReport #110”. AFIRMA/DAI, USAID. August 2008. Available at: www.microlinks.org

conservation in the region. In the case of the collaboration with Root Capital, credit actually was a way to address a key future constraint (once subsidy programs are less prevalent) related to control of some fishing cooperatives by certain buyers because they had been the only real source of working capital.

6.0 Project Results in Biodiversity

Because of the participatory and integrated biodiversity conservation and value chain approach, these initiatives have influenced policy makers and implementers alike and offered new tools to address bottlenecks and opportunities at the intersection of biodiversity conservation and productive activity. AFIRMA supported new and/or adjusted approaches to aligning productive activity to conservation goals, ensuring that where markets can support such initiatives, robust market analysis is carried out. The project was able to demonstrate to decision-makers that such analysis is essential for maintaining credibility for the conservation effort which can be lost through overly simplified judgments about end markets. In a fairly short period of involvement, AFIRMA was able to help adjust government support in the Upper Gulf, showing new ways to understand demand within relevant market segments and demonstrate how local stakeholders could put together products and services that meet this demand while also addressing biodiversity threats.

In fisheries, AFIRMA provided new, actionable end market information, established initial links to markets to be tested in the 2009 shrimp season, and demonstrated to stakeholders an approach for understanding and addressing niche end markets. In ecotourism, AFIRMA developed tools and supported local tour operators and other actors to take more systematic approaches to understanding their current and potential markets and to tourism product development. Policy makers and private actors alike have indicated that they will continue with these initiatives.

7.0 Lessons Learned

Some of the lessons mentioned here will be obvious to biodiversity specialists, and others obvious to economic growth specialists, but the AFIRMA experience highlighted a set of non-obvious lessons for one or both of these groups at different stages that the project that were important to take into account when working at the intersection of the disciplines.

- ***Proper sequence of activities is essential in responding directly to biodiversity threats.*** As AFIRMA learned, it is difficult to add a biodiversity component to ongoing initiatives that have already defined partners and approaches. If biodiversity conservation is not a core objective at the start, the activities and partners that are selected may not actually contribute in a manner to meet the criteria necessary for illustrating the desired impact on biodiversity without significant refocusing or outright change. This has cost implications in terms of time, resources, and political capital of a project.
- ***A local focus can bolster broader policy efforts.*** Biodiversity conservation starts with understanding local conditions. However, possible solutions to challenges are likely to involve looking beyond local conditions, towards activities in other parts of a region or watershed that affect local conditions, towards the markets that drive those activities, and towards their policy frameworks. AFIRMA was able to address USAID/Mexico's evolution away from site-specific work towards broader policy-oriented activities by looking at value chains and markets and by supporting and advising agencies under SEMARNAT on policy implementation related to productive activity and biodiversity conservation.

- ***Finance can follow and support, but will not lead, development or conservation.*** Non-finance specialists, or finance specialists who take a narrow view, sometimes assume access to finance, often simplified as credit for a specific activity, can spur that activity. The considerable literature on microfinance suggests that financial services can play a support role for a vast range of activity, but they should not be expected to create economic opportunity where none exists.¹⁰ To look for a strictly *microfinance response* to biodiversity threats, for instance, is likely to miss the mark.
- ***However, finance can play an important role.*** As a corollary to the general rule above, it is important to note that finance *can* often play role in more ways than often understood by non-finance professionals. Bottlenecks in one part of a chain for sustainable products or services may not initially seem to have much to do with finance, but on further inspection, may be very relevant. For instance, access to attractive market niches can be determined by credit conditions that end buyers demand of intermediaries or brokers¹¹, or by logistics. In the Upper Gulf shrimp chain, for instance, logistics in high volume frozen shrimp chain requires that an intermediary have the capital to pull together many tons of shrimp, in order to fill a container and ship the shrimp cost-effectively. Alternative approaches to such a limitation, which is particularly relevant for niche sustainable channels, appears at first glance to be a purely logistical challenge, while credit may well play an important role in a solution.
- ***It is worth the time and effort required at the outset of an initiative to look for potential alignment of incentives across sectors.*** Although it is useful to find alternative activities that do not threaten biodiversity, it is likely more useful to align incentives for those productive activities most likely to change dynamics and turn producers into stewards of the environment. While this can be done at a high level in an abstract way that is logical to conservationists or development professionals (e.g. low impact nets for fishing in protected areas), the initiatives should have concrete courses of action around aligned incentives (e.g. actual buyers that value seafood caught with low impact nets).
- ***Multidisciplinary teams make work at the intersection of conservation and productive activity more effective.*** Biologists, conservationists and environment specialists and organizations are necessary to help define what activities can be done in an ecologically sustainable manner. Enterprise and finance specialists may be better suited to look at relevant markets and their dynamics. While these capacities may be found in a single individual or organization, working at this intersection may more often call for coordination and alliances.

¹⁰ Claudio Gonzalez-Vega gives an excellent overview of this principle in “Deepening Rural Financial Market: Macroeconomic, Policy and Political Dimensions” The Ohio State University, USAID. June 2003. Gonzalez-Vega’s focus is on agriculture, but the principle is entirely relevant for productive activity related to conservation.

¹¹ Bourns and Fertziger, 2008, discuss this in reviewing the Ataulfo Mango value chain with respect to access to supermarket channels (which require 45-60 days credit, while packers often must pay producers much more quickly). Ultimately a lack of working capital ends up limiting markets to which both packers and producers have access.