



Executive Summary

Over the past three years, the Marine Aquarium Council (MAC) has worked with stakeholders and industry operators to develop certification programs at 21 project sites that cover over 400,000 hectares of waters, 50,000 hectares of reefs; and 1,000 hectares of no-take zones. Certified product is being sold every day through key importers in the United States and the United Kingdom, and more than 600 individual collectors and their families, across multiple countries, have been positively impacted. Indeed, communities within these countries better understand their roles and responsibilities in using resource management, sustainable collection methods, and fundamental business skills to protect their coastal resources, while providing for their families in a sustainable manner. Fish species that were on the decline in project sites three years ago are beginning to repopulate. Thought processes are changing in rural village communities and conservation value is being achieved on a daily basis. Completing the work we have started – and positioning that work to achieve even greater results – is important on many levels.

MAC has consistently achieved conservation and economic value at collection sites across Fiji, the Pacific Islands, and within Indonesia. To bring this model to scale requires market traction; as such, MAC is working to improve its standards and certification system to make it more worthwhile and beneficial for importers and exporters to achieve and maintain. To more adequately engage hobbyists, an Approved Retailer Program is being designed to improve the scheme's ability to reach more consumers worldwide, and a product portfolio is being developed containing species identified as highly desirable of hobbyists to be sold under the MAC label as a means of building the MAC brand. For government and other stakeholders, efforts are being redesigned to maximize conservation and economic value on both sides of the value chain through a streamlined approach. From a metrics standpoint, information systems are being refocused to channel streamlined industry data to guide key strategies which will increase the market share of certified product that flow from Fiji, the Solomon Islands, and Indonesia to hobbyists in North America and Europe. When combined together, these initiatives will vastly improve MAC's ability to help foster a transformation of the trade that promotes not only the sustainability of marine aquarium organisms, but of their natural habitats as well.

A new MAC management team, led by a reinvigorated MAC Board of Directors, has begun to revamp its business model and the MAC certification scheme after re-engaging with key stakeholders, including hobbyists, donors, government officials, and industry leaders, to better position MAC certification for success in the marketplace. The process started at the top with a refinement of the organization's core mission, moved through a review of key objectives and priorities, and ultimately brought MAC to a redesign of all products, processes, and protocols. These sweeping changes were driven by the realization that MAC's overarching mission to transform the market for marine ornamentals is something desperately needed within the industry to reduce the use of destructive fishing and handling practices. As a result, the new MAC will be well-positioned to design and implement activities that support sustainability in a consumer-driven manner.

Description of Activities

(1) Strengthen the capacity of communities involved in the marine aquarium fishery to achieve MAC Certification for their collection areas.

Activities and Successes

MAC has built a number of replicable capacity building programs in Southeast Asia and the Pacific Islands which yield consistent conservation and economic results. During the past year, project teams in Fiji, the Solomon Islands, and Indonesia have continued to engage local stakeholders in developing and implementing Collection Area Management Plans (CAMPs) in fishing communities as follows:

- Capacity building efforts to bolster CAMPs were largely concentrated on five sites in Indonesia, with oversight work occurring at another five locations in Fiji and two in the Solomon Islands;
- Work also took place at twelve sites in the Philippines under separate projects sponsored by both the International Finance Corporation and Conservation International;
- Direct and indirect conservation and economic benefit have been achieved at project sites which satisfy the MAC Ecosystem and Fishery Management (EFM) standard; and
- The number of MAC certified organisms channeled to importers in North America and Europe has steadily increased.

From a management plan perspective, project teams have accomplished the following:

- Successfully mainstreamed and integrated CAMPs into broader resource management plans already enacted by the community, creating a sense of ownership at the local level, facilitating buy-in and support within the community to ensure sustainability of activities, even after project teams phase out.
- Recognized the need to involve a range of community stakeholders, such as local governmental representatives, early in the implementation process.
- Conducted the interventions required to ensure that marine ornamental fish collectors and traders gain sufficient knowledge to participate in a sustainable trade that also enhances their livelihoods.
- Continued to focus on mentoring activities to develop necessary skills among the fishers, encourage behavioral changes, and ensure that what was taught in training is consistently applied.
- Focused work on designing sustainable financing mechanisms and developing partnerships between fisher groups and local microfinance institutions to develop cost recovery and savings & loans mechanisms within fisher groups, in partnership with both the Conservation and Community Investment Forum and Pt. Starling Indonesia.

From a scientific perspective, a number of accomplishments have been reached:

- Components have been streamlined to gather and analyze baseline data on a regular basis at all project sites, with best practices taught to key members of each community for long-term planning purposes.
- Annual Total Allowable Catch (TAC) limits have been set at all project sites for 2008 to ensure that scientific activities yield direct and positive results to guide this delicate market transformation process, while continuing to yield direct conservation benefits with repopulating of fish stocks and maintaining the health of these delicate ecosystems.

- Incorporated the establishment of marine protected areas (MPAs) and no-take zones within the CAMP process to lay the foundation for the long-term preservation of coral reef habitats by providing the necessary space for regeneration and repopulation, in partnership with local NGOs, including Reefcheck Indonesia.

During the third quarter of 2007, MAC and the Indonesian government began focusing attention on the trade of the Banggai Cardinalfish, for which a proposal to be listed on CITES¹ was denied. Following the completion of an on-site study in the Banggai islands, it was discovered that stakeholders worldwide are interested in supporting the development of a comprehensive management plan for the region that would be implemented by local NGOs, integrating activities with other broad endeavors taking place within the country. By potentially targeting efforts in Indonesia on this specific, high-profile area and species over the course of the next year, project management believes that the functionality and future success of our revised systems and products can be successfully demonstrated, which will also yield additional levels of funding to support future operations in-country. Proposals are being designed in conjunction with the Nature Conservancy and the Indonesian government to develop comprehensive management plans for marine conservation and restoration of this important global resource.

Overall, the project teams are doing something truly remarkable: changing the mentality in fishing villages on many fronts. MAC and its partners have taught them how to think about fishing and their coastal resources in a long-term manner, instead of just day by day. These successes will continue through the life of the project and others to follow so as to demonstrate transformation of the trade in the long-term.

Challenges and Lessons Learned

Over the past eight years, MAC has accumulated vast experience in working with coastal communities and their local government representatives to:

- Help recognize that the communities themselves must assume responsibility for the sustainable use of their resources;
- Collaboratively create and implement resource management plans; and
- Increase the capacity of the communities to effectively manage and monitor their resource use.

In the past, resource limitations (e.g., lack of skills of government staff, lack of human resources, and, to some extent, limited financial resources) have often been used as excuses for not being able to more effectively manage fisheries resources, particularly marine ornamental fisheries. MAC project teams have attempted to infuse the necessary resources into these communities as a jumpstart measure, to better understand how to install and sustain resource management planning capabilities, in the hopes of reducing the hurdles for other communities to learn and benefit from this initiative in the future.

Because organized management of resources is new to these communities, and new skills are only now being understood and practiced, it takes time for local government and community stakeholders to internalize skills and implement them as ongoing habits. MAC has begun to develop approaches that are simple to understand, easy and cost-effective to apply, and achievable through methods that can be sustained long after project teams phase out their activities. Interventions must be carefully mainstreamed into LGU programs and plans at the earliest possible stage of project implementation to ensure synergy and long range purpose and mission. This challenge is apparent in MAC efforts to

¹ Convention on International Trade in Endangered Species of Wild Fauna and Flora.

implement data management systems capable of collecting and processing catch and shipment data, then analyzing the data against TAC limits by species to ensure reliable catch management. Collector groups and suppliers must be trained on the importance of this practice, with future data collection, entry, and analysis responsibilities eventually shifting from project teams to the local government staff. Through these efforts, MAC project staff will be able to work together with collector communities to better understand the quantitative impacts of sustainable resource management.

The development of a product portfolio, consisting of the species of strongest demand from hobbyists (which includes the Banggai Cardinalfish), will also assist the project teams in focusing data collection and evaluation efforts where they are most necessary as a means to achieve market transformation. To help ensure that reliable, accurate, and useful data can be gathered, a new component of each MAC standard will be added that focuses on data gathering and reporting. Simple figures, such as average total monthly certified products bought or sold, plus average data on the trade of the top ten to twenty species through certified supply and demand chains should be reasonable requests, and will provide management with the baseline information necessary to help increase market share of certified product – while simultaneously decreasing the market share of non-certified product.

From a reef restoration perspective, one of the difficulties in establishing no-take zones is overall MPA enforcement, which remains a challenge for community managers. Equally challenging is the requirement that technical knowledge and skills be passed on to the local MPA managers so that the biophysical conditions of the reefs and sanctuaries can be monitored on a regular basis. Helping local community partners understand the connection of establishing no-take zones and the sustainability of their trade leads to their support in the establishment, enforcement, and protection of marine protected areas. Furthermore, regular monitoring of the biophysical conditions of the reefs is also needed, to assess impact and promote such restoration to the community, to reinforce commitments to sustainable resource management. MPA management, including enforcement and monitoring, of course, entails a number of costs to the village in terms of time, equipment, and materials. Such costs cannot be borne by the community alone; thus, it is important to continue the integration of MPA management activities into the local coastal management program of the municipalities. Only in this way will a system be put into place to ensure the long-term sustainability of programs that will continuously yield considerable conservation benefits.

From a business training perspective, the relationships between fishers, traders, and exporters limit the extent to which community activities can be shifted to formal lending programs and partnerships instead of day-to-day management with moderate peaks and low valleys. Exporters must thus be made aware of proposed microfinance mechanisms and their rationale to provide synergies in efforts related to financial assistance. Participation of the local government as partners has become increasingly more important as well. LGUs have become more willing and able providers of counterpart funds for critical activities that will support the business interventions of the project. Constant building and nurturing of relationships is a key to achieving these milestones.

In addition, methods to ensure the long-term sustainability of MAC project interventions, in terms of changes in behavior at the collector community level, must be investigated and introduced, including the strategic analysis and potential implementation of a fair pricing scheme for collectors, who oftentimes only receive pennies from a fish that is sold in North America to a hobbyist for \$10 to \$15. Linkages must be made between buyers and sellers in supply countries, while demand side awareness is built in parallel. Once market share and stakeholder interest increases, we can begin to develop, test, and implement pricing mechanisms that push economic incentives up the chain to the poverty-stricken regions where the organisms are first collected. We must lay the groundwork for this process by

collecting key data elements and trends (e.g., statistical analysis of consumer willingness to pay for conservation value), so as to ensure that any fair trade scheme is combined with a number of sustainable concepts, including species seasonality, weather patterns, and TAC limits. In this way, pricing models can be practically designed and implemented that directly support the work necessary for sustainable fisheries management under a revised and comprehensive MAC EFM standard.

(2) Strengthen the capacity of marine ornamentals fishers to become MAC Certified for their collection practices.

Activities and Successes

Several key events transpired over the past year to not only increase the number of collectors and traders trained and certified in sustainable collection techniques, but also enhance the capacity of other collector communities to become trained and certified under the MAC Collection, Fishing, and Holding (CFH) standard.

In the Solomon Islands, the project team in Nusa Tupe has helped shape all aspects of collection, husbandry, local transportation, depot handling, record keeping, and shipment. Specific activities include:

- Working with the extension team from WWF and the World Fish Center to educate the villagers in general resource management practices, assist in the development of management plans, and monitor the communities involved in post larval capture and culture. This was carried out through site visits during the collection of products from the culturists, based on orders from the exporter.
- Providing local stakeholders (including communities, fisheries, and project partners) guidance on how to comply with the requirements of the MAC CFH Standard in terms of traceability, holding, transport, record keeping, pre-exporter handling, and packing.
- Help develop Mariculture Area Management Plans (MAMP) for the Titiana and Saeragi communities by performing scoping exercises through weekly visits with farmers and those within the broader communities in which they live. Assessments and certifications under the Mariculture and Aquaculture Standard (MAM) are planned for late 2008/early 2009.

In Indonesia, a number of accomplishments have been reached over the past year:

- Thirty (30) collectors from Pulau Seribu were trained in MAC certification by local NGO partner TERANGI;
- The training of an additional 20 collectors from Pejarakan, Bali, was conducted through support from local NGO partner LEAD Indonesia; and
- A total of 110 collectors from Indonesia were assessed for certification, and upon completing corrective actions, these individuals were certified through December 31, 2009.

Beyond the training and certification of collectors and traders, additional efforts were undertaken by MAC staff and local stakeholders to build the capacity of communities to train themselves in and prepare for certification, extending the impact of the project beyond those directly trained by MAC staff. Such activities included:

- The training of trainers by project staff in Pulau Seribu, to increase the number of those capable of training collectors in MAC certification. During the period, two previously certified collectors

were trained as trainers and used to train other collectors in the area. As a result, trainings have occurred at sites such as Mentawai in West Sumatra and Pangkep and Buton in Sulawesi.

- The engagement by project staff of the local government of Pulau Seribu in achieving MAC certification for its collectors. As a result, the local district Fisheries and Marine Affairs of Pulau Seribu will provide funding for the next round of training for non-certified collectors, with the goal of the government to certify all marine ornamentals collectors in Pulau Seribu.
- Compliance monitoring of collectors already certified in Tejakula and Pejarakan, Bali resulted in surveyors discovering fish population increases, as well as an increase in the number of species, especially in some of the no-take areas in the Tejakula sub-district.

Challenges and Lessons Learned

Over the past three years, MAC has assisted over 460 collectors in becoming certified, as well as providing opportunities for collectors, suppliers, and exporters in Southeast Asia and Pacific island communities to learn new skills and knowledge and gain better access to information concerning sustainable management of their resources. However, the fundamental challenge that persists is that old habits die hard. Sustaining such changes in behavior requires a steady, supportive environment initiated by comprehensive training and mentoring, then fortified by peer-to-peer assistance and organizational development and governance. Key lessons learned include the following:

- Integrating training and mentoring activities with local and national government units is essential to the long term management of collector communities. The Indonesian government has already provided some funding for training activities, including the purchase of netting in Pulau Seribu, Buleleng, Mentawai, and Sulawesi. Furthermore, the Pulau Seribu government facilitated a field trip so that collectors could learn from the experiences of Buleleng certified collectors. Continuing to work in this manner will increase the likelihood of long-term traction at the collector level.
- Encouraging collectors and industry players to take an active role in the training programs as trainers is far more effective and efficient than implementing the trainings using only project staff. The use of the train-the-trainers method at the beginning of the project has yielded fruitful results, with many collectors now able to train others in best practices. However, encouraging trainees to adopt best practices as an ongoing habit remains a major challenge that requires the creation of economic incentives achieved through increased demand for certified product.
- Netting and basic collecting tools, such as masks, snorkels, and fins, remain the supplies that are most needed by collectors, and should be provided as part of the training supplies. Many collectors who were trained by the project had their first experience in using basic snorkeling equipment during MAC training programs. For the past 20 years, they had only used homemade tools and equipment. With even basic snorkeling gear, the collectors are now able to fish efficiently and significantly reduce damage to the coral reefs where they collect.

However, in terms of its effectiveness as a standard, the new MAC management team found it difficult to measure results and achievements under the existing CFH standard for a number of reasons, including the many challenges faced when establishing strong systems of internal control and enforcement. Management now believes that collection, fishing, and holding techniques would better fall under the umbrella of an expanded EFM standard that results in an overall marine resource management plan. This concept was supported by both key stakeholders and the MAC Board. In this way, more flexibility could be given to the community when designing training programs for

collectors, and permit and licensing systems could potentially dovetail with enforcement efforts by LGU officials, where applicable and/or necessary.

As such, MAC, the Board of Directors, and the ISEAL Alliance are working together to merge EFM and CFH into a single comprehensive standard by mid-2008. This effort will result in the creation of a “MAC Certified Sustainably Harvested” product label to be tagged to organisms caught and sold from each certified collection area. In the second half of 2008, a number of key experts will be brought together to steer and manage the revision process as members of the multi-stakeholder Standards and Advisory Committee. Once approved, a refined standard that encompasses both resource management and fishing, collection, and holding can be utilized as a means of simplifying the process, providing for better integration with existing systems and structures at the local community level.

(3) Ensure MAC has sufficient organizational capacity to implement certification, leverage additional resources, and establish partnerships to provide capacity building for communities and collectors and expand the innovative use of technology supporting a sustainable marine aquarium trade.

Activities and Successes

With the formation of a new MAC management team, working in close collaboration with the MAC Board of Directors, it became apparent that a streamlined change in organization for the company was necessary to provide efficiency, transparency, and results-based management. To steer this process, a strategic planning meeting was conducted in mid-2007 by the MAC management team with project partners and all regional teams across all geographic regions, resulting in the following:

- Improvements were made to MAC’s organizational structure to simplify accounting, significantly reduce general and administrative costs, and provides for greater flexibility in the design and management of project and partner-related activities.
- Existing monitoring and evaluation systems, designed and implemented by the previous management team, were redesigned to ensure that strategic decisions and goals could be supported by reliable evidence and project metrics.
- A new “Friends of MAC” Program was designed to replace the original financial business model of industry funding through the application of a product premium placed on each certified organism sold at market. The new program will offer prospective sponsors the option of various levels of support towards both restricted and unrestricted endeavors, ensuring that outside support and donations continue to fund the co-finance portion of this and other projects.

In late 2007, MAC held a Board of Directors meeting in Washington, DC, led by Board Chair Steve Broad (Executive Director, TRAFFIC), VP for Conservation Scott Hajost (Executive Director, IUCN-US), and VP for Industry Chris Buerner (Owner, Quality Marine US). Attendees also included Board Members Svein Fosså and Alex Ploeg, along with the MAC Interim Executive Director and CFO. During the Board meeting, a number of key decisions were agreed to, most of which are discussed in this report, including changes to the certification system, development of a product portfolio, and a clear vote of confidence in the new MAC management team. The Interim Executive Director was offered a one-year contract as Executive Director for 2008, and the formal search for a candidate was postponed indefinitely. Furthermore, a Board Development Committee was established to assist with fundraising efforts.

Challenges and Lessons Learned

While a number of challenges lie ahead for MAC, including generating the necessary revenue to achieve market penetration with certified product, we believe that we have advantageously repositioned the organization for success in its ongoing and future activities. In the past year alone, besides support from the MacArthur Foundation, MAC has received significant resources from the International Finance Corporation, the Packard Foundation, Conservation International, USAID, the New Zealand Agency for International Development, COREMAP, and the ISEAL Alliance.

On the subject of Cyanide Detection Testing (CDT), the Board agreed that the new MAC position should be to support CDT, so long as an internationally credible and viable test could be agreed upon by the industry and the marine conservation community that did not conflict with animal welfare issues. Instead of developing this test outright, as a number of stakeholders have previously suggested, MAC will instead work with the existing efforts of NOAA, USAID, COREMAP, and others to decide exactly what constitutes an effective test. Once such tests are available, the MAC Certification System would include their use as a tool for evaluating operations in the field.

From a conservation standpoint, much has already been achieved with respect to establishing CAMPs for local fishing communities in Southeast Asia and the Pacific Islands. The next step is to translate this into a desired certified product in the marketplace. Senior management has already begun to work aggressively to address the need for trade data, and have made improvements through the implementation of a streamlined, focused approach. In-depth analyses will now be conducted to determine strategies that reduce leakage, maximize the flow of certified product, and increase market share by funneling certified product through working supply and demand chains. In this way, transformation of the trade can be achieved through the introduction of, and industry participation in, voluntary certification systems, standards, and methodologies.