

***IFC TECHNICAL ASSISTANCE (TA) PROJECT***

***PROJECT PROFILE***

***Technical Assistance Trust Fund:***

FEASIBILITY STUDY FOR A  
SUSTAINABLE AQUARIUM FISHING BUSINESS

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**I. COUNTRY**

Indonesia, Philippines, Palau, Kiribati, Fiji, Solomon Islands, Micronesia

**II. SUMMARY OF TA ASSIGNMENT**

This is a feasibility study for an innovative, private sector-led reform of the currently highly destructive ornamental fish trade in Indonesia, the Philippines and other regions in the Western Pacific. The reform is aimed at providing strong economic incentives for fishermen to replace cyanide fishing with far more benign fishing methods. The basic premise is to dramatically increase the economic value of coral reefs to local communities by creating an international distribution channel for more sustainably harvested, high-quality marine ornamentals.

While the project sponsor has spent considerable resources developing the outline of such a business model, considerable additional work remains to be done to develop a commercially viable business plan. This feasibility study will involve the following: (a) Identify 7-10 sites in which relevant government authorities and local communities wish to establish exclusive reef fishing rights and switch to cyanide-free, net-based fishing methods; (b) Develop a scientifically sound sustainable harvesting protocol for each site; (c) Establish a community development plan for each area, including alternative livelihood options for fishermen who are no longer able to continue harvesting once sustainable practices are adopted; and (d) Develop a viable business model, including plans for training, harvesting, transport, marketing, and management, as well as analysis of cash flows and risks. These elements will be incorporated into a detailed business plan.

The feasibility study will evaluate two possible strategies for project implementation. The first strategy is to target those countries with the most destructive fishing practices, i.e. Philippines and Indonesia, and to attempt a supply-oriented reform. The second strategy is to provide, for the first time, a reliable distribution channel for existing sustainable fishing operations in Palau, Kiribati, Fiji, the Solomons, and Micronesia, building strong demand in Japan, U.S., and Europe for a carefully branded “sustainable”

product, and using this demand to lead Indonesia and the Philippines into converting to non-destructive fishing practices.

Once the business plan has been fully developed, this project may present an opportunity for IFC financing. In addition, one of the project sponsors is CoreResources, a San Francisco-based venture capital firm; it is expected that CoreResources will make an equity investment in the project and raise additional private equity funding in the US capital markets.

### **III. SCOPE AND OBJECTIVE OF THE TA PROPOSAL**

#### *Background*

The reefs of the Western Pacific islands constitute one of the world's richest genetic storehouses. With over 2000 species of fish and coral, a biomass of 33 metric tons per acre, and an overall range of over 150,000 square miles, the reefs of Indonesia and Philippines, in particular, represent the habitat from which virtually all tropical fish and coral speciation developed – “ground zero” of marine biodiversity. Unfortunately, the estimated \$200 million aquarium and the \$1 billion live food fish trade is contributing significantly to the destruction of these reefs with rampant overfishing and highly damaging fishing methods – employing sodium cyanide or, even worse, explosives.

The proposed project addresses the aquarium fish trade for the following reasons: First, the aquarium fish trade, despite being smaller, causes a disproportionate share of the destruction. The food fish trade targets small volumes of high-value fish, mostly large predators such as groupers, wrasses and sharks, which are highly dispersed – rarely is a large reef laid to waste in the pursuit of the few resident predators. Aquarium fish, by contrast, are small, highly concentrated, and hide deep in the coral. Using crowbars and cyanide, fishermen often destroy entire reefs for a one-time harvest of ornamental fish.

The Indonesian, Philippine, and Western Pacific reefs are being wiped out for paradoxically small economic gain. Indonesian fishermen collectively net less than \$5 million per year; total exporter revenues is estimated at less than \$50 million per year. And yet, because the destructive fishing practices being encouraged lay to waste such vast reef areas, these small dollar amount threaten the existence of the entire reef ecosystem. In addition, the inefficiencies in the current distribution model account for tremendous costs and fish mortality at every step of the supply chain from reef to hobbyist tank, which furthers the destruction.

The problem of unsustainable reef fish harvesting has been known for some time, and a number of development organizations such as USAID and COREMAP have invested heavily in reform efforts. Programs include training fisherman in sustainable practices, resource mapping and monitoring, captive breeding, etc. While these programs are worthwhile, in order to solve the problem, local fishermen must be able to find their way out of poverty through reef preservation, rather than reef destruction.

The following background information is needed for the evaluation of this proposal:

### 1. Destructive Fishing Practices

Cyanide fishing originated in the Philippines, from where it has spread to Indonesia and the rest of Southeast Asia. At present, much of the aquarium fishing in the Philippines and virtually all the aquarium fishing in Indonesia is based on cyanide techniques. Cyanide is easy to use, effective in its purpose, and virtually free for fishermen who are supplied by middlemen. Fishermen, equipped with a squeeze bottle full of sodium cyanide solution and in some cases a crowbar, descend to reefs up to 150 feet deep using primitive air compressor diving apparatus (“hookahs”). The fishermen then douse the coral in cyanide solution to stun the otherwise elusive reef fish. In some cases, the fisherman use the crowbar to pry coral off the reef to catch hiding fish. Those corals not destroyed by the crowbar tend to die of cyanide poisoning within three weeks. The fishermen do not fare much better. Ignorant of dive tables and the dangers of cyanide, fishermen fall prey to the bends and to poisoning in great numbers.

The effect of cyanide fishing practices and other destructive methods (i.e., blast fishing) is taking its toll on the reefs. Experts estimate that almost half of the reefs in Indonesia and the Philippines have been reduced to rubble. About 35-40% of the reefs are partially damaged, with a realistic chance of recovery, and 10-15% are pristine. Experts in the field have estimated that unless the fundamental economics underlying these destructive reef-fishing practices are changed quickly, most of the region’s remaining reefs will disappear in the next five to ten years.

### 2. The Call for More Sustainable Reef Fishing Practices

The methods of cyanide-free, net-based aquarium fish harvesting are well developed and tested. Different techniques are employed depending on the type of fish, involving barrier nets and hook-and-line techniques. The physical damage caused to the reef is far less than business-as-usual fishing methods. When implemented in a properly managed fashion (i.e., limiting access, focusing to easily regenerated parts of reefs), cyanide-free, net-based fishing methods can dramatically reduce impacts on reefs. In addition, the survival rate increased dramatically, reducing the volume of fish that need to be caught: Exporters who have sold net-caught fish have reported mortality rates of <10% through the chain from reef to retailer – down from 30% to 80% under cyanide-based practices (it has been estimated that 50% of the cyanide exposed marine-aquarium fish die from acute doses on the reef and that up to 80% of the remainder die through the supply chain from collector to retailer from bad handling and the long-term effects of cyanide).

Evidence from the reefs of Australia and Fiji suggest that, under proper management and monitoring plans, reefs can support an appropriate level of harvesting into perpetuity. These management plans generally restrict catch to non-predator species, protect large reef areas completely as “source areas”, restrict catch of long-lived, low volume species, mandate minimum population levels for all harvested species, lay out regular monitoring schedules, etc. A 1999 study by the South Pacific Forum Secretariat for the Marine Aquarium Council suggests that with the proper management and practices, reef resources and habitat can be conserved while their ability to provide for local sustenance, the collection of aquarium organisms, and other benefits is maintained.

That said, much is not yet known about how coral reef fish may be sustainably harvested. Given the lack of scientific data, the best approach at this point is to implement well thought out best practices and to measure the impacts. Waiting five or ten years for the science will doom many of the Western Pacific reefs, especially in Indonesia and the Philippines. The best way to proceed is to develop a baseline “best current practice” coral reef management plan, and subject it to rigorous scientific monitoring and alteration to yield, over time, a truly sustainable set of management principles. The project sponsor is working with the best scientists and organizations in the field, from the IUCN and the World Bank to Reef Check and the Marine Aquarium Council, in order to develop this baseline plan and monitoring protocol.

### 3. Industry Certification

Some argue that the quick and easy solution to the problem would be a ban on the import of all reef products coming into the U.S. or other market countries. This would arguably be easy to implement and enforce, and put an end to almost all shipment of these products coming into the market by legal means. However, the solution is not that simple. The aquarium industry currently supports the livelihood of thousands of collectors and is one of the few options for a sustainable local industry in these regions. Depriving these communities of this essential income could lead to even more destructive subsistence food fishing practices (i.e., blast fishing). Also, banning the trade would promote the black market and illegal trade in these products that is virtually impossible to monitor or regulate.

The answer lies in developing and adopting an industry wide certification program. Efforts to develop such a program are being spearheaded by the Marine Aquarium Council (MAC). MAC is a U.S. based, internationally focused, non-profit organization composed of representatives of the aquarium industry, hobbyists, conservation organizations, government agencies, and public aquariums working on the development of standards through an international consultation process. This is the first step in the procedure to develop an internationally accepted independent, accredited third party certification program. The MAC standards and integrated “best practice” guidance will cover:

- Collection and Fishing Practices: including fish, coral, live rock, and other harvesting and related activities (e.g., field handling and holding practices);
- Ecosystem Management Practices: including in-situ habitat, stock, species management, and conservation;
- Handling and Transport Practices: including holding, husbandry, packing, transport, etc. at wholesale and retail.

MAC’s certification and labeling standards will focus on non-destructive aquarium fish harvest methods that do not undermine the ecological health and stability of coral reefs. They will also include mechanisms to support sustainability (e.g., quotas for the harvest of species) and to evaluate the impact of harvests (e.g., monitoring of populations of target and non-target species, monitoring of habitat condition). Monitoring programs will

include appropriate indicators and thresholds that indicate when unacceptable impact is occurring and will be linked to required management measures.

#### 4. Reef Management Rights

Unfortunately, even if fishermen are compensated fairly for sustainably caught fish, there is still the issue of the “tragedy of the commons”. Fishermen see no reason to attempt to preserve the reefs and resources when others will simply destroy them, drive up competition, and make more money in the process. So, while the industry has to support the fishermen in their efforts to be sustainable, there also needs to be a mechanism in place to provide local fishermen with the management rights to the reefs.

The legal basis for reef rights already exists in the Philippines and in many other Western Pacific nations. Changes to the Local Government Code in 1991 provide Philippine municipal councils exclusive right to license fisheries and other uses of municipal waters and to regulate fishing and mariculture in waters within 15 km from shore. The councils can lease these territorial rights to local fishermen and prevent their use by those outside the community. In Indonesia, territorial reef rights are only just now being pioneered, principally by the pearl oyster industry.

#### 5. Industry Structure

The current aquarium fish trade in the Western Pacific relies on a complicated distribution chain of fishermen/collectors, operators/middlemen, exporters, importers (consolidators, transshippers, and wholesalers), and retailers. Typically, there are at least five middlemen between the fisherman and the aquarium hobbyist, with average mark-ups of 100%. The value added of middlemen varies widely: local purchasers often supply boats, equipment, and emergency loans to fishermen, others provide extensive support in transportation logistics and fish handling, while some are entirely transactional and add very little value. Overall, however, none of the supply chains are currently integrated and coordinated, leading to significant inefficiencies, unnecessary mark-ups, and fish handling mistakes. By restructuring this industry chain, it is possible to dramatically increase the value of the fish (and thereby the reef) to local fishermen.

U.S. markets are dominated by a small number of large importers (the four largest account for over 50% of total imports), and a large number of small transshippers serving specialty markets and channels. This is highly skilled business requiring extensive knowledge and experience in the husbandry of large number of exotic species, many of which have very specialized survival requirements. To establish an alternative distribution channel, it will be necessary to establish a partnership with one of the current importers. The project sponsor has identified a U.S. importer (Sea Dwelling Creatures in Los Angeles, California) that is interested in participating in this project and has entered into a formal Memorandum of Understanding to implement this project.

## 6. Economics

The current system of industry economics promotes reef destruction. For example: a cyanide fisherman sells as many fish as possible, through a middleman, to an exporter. Prices that fishermen receive for common species range from 10 cents to \$2.50 per fish (the same fish cost from \$4 to \$40 in a U.S. pet shop). The exporter watches up to 70% of the fish die from the long-term effect of cyanide and poor handling. In order to satisfy demand, the exporter orders more fish. However, due to the high mortality rates, the exporter is willing to pay less. Since the fishermen is being paid less per fish, he increases the cyanide concentration in his squeeze bottle to catch more fish. The mortality rates of the fish increase. And so on, the cycle continues: many exporters today are experiencing mortality levels of over 80%.

Re-training fishermen, by itself, does not work; the underlying economic incentive system has to also be changed to compensate the fishermen for quality (i.e., net-caught, carefully handled, low-mortality) rather than quantity (i.e., cyanide caught) fish. Currently, the industry does not reward these fishermen; sustainably caught fish are marketed along with cyanide-caught fish, making it impossible to reap the economic value of improved mortality. In many cases fishermen once living in the edge of poverty, actually find themselves in worse shape after they switch to sustainable fishing practices. In those instances where fishermen have attempted sustainable fishing methods, they often “backslide” into cyanide use.

Under the current industry model, each player sees it in their economic interest to catch as many fish as possible and to funnel them en masse to market, even though this practice is unsustainable. Middlemen threaten the sustainability of the industry by promoting over-harvesting and destructive fishing practices (indeed supplying cyanide to the fishermen in many cases); they also worsen mortality rates downstream in the supply chain by disregarding proper husbandry practices. What is needed is a "chain of custody" approach in order to align each player's incentives with the sustainable use of reefs. This type of approach could reduce costs by eliminating steps in the distribution channel which do not add much value. These savings could be passed on to fishermen who are willing to adhere to sustainable fishing protocols.

### Investment Project

The investment project would be sponsored by CoreResources, a San Francisco-based venture capital firm. CoreResources will establish a new corporate entity to implement its business plan. This corporation will be a partnership of CoreResources with an existing, highly experienced marine ornamentals importer, the local entities providing training, reef monitoring, and integrated transportation logistics, and the local reef harvesting companies working under exclusive terms.

The project sponsor has already identified a U.S. importer (Sea Dwelling Creatures in Los Angeles, California) that is interested in participating in this project and has entered into a formal Memorandum of Understanding. In country exporters (such as AMRI in Manila) and other local entities will be identified in the course of the feasibility study as the detailed economics are developed.

The type and extent of the investment will depend on the findings of the feasibility study. However, it is possible that the project will present a sufficient risk/return profile and size (approx. \$2-5 million in total project costs) to qualify for IFC financing. In addition, it is anticipated that a number of the project's components (e.g., training, monitoring, alternative livelihoods, etc) will be eligible for support through the Global Environment Facility (to be allocated to the project sponsor as loans, grants, or contingent financing depending on the risk/return profile of each particular activity). Finally, it is expected that CoreResources will raise capital funds among its investors for those components of the business model not applicable for IFC/GEF funding, such as the import and distribution facilities in the U.S.

*Objective of the TA Assignment:*

This objective of this specific TA assignment is the development of a business plan which will provide a way for the fishermen, sustainably collecting fish from a managed reef, to sell these fish into a highly efficient, fully certified distribution channel that systematically provides them with a steady and respectable income stream. Development of the business plan will require completion of the following major tasks:

1. Select pilot sites for initial rollout. Approximately 7-10 sites will be selected in which relevant government authorities and local communities wish to establish and enforce exclusive reef fishing rights and switch to cyanide-free, net-based fishing methods. A detailed set of criteria will be established in working with fisheries management and community development experts to ensure proper selection.
2. Develop site-specific, scientifically sound sustainable harvest protocols. Using the general MAC standards and guidelines, a reef fishing "best practice" protocol has to be developed for each site, specifying the fish species to be harvested, the yields for each species, etc. Specifically, the consultant team will follow the following approach:
  - Conduct a literature review that:
    - Compiles a target species list
    - Reviews the distribution, relative abundance, and habitat preferences of both harem and monogamous, and other target species
    - Reviews the harvest data for each species in each type from various localities
    - Reviews available impact data for each species in each type
    - Collates data and sets out species specific criteria for in field surveys
  - Design a field methodology for assessing population data for target species and overall community structure for specific sites at the designated pilot locations, including:
    - Standardized survey methods
    - Data treatment and analysis
    - Relationship to species specific criteria
    - Interpretation

- Setting levels of sustainability
- Specify personnel for field baseline assessment
- Conduct a peer review of proposed harvest methodologies to evaluate the methodologies and provide written comments via email or other delivery method

In addition, the consultant team will have to establish an on-going protocol for monitoring of fish populations and reef health. This will include:

- Specifying the resurvey methods (these will be identical to those methods used in the initial and post-harvest surveys)
  - Specifying the appropriate monitoring time frame
  - Specifying data treatment and analysis (again, identical to those methods used in the initial and post-harvest surveys)
  - Setting up a general plan for interpreting the data to evaluate the effects of harvests upon population and community structure.
  - Conducting a peer review of proposed harvest methodologies to:
    - Evaluate the methodologies via email or other delivery method.
    - Provide written comments via email or other delivery method.
  - Identifying a time frame for implementation of field study, etc.
3. Develop community development plans. The business strategy has to be built on an operational model which fully respects the complexities and particularities of local culture and enterprise, including:
- The existing system of material and spiritual obligations and liabilities (e.g., role of middlemen, fishermen debt, tribal and familial loyalties, etc.).
  - Potentially disruptive or unintended consequences of economic success (e.g., introduction of cash into a largely cashless society, creation of new economic leadership class, economic challenges to established leadership, etc.).
  - Local systems of taxation and natural resource ownership laws (e.g., fishing rights, land and maritime leases, formal and de facto monopolies, etc.).
  - The current political and economic leadership structure.

In addition, the consultant team will have to evaluate alternative livelihoods for fishermen who are no longer able to continue harvesting once sustainable practices are adopted. Without a well-developed alternative employment plan, the issue of overfishing in some areas can not be solved.

4. Develop a profitable business model. At the heart of the business model lies an integrated set of collection, transportation, and distribution logistics, including:
- Collection Training
  - Ordering infrastructure

- Handling practices
- Collection hubs
- Import and consolidation facilities

Within the constraints and opportunities of the sustainable harvest protocol and community development models, a business model will need to be established which provides sustainable and attractive returns. This will include all detailed, fully supported income statements, balance sheets, and cash flow projections. This model will reflect:

- The detailed logistics of standardized fish harvesting, handling, and transportation, including associated capital requirements
- A fully developed value chain, including segment ownership and economics
- The required plant and equipment, both on location and in the U.S
- Product volumes, mix, and pricing, as dictated by harvest protocols and market demand
- The operating expense structure
- The ownership structure
- The management team
- Required partnerships in the U.S. and the Western Pacific, including partnership structures.

#### **IV. OUPUTS/DELIVERABLES OF THE CONSULTANT**

The result of the feasibility study will be a fully investable, detailed business plan. This plan will include the result of the analyses laid out above. In addition, the business plan will include detailed information on staffing, investment schedule and instruments, and investment risk. This business plan can then be presented to IFC and other potential investors.

#### **V. ESTIMATED TIMETABLE**

It is estimated that the feasibility study will be completed over a four-month period. The specific components are expected to be completed according to the following timetable:

Contract Signed:	March, 2001
Field Work:	March, 2001
Analysis of field work/ additional research:	April/May 2001
Submission of Final Report:	June, 2001
Final Disbursement Completion:	June, 2001

#### **VI. IFC ROLE AND DEVELOPMENT IMPACT**

The ultimate goal of this investment project is to preserve the marine diversity of Indonesia, the Philippines, and the Western Pacific by shifting the highly destructive live

reef fishing industry towards more benign practices. Although the project will start on a relatively limited basis, if successful, it will constitute the beginning of a major market transformation process – the ultimate objective of which is to ensure that all coral reef fish exported to the United States and elsewhere are certified as “sustainably” harvested. The project therefore offers considerable environmental benefits. In addition, the project offers significant social and economic benefits by allowing fishermen to earn higher incomes through sustainable harvesting methods.

A private sector, for-profit project – with IFC participation – is necessary to catalyze a shift towards sustainable reef fishing methods in the aquarium industry. An exclusively NGO-led reform is not likely to succeed because it would fail to establish a compelling precedent of how reef preservation could, in fact, be achieved at economics far superior to those of reef destruction. In addition to providing this precedent, the proposed project has generated considerable interest from a wide range of stakeholders because a real world “laboratory” to try out various fisheries management and certification approaches is desperately needed by scientists, industry groups, and NGOs alike.

IFC may play a crucial role in the eventual implementation of the business plan as a potential investor. IFC’s participation as lead investor would greatly facilitate the syndication of the investment opportunity in the private equity markets. In addition, its contribution in mitigating political risk in the more difficult investment environments will be important.

## **VII. ESTIMATED PROJECT COST AND FUNDING REQUEST**

The total cost of the feasibility study is estimated at \$189,550. The project sponsor has approached the Packard Foundation to co-fund this proposal; the application has been submitted and initial interest is strong. In addition, the project sponsor is pursuing co-financing from the Global Environment Facility (GEF); initial consultations have indicated potential GEF interest in funding the development of sustainable fishing protocols, reef monitoring, and development of alternative livelihoods projects. Further, it is expected that the Packard Foundation will support this effort, specifically the development of local community development strategies. Although the specific amounts to be expected from these sources is uncertain, it is expected that the project sponsor will be able to raise \$89,550 from the Packard Foundation, GEF, and its own internal resources. Thus, funding in the amount of \$100,000 is sought from the Japanese Trust Fund.

In conducting the feasibility study, the project sponsor will not reinvent the wheel. Instead, the sponsor will employ top experts in the field to rapidly get up to speed in key areas (see below). The sponsor’s traveling teams will include scientific, community development, and business experts to ensure that multiple visits will be unnecessary (for purposes of budget analysis, travel costs have been allocated to tasks below; however, this does not indicate multiple visits). Through its partners, the sponsors will have multiple introductions at each location and will be able to work efficiently. All travel is based on economy class fares and reasonably priced accommodations.

Budget (in US\$)

<b>Issue</b>	<b>Task</b>	<b>Total</b>
<i>1. Pilot sites for initial role out</i>		
	Prep for field work: total consultant time	5,000.00
	Prep for field work: expenses	500.00
	Field work: total consultant time	14,500.00
	Field work: expenses	5,000.00
	Write-up/Follow-up: total consultant time	8,500.00
	Write-up/Follow-up: expenses	1,000.00
	<b>TOTAL ISSUE 1:</b>	<b>34,500.00</b>
<i>2. Scientifically sound sustainable harvest &amp; monitoring protocols</i>		
	Prep for field work: total consultant time	16,150.00
	Prep for field work: expenses	500.00
	Field work: total consultant time	22,000.00
	Field work: expenses	5,000.00
	Write-up/Follow-up: total consultant time	17,500.00
	Write-up/Follow-up: expenses	500.00
	<b>TOTAL ISSUE 2:</b>	<b>61,650.00</b>
<i>3. Community development plans</i>		
	Prep for field work: total consultant time	11,000.00
	Prep for field work: expenses	250.00
	Field work: total consultant time	23,500.00
	Field work: expenses	10,000.00
	Write-up/Follow-up: total consultant time	11,200.00
	Write-up/Follow-up: expenses	250.00
	<b>TOTAL ISSUE 3:</b>	<b>56,200.00</b>
<i>4. Profitable business model</i>		
	Prep for field work: total consultant time	6,200.00
	Prep for field work: expenses	250.00
	Field work: total consultant time	12,500.00
	Field work: expenses	10,000.00
	Write-up/Follow-up: total consultant time	8,000.00
	Write-up/Follow-up: expenses	250.00
	<b>TOTAL ISSUE 4:</b>	<b>37,200.00</b>
	<b>GRAND TOTAL:</b>	<b>189,550.00</b>

## VIII. NOMINATED CONSULTANTS

CoreResources is a small, San Francisco-based venture capital firm which specializes in opportunities with strong environmental value propositions. CoreResources invests about \$5-7 million per year, primarily in early-stage equity deals. The company's principals have extensive business related background and work intensively with the management teams of their portfolio companies. For the purposes of this study, CoreResources has partnered with California Environmental Associates (CEA) because of the CEA's strong expertise in program design and natural resource planning. Established in 1984, CEA provides program design and planning services to a variety of business, governmental and non-for-profit clients. The firm has extensive experience in market-based solutions design, having worked on issues such as:

- Design of a sustainable forestry fund in the Pacific Northwest
- Design of a Chinese-American joint equity company providing world-class environmental services to the Chinese water and solid waste markets
- Design of a environmental venture capital fund for the redevelopment of the old Stapleton airport into a environmental technology center
- Design of risk-based corrective action approaches to remediation of oil contamination in Nigeria

CoreResources will principally focus on development of the business model and logistics, while CEA will focus on the design of fisheries management and monitoring plans, community development, and site selection. As stated above, CoreResources has entered into a formal Memorandum of Understanding with a local importer (Sea Dwelling Creatures in Los Angeles, California) to implement this project.

## IX. BENEFITS TO JAPAN

- Japan leads the world in per-capita consumption of marine ornamentals. Without direct intervention, the sources of high-quality fish and corals are likely to diminish significantly over the next five to ten years.
- Access to up-to-date information on fisheries sector developments, reforms and related business opportunities in Indonesian, the Philippines, and other Western Pacific nations; and
- Potential involvement of Japanese fisheries experts in the establishment and monitoring of collecting stations.

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PROJECT OFFICER: To be designated within the IFC Trust Fund Dept.

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