

Integrated Approach Impacts Human and Ecosystem Health in Coastal Philippines

by Joan Castro and Leona D'Agnese

The Philippines coastal zone is particularly susceptible to environmental problems as it accommodates 62 percent of the country's population. Not only are coastal areas more densely populated (ADB 2004), their populations are expanding at a rate exceeding the national average - already one of the highest in the world (World Bank, 2005). This escalates the demand for coastal resources, driving increased use of extraction technologies that are more intensive and destructive to the marine environment (Pauly, 1990). Open access to fisheries has also encouraged over-extraction and rampant destruction of coastal habitats, hastening reductions in productivity and fish catch rates (Luna et al 2004). The biggest factor in declining fish catch, however, is excessive fishing effort caused by human population growth (Cruz-Trinidad et al, 2002).

The Philippine government recognizes the looming crisis posed by declining fish stocks and burgeoning population: "If current trends in population growth and coastal resource exploitation continue, the availability and affordability of fish to provide a crucial protein source will be lost" (DENR et al., 1999). In response to the government's call for action, several organizations have established marine protected areas or are promoting improved fisheries management or sustainable aquaculture ventures. Despite these efforts, the annual marine fisheries harvest has stagnated at the

1995 level while eight million more consumers have been added to the Philippines population (Figure 1). If appropriate action is not taken to redress this situation, experts project that only 10 kg of fish will be available annually for each Filipino by 2010 with food insecurity disproportionately affecting low income families (Green et al: 2003).

In response to this looming crisis, a new approach to conservation seeks to save families along with the fish and their habitats. The Integrated Population and Coastal Resource Management (IPOPCORM) project is working to improve life in communities dependent on

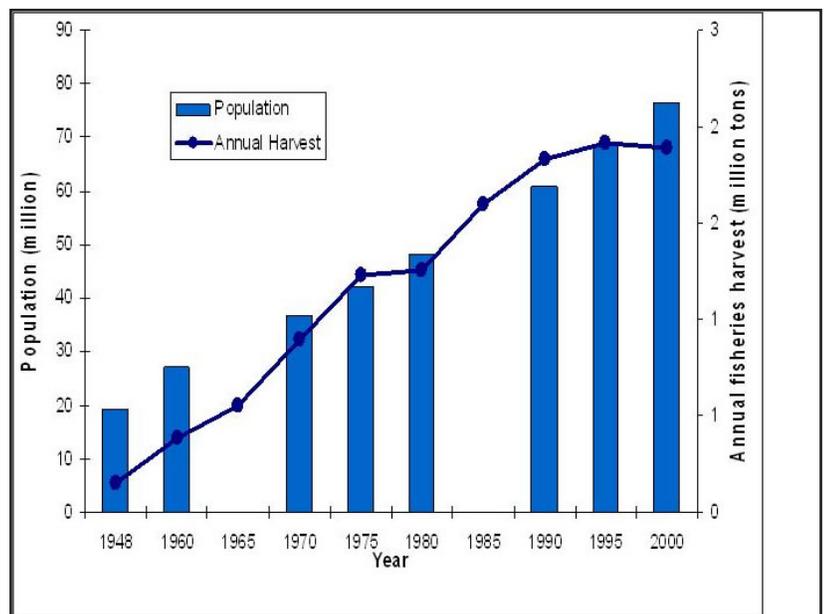


Figure 1. Annual trend of Philippine marine fisheries harvest & human population. (Source: N Armada, 2007)

the sea for their livelihoods while conserving biodiversity in high-priority marine corridors. By integrating the delivery of family planning and conservation services, IPOPCORM has found that it can improve reproductive health and coastal resource management more than programs focusing exclusively on reproductive health or environment—and at a lower total cost.



Integrating Population and Environment in the Field

Launched by PATH Foundation Philippines Inc. (PFPI) in 2001, the Integrated Population and Coastal Resource Management (IPOPCORM) Initiative is helping community-based organizations and local government units to implement reproductive health and family planning activities in tandem with coastal conservation and alternative livelihood strategies. Twelve NGOs are currently working with PFPI and 33 municipal governments to deliver IPOPCORM interventions to 356,461 people in 183 coastal barangays (villages) located in eight marine biodiversity conservation corridors (PFPI: 2007a).

Successful Across Sectors: Program Accomplishments

Environment: IPOPCORM and its partners have established or strengthened 88 marine sanctuaries and other stewardship arrangements to protect and conserve coral reefs, sea grass beds, mangrove stands, and wildlife populations. To ensure the long-term protection of these areas, local government partners enacted 97 regulatory measures over the past six years, and empowered 79 community-based resource management groups and 129 fisheries and aquatic resource management councils. More than 1,050 community volunteers were trained and deputized as fish/forest wardens, and several of them also serve as family planning educators (PFPI : 2007b).

Reproductive Health: IPOPCORM's experience demonstrates that NGOs with environmental missions can quickly develop the capacity to facilitate and manage basic family planning services, given appropriate training and technical and commodities support. Access to family planning in areas served by IPOPCORM has increased 13-fold since 2001, and more than 18,000 couples now regularly obtain their

supplies from a network of community-based distributors trained under the program (PFPI: 2007a).

Alternative Livelihood: To reduce overfishing, the program extends micro-credit to coastal dwellers to finance alternative livelihoods such as beekeeping, food processing, seaweed cultivation, eco-tourism, and potable water supply schemes. More than 1,860 households have received start-up loans averaging 6,000 pesos (US\$120) per family and 95 percent of these families have repaid their loans (PFPI : 2007b). Program monitoring data show a per capita increase in the income of women and fishers at IPOPCORM sites and illustrate the poverty-reduction potential of the approach (Montebon et al: 2004).

Integration: Ten municipal governments have formally integrated reproductive health into their medium-term environmental management plans—the first step toward institutionalizing the integrated approach—and 146 barangay councils have done the same in their annual development plans. In addition, the integrated approach helps bridge gender barriers in the community by increasing women's involvement in governance and conservation activities and access to micro-credit (Magbanua et al: 2007).

Bigger Bang for Each Buck: Operational Results

IPOPCORM also conducted operations research to test the project's central hypothesis that integrated approaches yield a bigger payoff than single-sector strategies. The study, which applied a quasi-experimental design, was implemented in Northern Palawan in the aftermath of a coral bleaching event and typhoon that struck the area in 1998. At one study site, coastal resource management (CRM) interventions were implemented in isolation while at a second site, Reproductive Health (RH)



Impact on Selected Indicators (2001-2007) (statistically significant trends only)

	INTERVENTION		
	IPOPCORM	RH-ONLY	CRM-ONLY
RH AND FOOD SECURITY INDICATORS			
Contraceptive use during first sexual experience	●		
Proportion of young (15-24) males that are sexually active	●		
Proportion of households solely dependent on fishing	●		
Use of dynamite in fishing	●		
Use of cyanide in fishing	●		
CRM INDICATORS			
Coral reef: condition index	●		
Reef fish: target species richness			●
Reef fish density (# per sq. meter)		●	
Mangrove volume (cu. meter per hectare)	●	●	●
Mangrove density (# per hectare)		●	●
Mangrove mean diameter at breast height (cm)	●		
Mangrove regeneration (# per hectare)	●		●

● Trend in desired direction ● Trend in undesired direction

Figure 2. Comparison of the impact of the IPOPCORM program on CRM and RH indicators as compared to the two sectoral approaches.

interventions were applied alone. In a third site, both CRM and RH interventions were implemented in an integrated fashion.

The results of this six-year study show that IPOPCORM had a significantly higher impact on both CRM and RH indicators compared to the two sectoral approaches (Figure 2). Improvements in coral reefs and mangroves at the IPOPCORM site are attributed to the establishment of a marine protected area (MPA) and a mangrove reserve in the study area and the vigilant enforcement efforts of local People’s Organizations, which the project mobilized and empowered. By providing stewardship opportunities, Peoples Organizations helped to change the attitude of the community towards management and conservation of coastal resources (MERF 2007).

Similarly, the higher impact that IPOPCORM generated on reproductive health

outcomes is ascribed to the program’s communication strategy which encourages villagers to concurrently protect their coastal resources and plan their families in order to assure food security for the entire community and for future generations (Magbanua et al: 2007). Although IPOPCORM cost more to implement than either of the non-integrated approaches, the combined cost of fielding the two sectoral interventions was greater than the cost of the IPOPCORM intervention. These results strongly suggest that the integrated approach yields a larger impact on human and ecosystem health compared to sectoral strategies, and at lower cost (D’Agnes et al., 2008). The study also points to the approach’s potential for increasing resilience and ability of coastal ecosystems and communities to cope with future climate change.



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About The Authors

Joan Castro and Leona D'Agnes work for PATH Foundation Philippines Inc. (PFPI), a nonprofit, non-stock corporation dedicated to improving health and environmentally sustainable development in the Philippines. Castro oversees the management and implementation of the project while D'Agnes provides technical direction and strategic planning support.

Corresponding Author:

Joan Castro
PATH Foundation Philippines, Inc.
154 H.V. dela Costa Street
1227 Makati City
Metro Manila, Philippines
Tel: +632 817 5049
Fax: +632 893 5360
Email: jcastro@pfpi.org

<http://www.pfpi.org/PDF/ICM%20Matters.pdf>

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