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SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP) STUDY TOUR TO THE PHILIPPINES



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 **SSG ADVISORS**
Catalyzing Development Through Partnership

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Cover photo: Study tour participants board a fishing boat in the Philippines. (CREDIT: SSG Advisors)

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ACRONYMS

BCRMF	The Batangas Coastal Resources Management Foundation
BERT	Batangas Environment Response Team
BFAR	Bureau of Fisheries and Aquatic Resources
DSWD	Department of Social Welfare and Development
ECOFISH	Ecosystems Improved for Sustainable Fisheries
FC	Fisheries Commission
FEU	Fisheries Enforcement Unit
GCLME	Guinea Current Large Marine Ecosystem
ICT	Information Communications Technology
IUU	Illegal Unreported Unregulated
LGUs	Local Government Units
MCS	Monitoring, Control and Surveillance
MOFAD	Ministry of Fisheries and Aquaculture Development
MPA	Marine Protected Area
NFRDI	National Fisheries Research and Development Institute
NGO	Non-Governmental Organization
PG-ENRO	Provincial Government Environment and Natural Resources Office
PNP-MG	Philippine National Police-Maritime Group
PPP	Public-Private Partnerships
SCS-SFMP	Sulu-Celebes Sea Sustainable Fisheries Management Project
SFMP	Sustainable Fisheries Management Project
SSG	SSG Advisors
USAID	United States Agency for International Development
VIP-MKBA	Verde Island Passage-Marine Key Biodiversity Area
WARFP	West Africa Regional Fisheries Development Program

TABLE OF CONTENTS

Acronymsiv

List of Participantsvi

Background on Study Tour Leader1

Acknowledgements.....1

Executive Summary.....1

Study Tour Day 1.....5

Study Tour Day 2.....10

Study Tour Day 3.....16

Study Tour Day 4.....18

Study Tour Day 5.....21

Study Tour Day 6.....24

Concluding Remarks and Next Steps29

Annex A: Study Tour Agenda31

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BACKGROUND ON STUDY TOUR LEADER

Mr. Romy Trono has more than 30 years of leadership as well as management and technical experience in biodiversity conservation in the Philippines. In his capacity as former Country Director of two of the largest NGOs in the Philippines (WWF and Conservation International) he has conceptualized, fund-raised, managed, and completed over 100 projects and initiatives in both terrestrial and marine ecosystems on threatened species conservation, fisheries management, protected areas, biodiversity corridors, and large scale conservation for hotspots, ecoregions, and seascapes. He recently completed his term as the Regional Project Manager of the Sulu-Celebes Sea Sustainable Fisheries Management Project (SCS-SFMP). He is the Sustainable Fisheries Consultant of SSG Advisors for Ghana SFMP.

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EXECUTIVE SUMMARY

Background and Tour Objectives

The USAID/Ghana Sustainable Fisheries Management Project (SFMP) works closely with the Government of Ghana and diverse fisheries stakeholders to safeguard local food security by protecting and rebuilding Ghana's small pelagic fish stocks. In Year 1 of the project, SFMP asked project partner SSG Advisors to organize and facilitate a high-level study tour to the Philippines for 20 key stakeholders from the Ghanaian fisheries sector. The Philippines is an island nation made up of over 7,000 islands; it is one of the major fish producing countries in the world and home to fantastic marine biodiversity. In recent years—facing declines in critical fish stocks linked to overfishing and destructive illegal fishing practices—the Philippines has experimented with a number of bold fisheries management interventions, to guard and rebuild its fisheries. The USAID/Philippines ECOFISH project—for which SSG is also a project partner—has supported a number of these interventions around the country.

During the six-day visit, from May 25-30, 2015, study tour participants engaged with the Philippine Bureau of Fisheries and Aquatic Resources (BFAR), the National Fisheries Research and Development Institute (NFRDI), local government units (LGUs) in the Province of Batangas, community fisherfolk associations, USAID ECOFISH staff, volunteer community patrol associations (“*Bantay Dagat*”), local marine police, leaders of international conservation NGOs, and representatives of commercial fishing companies. Through these discussions and interactions, participants learned about the Philippines’ experience with seasonal closures for targeted fisheries, community-level enforcement to tackle illegal fishing, and public-private partnerships—including innovative technology partnerships—for sustainable fisheries management.

Study tour participants included representatives of the Fisheries Commission and the Ministry of Fisheries and Aquaculture Development in Ghana, a fisherman and two chief fishermen, women fish processors, members of the Marine Police and the Fisheries Enforcement Unit, SFMP staff, and a leader of the Fisheries Alliance. Through this study tour, Ghana SFMP sought to bring these diverse fisheries stakeholders together, spark needed dialogue, introduce new ideas, and start to create a shared foundation for action. The hope is that the participants return to Ghana motivated to take action and apply new ideas and lessons learned from the study tour to the Ghanaian context.

Key Points and Lessons Learned

Over the course of the study tour, several themes and key lessons emerged:

Closed Seasons for Rebuilding Key Fisheries

A significant topic of discussion in the first days of the study tour was the use of seasonal closures to rebuild fish stocks. In the Philippines, seasonal closures range from a few weeks to a few months – timed to overlap with the critical spawning period of target fisheries. During a

Scientific studies and regular monitoring are crucial to formulating and enforcing policies for a seasonal closure, setting the closure period and boundaries, and documenting the environmental and socioeconomic impacts of the closure. The following studies were conducted for the seasonal closure in Zamboanga Peninsula:

- Population genetics for target fish species
- Spawning periods for target fish species
- Changes in the number of spawners over time
- Changes in average length of spawners
- Changes in average length of immature sardines
- Changes in size of sardine eggs relative to body size of spawners
- Growth rates of target species
- Changes in volume of catch following a seasonal closure
- Spill-over effects of a seasonal closure
- Socio-economic benefits and impacts of a seasonal closure

seasonal closure, no catch of the target species is allowed and use of select gear types is prohibited.

Effective execution and enforcement of seasonal closures can result in an immediate increase in fish catch. The positive impact of a three-month closure for sardine fisheries in Zamboanga Peninsula in 2011 was already clearly visible in 2013, with a 30% increase in catch (an absolute increase of 20,000 metric tons) recorded in comparison to 2012. Zamboanga Peninsula also posted the fastest economic growth in the country in 2012 based on the annual report of the National Statistical Coordination Board. Its growth is attributed to the significant increase in canned sardine production. Moreover, there were visible spill-over effects in neighboring regions – Palawan, Davao, and Tawi-Tawi all reported increased catch of sardines. The Zamboanga closure is already being replicated in Davao Gulf, Visayan Sea, and Palawan.

The effective implementation and enforcement of seasonal closures require:

- Legislation and policy backed by sound science. A combination of science and politics will determine the boundaries, time period, and species selection for the closure.
- A lengthy, in-depth, and broad stakeholder consultation process to secure buy-in, compliance, and active participation from all stakeholders. In Zamboanga, this process took six years before the closure was enacted.
- Regular and high-visibility enforcement patrols and clear protocols for enforcement.
- Massive information and education campaign using all available forms of media (e.g., TV, radio, print) prior to and during the closure period.

Cash for Work and Alternative Livelihoods

A seasonal closure or other strict fisheries management interventions can pose serious burdens on the fishermen and fish processors who depend on access to local waters. For these interventions to be sustainable and socially acceptable, these impacts must be addressed to the greatest extent possible. During the Balayan Bay seasonal closure in Batangas, the Department of Social Welfare and Development (DSWD) launched a Cash for Work program for over a thousand affected fishermen. This innovative program proved to be a key success factor for the closed season. Ideally, Cash for Work activities would support alternative livelihoods linked to fisheries management.

That said, the need for more suitable, locally acceptable, and profitable alternative livelihoods for coastal communities remains a key fisheries management challenge for both Ghana and the Philippines. This is a key area for experimentation and effort going forward.

Working with Diverse Stakeholders to Improve Fisheries Management

The Philippine experience has shown that broad, genuine, and oftentimes lengthy consultations and conflict resolution are essential to securing buy-in from diverse fisheries stakeholders (e.g., fisherfolk, the private sector, government, enforcement agencies, NGOs, academia and scientists, donors, etc.). By taking stakeholder engagement seriously, the Philippines was able to (1) design

more effective interventions, (2) promote voluntary compliance and reduce enforcement costs, and (3) create a sense of ownership and stakeholder buy-in, which are critical to the success and sustainability of any fisheries management regime.

The Critical Role of the Private Sector. Commercial fishing companies played a key role in spearheading and designing the seasonal closure in Zamboanga Peninsula. Local fishing companies recognized that it was in the long-term interest of their business to implement the seasonal closure, and they prompted government to enact a seasonal closure for the local sardine fishery. These private sector leaders insisted that the closure be based on best available science and data. In the Philippines, the private sector has also provided vital support to fisheries management efforts via local CSR initiatives and more ambitious public-private partnerships. For example, private sector contributions have covered stipends, health insurance, scholarship money, and equipment for the Bantay Dagat (local fishermen who volunteer to patrol municipal waters to help prevent illegal fishing). Beyond CSR, the private sector can act as key partners for sustainable fisheries: In the Philippines, the private sector is working with government and development organizations in win-win partnerships that advance both business objectives and local development and environmental protection goals.

Local Participation in Marine Protection. The Bantay Dagat network, a group of over 380 local fishermen selected by their communities and trained by BFAR and local governments, supports enforcement of fisheries laws. They patrol municipal waters to discourage and detect illegal fishing. In Balayan Bay, the collaboration between the Bantay Dagat, the Maritime Group of the Philippine National Police (PNP-MG), BFAR's Monitoring, Control and Surveillance vessels, and the Philippine Coast Guard has been highly effective and has resulted in zero violations of the seasonal closure. The Bantay Dagat, as highly visible symbols of local participation in marine protection, also play a critical role—direct and indirect—in educating local communities and fishermen on fisheries laws and raising awareness of the need for conservation.

Ensuring the Local Legitimacy of Science and Policy. Fisheries management policies, and the science behind them, must be clearly communicated to all affected stakeholders, to build broad buy-in. As discussed above, these policies are strongest when their development is informed by broad stakeholder consultation and participation. However, it is also vital that the science behind the policy is made accessible to stakeholders and is perceived as legitimate. For an intervention such as a closed season – which imposes short-term costs on stakeholders with the promise of long-term gains – trust in the science that shapes the policy is crucial. In the build-up to the Zamboanga closed season, NFRDI scientists presented their data at public meetings with policymakers, the private sector, and local communities. The private sector and fishermen were also deeply involved in data collection; fishermen and companies reported on catch data, and each stakeholder group – researchers, the private sector, government, and fishermen – played a role in validating the data submitted by others. In addition, fishing companies and other concerned stakeholders led the selection of the data collectors responsible for official monitoring of catch data, to ensure that this data would be seen as legitimate.



Study tour participants with a representative of the private sector in Mabini, Batangas. Ramon Araneta of First Gen Corp., is center front. (CREDIT: SSG Advisors)

STUDY TOUR DAY 1

Summary of Presentations

- Overview of BFAR's Seasonal Closure Initiatives (Visayas Sea, Zamboanga, Davao Gulf, Palawan)
- NFDRI's Role in Establishing a Seasonal Closure in Zamboanga Peninsula under the GEF-UNDP-UNOPS SCS-SFMP Project
- Enforcement for Closed Seasons
- Introduction to Ghanaian Context: Fisheries Management and Challenges
- USAID/ECOFISH Interventions for the Balayan Bay Closed Season

The study tour started with a full day of meetings with the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) in Manila, Philippines. These opening sessions provided the participants a broad overview of fisheries management in the Philippines, focused on the Philippine experiments with closed seasons.

Atty. Benjamin S. Tabios, Jr., Legal Officer V and Assistant Director for Administrative Services for BFAR, presented the Philippine legal framework for four seasonal closure initiatives across the archipelago. A closed season is a period during which the taking of specified fish species by specified fishing gear is prohibited in certain areas. A closed season is typically set for key spawning periods, to allow fish populations to recover.

Atty. Tabios emphasized the importance of science as the impetus for any fisheries policy or management program. By force of law, science is the basis for any fisheries policy in the Philippines. He stressed that interagency and broad stakeholder cooperation had been crucial during all stages of the seasonal closure initiatives. Navigating diverse stakeholder interests, BFAR had to design an appropriate and acceptable process for stakeholder consultation to ensure maximum buy-in and effective collaboration for each closed season. Representatives from all stakeholder groups (including the private sector, community representatives, fisherfolk, and fish processors) were invited to planning meetings as well as scientific meetings, in which scientists presented on data gathered and results of analyses related to fisheries resources and the closed season.

It is critical to clearly specify the size and boundaries of the areas covered by the seasonal closure policy to ensure that implementation and law enforcement are properly guided. The time period and duration of the closure depend on both scientific evidence (e.g., gonadal studies) and wider socio-economic implications for the affected areas. In Zamboanga, for example, the seasonal closure was set for a period of three months, from December 1 to March 1, during the peak spawning period of the target sardine species. There are early signs of success: for example, monitoring data for fish landings after each annual closure during the first three years of implementation of the Zamboanga Peninsula seasonal closure registered up to a 30% increase in sardine catch landed by commercial fishing vessels. Data also showed evidence of spill-over effects in other regions (Davao Gulf, Palawan, and Visayas). This success has created a groundswell of interest among local stakeholders in Zamboanga to implement an annual seasonal closure to sustain the benefits for local fisheries. Other regions such as Davao Gulf and Palawan have solicited the support of BFAR and the National Fisheries Research and Development Institute (NFRDI) to help them design and implement a similar seasonal closure policy in their fishing grounds.

Second, **Dr. Mudjikeewis Santos**, Scientist II of BFAR-NFRDI explained in greater detail the lengthy process leading up to the Zamboanga closure. The sardine species primarily targeted for the closure was the *Tamban* (*Sardinella lemuru*). Pre-closure gonadal studies involved data collection from ten study sites located in landing centers and fish processing areas from the west, east, and north coasts of Zamboanga. Data collectors and analysts were chosen by local stakeholders to foster local confidence in the credibility of the study. BFAR and local stakeholders set the closure for December 1 to March 1 based on the gonadal maturity of landed sardines (sardine eggs and larvae were found to be most abundant in December). The Technical Working Group considered extending the closure to cover November when *S. lemuru* spawners

were also observed to be abundant. However, although the science showed that an extended closure would be beneficial, the likely socio-economic impacts of extending the closure were believed to be too great.

Dr. Santos presented data showing that from 2012 to 2013, there was an increase in catch by 30%. In 2013, the spawners appeared to be increasing in number. Small-sized *S. lemuru* spawners decreased while the large-sized *S. lemuru* spawners increased. The size of sardine eggs relative to body size also increased. BFAR communicated the results from the closure via local and national media. Dr. Santos related how education and communication campaigns were vital to the entire process before, during, and after the initiatives.

Dr. Santos stressed that any proposed legislation for a permanent sardine closure in Zamboanga must be anchored in continued scientific studies with regular data collection on the status of the fishery, reproductive biology, socio-economic impacts, and impacts of climate change (e.g., El Nino, La Nina, frequency and strength of typhoons, etc.).

Third, **Dr. Nilo Selim Katada**, Officer-in-Charge of BFAR's Fisheries Resource Protection and Law Enforcement Unit-Quick Response Team argued that there are three key components to fisheries management: Science, Management, and Enforcement. He explained that the Philippines' internal waters are divided into different fishing zones that determine management and use. Before the seasonal closure in Zamboanga was established in 2011, BFAR led a mapping exercise involving rigorous stakeholder consultation and difficult discussion about expanding or restricting the geographic scope of the closure.

He outlined the standard operating procedures for enforcement of the closed season, including a vital, massive information drive to persuade voluntary compliance by local and commercial fishermen. Finally, Dr. Katada argued that the effectiveness of a closed season hinges on the degree of compliance. In the Zamboanga Peninsula, there was initial resistance during the first year of the seasonal closure, but the second year had much wider compliance.

Following a presentation from Thomas Insaadoo of the Fisheries Commission of Ghana on the Ghanaian context, **Mr. Jun E. Nervades**, Coordinator of the USAID ECOFISH Project for the Verde Island Passage-Marine Key Biodiversity Area (VIP-MKBA), presented on work under the ECOFISH project to support the Balayan Bay closed season. The 21-day Balayan Bay closed season was implemented from December 11-31, 2014. This was the first inter-Local Government Unit (LGU)-initiated closed season. It targeted two top species: the round scad (*galunggong*) and the big-eyed scad (*matambaka*). During the closure, the use of three types of fishing gears (purse seine, ring net, and bag net) were also prohibited. The closed season was based on the scientific studies and recommendations of Dr. Wilfredo Campos in the study "Fisheries Ecosystem Based Adaptation in Verde Island Passage," funded by Conservation International in collaboration with OCEANBIO.

Among others, ECOFISH assisted the Provincial Government Environment and Natural Resources Office (PG-ENRO) in facilitating expert and stakeholders meetings, focus group

discussions, and technical working group meetings before and during the closed season. The project also conducted a repro-biological study from September 2013-February 2014, which found *galunggong* and *matambaka* to be the top species in terms of catch volume. ECOFISH also supported consultations with the five local government units and their respective commercial fishers to negotiate the terms of the closed season (closure period, target species, and boundaries). In addition, ECOFISH helped create the draft ordinance for the Balayan Bay closed season, which was eventually adopted by LGUs from nine coastal municipalities. To support enforcement, the Governor of Batangas Province reactivated the Batangas Environment Response Team (BERT), and ECOFISH supported the 24/7 operations of the BERT Tactical Center. ECOFISH also worked with the Department of Social Welfare and Development (DSWD) to solicit funds to create a Cash for Work program for the 22 days that the over 1,500 commercial fishers affected by the closure would be unable to fish. Through the Cash for Building Livelihood Assets program of DSWD, the participating fisherfolk were paid P271.00 (approximately \$6) per day for services rendered. Fisherfolk worked on a range of projects under the program, including repairs of infrastructure for ecotourism, coastal clean-ups, and mangrove restoration.

The day ended with an informal dinner interaction with representatives from commercial fishing companies. Mr. Michael Tan, Vice President of Mega Sardines Cannery and Fishing Corporation, and Mr. Paul Santos, Vice President of the Deep Sea Fishing Federation in the Philippines, joined the group to share the private sector experience with the seasonal closure in the Zamboanga Peninsula. Fishing companies spearheaded the closure in Zamboanga and have been active in its implementation. Much of the discussion was dedicated to understanding what motivated commercial fishers to cooperate with the government on closed seasons, as well as the economic costs and benefits felt by their companies during and after the closure.

Q&A Highlights

- *Who drives the research agenda in the Philippines? Where is the money coming from?* Most of the funding comes from the national government, which allocates the central fund. Even research by academia is driven by grants from agencies like the Department of Science and Technology. In other cases, academic and research institutions receive funding from NGOs and development partners.
- *How often is fisheries research conducted?* The National Stock Assessment Program (NSAP) started in 1997 and expanded the previous catch statistics. Data collection is conducted in 763 landing centers. Data collectors trained in species identification visit these landing centers every two days to observe and measure the catch. These enumerators are at least fisheries college graduates or graduates of related science courses such as biology or veterinary science. BFAR has a scholarship program for 400 graduates per year to study fisheries science all over the country. This creates a pool of experts for future research.

- *What are the alternative livelihood projects/programs for the affected fisherfolk during the seasonal closure?* Seaweed production is one of the more lucrative alternatives. Most of the alternative livelihoods are land-based, such as small backyard livestock and crop production. For some fishing communities, fishermen prefer to instead fish in the waters outside the closure areas.
- *What stakeholders are included in the discussions and consultations surrounding the closure? How did they receive the closure?* Representatives from the official fishing vessel associations and the fishing federations participated in stakeholder consultations for the seasonal closure. These stakeholder consultations take time. For the Zamboanga peninsula, the meetings started in 2005 but the regulation/legislation only came out in 2011.
- Participants were impressed by the level of voluntary compliance with the seasonal closure in Zamboanga. BFAR attributed high compliance to an effective education campaign. In Zamboanga, law enforcement personnel also served as educators in fishing communities to solicit and encourage compliance.
- Limits on fishing in the Philippines have been set by national and local laws. Municipal fishing is regulated by the LGU and recently the FishR Program has registered fisherfolk across the Philippines to improve fisheries management. BoatR is a similar registration initiative for fishing vessels.



Study tour participants board a fishing vessel in the Philippines to meet the crew and inspect the gear used by local fishermen. (CREDIT: SSG Advisors)

STUDY TOUR DAY 2

Summary of Presentations

- Role of the Provincial Government of Batangas in the Seasonal Closure for Balayan Bay
- Coastal Resources Profile of Mabini, Batangas
- Coastal Law Enforcement of Mabini

Ms. Loreta A. Sollestre, SEMS, Head of Planning and Environment/Coastal Management Section for the Provincial Government Environment and Natural Resources Office (PG-ENRO) in Batangas, discussed the role of the Provincial Government of Batangas in the seasonal closure for Balayan Bay. For Fisheries Protection and Management, PG-ENRO works to address declining fish catch; use of illegal and destructive fishing methods; the decreasing effective area of fishing; and growing population pressure and increased fishing efforts. As part of this work, PG-ENRO helped to create the Bantay Dagat Network for coastal and marine law enforcement in

the Province of Batangas and Verde Island Passage Marine Corridor. The Bantay Dagat Network includes 388 volunteers, mostly local fishermen, who help the marine police patrol and enforce marine protected areas and closed seasons. PG-ENRO and BFAR provide the Bantay Dagat with training and capacity building activities. LGUs, NGOs, and the private sector provide the Bantay Dagat with an honorarium and equipment.

Leading up to the seasonal closure in Balayan Bay, PG-ENRO led a number of dialogues with commercial fishers from June to October 2011. Fishermen raised a number of concerns, including decreased fish catch, struggles with the prohibition of bag nets and ring nets in municipal waters, competition from large-scale commercial fishing vessels from Manila encroaching on local fishing grounds designated for small-scale commercial fishing, the need to regulate the number of boats in local fishing grounds, and their concern about the effects of a seasonal closure on local livelihoods.

Dr. Wilfredo Campos' study "Fisheries Ecosystem Based Adaptation in Verde Island Passage" was instrumental in planning for the seasonal closure. The province of Batangas considered the following recommendations from the report: "(1) Strategic regulation (closed season/area), (2) Enforce the ban on the use of fine mesh nets, (3) Institutionalize the inventory of fishing gear and registration of fishers, (4) More extensive monitoring of catch and effort together with determining critical biological information, (5) Closer examination of *Payao* (Fish Aggregating Device or FADs)-associated fisheries for policy formulation, (6) Strengthen the existing MPA network within the VIP."

Through focus group discussions with local commercial fishers, PG-ENRO helped establish consensus to establish the seasonal closure in Balayan Bay. Then, at a larger stakeholders meeting, the group selected five small pelagic species as the target species for the closure. Scientists presented data on maturity stages to establish a time period for the proposed closure. The team created a Technical Working Group to lead the design and implementation of the closure.

In September 2014, the Provincial Government of Batangas consulted the nine Municipal Mayors with jurisdiction in Balayan Bay and solicited their support for the proposed closed season of Balayan Bay. All stakeholders expressed their support through the passage of municipal ordinances that provided the legal basis at the municipal level for implementing the Balayan Bay seasonal closure. The implementation of the closed season for Balayan Bay ran from December 11-31, 2014.

Importantly, PG-ENRO in Batangas Province treated the seasonal closure in Balayan Bay as an experiment, limiting the closure area only to Balayan Bay and setting a short implementation period of three weeks. After observing early positive results, the stakeholders are now considering expanding the geographic scope, setting a longer period for the closure, and including small-scale municipal fishing operations in the next closed season.

Following the seasonal closure, all fisherfolk, LGU representatives, fishery experts, and most vessel owners in attendance at an assessment workshop declared the experiment a success. Fishermen reported increased sightings of juveniles and increased catch. All *barkadas* (fisherfolk), fishery experts, and most vessel owners expressed their willingness to repeat the closed season under the condition that Cash for Work activities are maintained. There were no violations during the closed season, and the collaboration of the Bantay Dagat, Maritime Police, Philippine National Police and Coast Guard was perceived as highly effective.

Compensation through Cash for Work activities was crucial in the successful implementation of the seasonal closure, providing affected fishers an alternative source of livelihood during the period of the closed season.

However, nearly all respondents acknowledged the negative impacts of the *Dulong* (juvenile fish) fishery on the closed season. The peak season for *Dulong* overlaps with the spawning season of *Matambaka* (big-eyed scad) and *Galunggong* (round scad) – the target fisheries for the closed season. Many juveniles of these target species were caught during and immediately after the closed season as bycatch of the *Dulong* fishery.

According to PG-ENRO, the following changes to the closed season were proposed during a follow-up planning workshop:

- Inclusion of municipal fishers in the closed season and Cash for Work activities, as the use of fine mesh nets (e.g., by *Dulong* fishers) jeopardizes the success of the closed season for other species.
- An extension of the closed season to two to three months (between mid-November and mid-February) to allow for the fish to mature and further improve fish stocks. However, vessel owners were reluctant to make this change and would like the closed season to last for only one to two months
- Replication of the closed season on a greater spatial scale, by including Batangas Bay.
- Better alignment of Cash for Work activities with existing skills of fishermen.

Miss Pansencia “Nini” Calangui, the Municipal Tourism Officer of Mabini, welcomed the group at the Municipal Hall. Mabini has been very active in implementing coastal resources management programs, and it has won several awards for best MPAs at both the provincial and national levels. Fisheries legislation in Mabini delineate fees for the use of municipal waters; define municipal waters and permitted uses of different zones; and call for the registration of municipal fishing vessels.

Ms. Nini shared the history of the Bantay Dagat, which was formally institutionalized in 1998 with the help of Kabang Kalikasan (WWF) and deputized by BFAR. The Bantay Dagat in Mabini is under the supervision of the Tourism Officer. The Bantay Dagat is comprised of a chairman who oversees the four committees on monitoring, enforcement, logistics, and operations.

Every Bantay Dagat is trained in the following competencies:

- MPA Management Training
- Climate Change Training
- Vulnerability Assessment
- Paralegal Training
- Deputy Fish Warden Training
- Advance Fishery law Enforcement
- Marine Mammal and Sea Turtle Stranding Rescue Training
- GPS Literacy Training
- Reef Check Eco-Diver Training
- Population, Health and Environment Training
- Organizational Development
- First Aid Training
- Basic Life Saving Training
- Intelligence Training
- Community Based Oil Spill Training
- Community Based Coastal Resource Management Orientation
- Stress Management Workshop
- Basic Ecology and Coral Reef Biology Training

The duties and responsibilities of the Bantay Dagat are as follows:

- Protecting the marine environment (tree planting, coral restoration, and coastal clean-up)
- Patrolling against illegal fishing
- Providing assistance in rescue operations
- Regular monitoring of the collection of the Unified Conservation Fee, charged to SCUBA divers
- Installation and maintenance of buoys and boundary markers for MPAs
- Regular monitoring and surveillance patrol along coastal areas

The Bantay Dagat in Mabini receive the following incentives and benefits:

- Free Philhealth Membership (health insurance)
- Accident and Life Insurance Coverage
- Scholarship benefits for children
- Free capacity-building trainings and seminars

The Bantay Dagat have successfully curbed once prevalent illegal cyanide and dynamite fishing in Mabini. They have also been instrumental in the increased local awareness of marine environmental protection as well as the success of the implementation of the Unified Conservation Fee (a diving fee charged to tourists to support local conservation). Through regular and high visibility patrols, they have also controlled the illegal entry of commercial fishers within the municipal waters of Mabini.



Representatives of the Bantay Dagat of the Mabini and Tingloy municipalities. (Credit: SSG Advisors)

Representatives of the Bantay Dagat of the Mabini and Tingloy municipalities. (Credit: SSG Advisors)

Q&A Highlights

PG-ENRO Discussions

- *On Cash for Work programs:* Ms. Sollestre explained that the funds for the Cash for Work program came from the Department of Social Welfare and Development (DSWD), a national government agency, which provided the Batangas Provincial Government some Php 9 Million for the more than 1,500 participating fisherfolk. The PGENRO convened the LGUs to develop Cash for Work activities. In the municipality of Calatagan, the program involved ecotourism activities situated in the MPAs as well as the repair of the mangrove path-walks. In other localities, the participating fisherfolk were asked to clean the public markets and conduct regular coastal clean-ups.
- *What were the challenges in implementing the local ordinances? How were conflicting interests of different parties managed?* Local ordinances go through a very lengthy process of public hearings and consultation before they are passed by the legislative councils. In this particular case, the leadership of the Provincial Government hastened the process and helped to secure buy-in from the municipal governments.

Mabini Discussions

- Who provided the patrol boats for the Bantay Dagat? Conservation International and BFAR
- *On the conservation fee collected from tourist divers in Mabini and Tingloy municipalities:* Ms. Nini explained that there is an ordinance for the collection of conservation fees for coastal resources management. These fees help pay for a daily stipend and operational expenses for the local Bantay Dagat groups.
- *In the experience of Mabini, what is the process for passing a fisheries ordinance?* First, there is data gathering from the community where the ordinance will take effect. There is a minimum of two to three consultations with all stakeholders during which the proposed articles are tackled including the prohibitions and penalties. Provisions stipulated in the ordinances are guided by the local government code as well as the fisheries code. After the public hearings, there is a final deliberation. After the municipal legislative council and the Mayor approves, the ordinance is then submitted to the provincial government for review and affirmation before it takes effect as a local law. The process usually takes about two years.

STUDY TOUR DAY 3

Summary of Activities

- Breakfast Interaction with Bauan Fisherfolk and Visit to Fish Landing Site
- Field Exposure in Mabini and Tingloy Municipal Waters and Lunch with Bantay Dagat and Marine Police
- Opportunity for SCUBA Diving and Snorkeling

Bauan is one of the five coastal municipalities in Balayan Bay, Batangas, that participated in and supported the local seasonal closure. Over a locally prepared breakfast, the group interacted with the Barangay Captain, the Chairperson of the Integrated Fisheries and Aquatic Resources Management Council, and several local fishermen. Participants learned about the community's experience with the seasonal closure and the impacts of the intervention on their community and local fish stocks. Some of the participants also had the opportunity to board a fishing vessel, meet the crew, and inspect the gear. Following the breakfast interaction, participants explored an outdoor fish market in Anilao, Mabini, selling a wide range of pelagic and demersal fish caught in local waters.

Participants then boarded local outriggered boats used by divers in the Mabini and Tingloy municipalities. Several local enforcement boats used by the Bantay Dagat teams and the Marine Police guided the participants around the municipal waters. The group then landed at a beach in Brgy. Marikaban and ate a picnic lunch with the local marine police and Bantay Dagat. The chairs of the two Bantay Dagat teams answered participants' questions about fisheries enforcement and the Bantay Dagat program.

Bantay Dagat are selected by local fishing communities and trained by BFAR and local government agencies. Bantay Dagat is a voluntary network: some local governments include stipends for Bantay Dagat in their budgets; in other cases, small stipends or other benefits are provided by the private sector or conservation NGOs. The Bantay Dagat patrol in teams of six to seven members, sometimes jointly with the Philippine National Police. They do not carry firearms, though they do work with the police to apprehend suspects. They also collect evidence for use in court cases, and they play a very active role in educating their communities and other local fishermen on fisheries laws and the value of conservation and sustainable management.

When asked why they would volunteer to be Bantay Dagat, they told the participants that they were motivated by a sense of responsibility for local conservation and a desire, as fishermen, to protect their livelihoods. A female member of the Bantay Dagat mentioned that she felt an inter-generational responsibility. She wants her children to enjoy and inherit a healthy environment with abundant fisheries and marine resources. Government, NGOs, and the private sector also support Bantay Dagat by providing food subsidies and small stipends, paying for health insurance and life insurance, providing scholarships for their children, and supporting alternative livelihoods (such as raising livestock),

The local police and the Philippine National Police-Maritime Group (PNP-MG) operating within the two municipalities also participated in the event. The head of the PNP-MG, a female police officer, shared the experiences of her team in the patrols, apprehensions, and cases filed over the last few months. While they have been successful in reducing illegal and destructive fishing within their area of jurisdiction, they have been constantly challenged with budget constraints that limit their ability to purchase fuel for regular patrols.

Upon return to the resort, some participants received SCUBA diving and snorkelling lessons in the coral reef in Mabini, led by certified PADI instructors. These participants had the chance to experience first-hand the rich biodiversity of the Verde Island Passage.



Study tour participants meet with Philippine marine police and Bantay Dagat. (CREDIT: SSG Advisors)



Emmanuel Addae of the Marine Police of Ghana interacts with a local vendor at the Anilao fish market. (CREDIT: SSG Advisors)

STUDY TOUR DAY 4

Summary of Presentations

- GEF/UNDP – UNOPS Sulu-Celebes Sea Sustainable Fisheries Management Project
- Working with NGOs on Coastal and Marine Law Enforcement
- Community-based Enforcement and Prosecution
- The Batangas Coastal Resources Management Foundation (BCRMF)

Mr. Romy Trono, formerly the Regional Project Manager for the GEF/UNDP – UNOPS Sulu-Celebes Seas SFMP, presented on transboundary management interventions for the Sulu-Celebes Sea by Indonesia, Malaysia, and the Philippines. In particular, he focused on the Transboundary Diagnostic Analysis and Strategic Action Programme for the Sulu-Celebes Sea. The Transboundary Diagnostic Analysis/ Strategic Action Programme approach is a highly collaborative process that has proven to be a major strategic planning tool for GEF International Waters Projects over the last 16 years. The Transboundary Diagnostic Analysis involves (1) defining system boundaries; (2) collection and analysis of data; (3) identification and prioritization of transboundary problems; (4) determination of the environmental and socio-economic impacts; (5) analysis of the immediate, underlying, and root causes; (6) development

of thematic reports, (4) identification of leverage points; and finally (5) drafting of the Transboundary Diagnostic Analysis. The Strategic Action Programme Process, on the other hand, involves Strategic Thinking, Strategic Planning, and Implementation.

Genetic data suggests that the small pelagic fish stocks in the Sulu-Sulawesi Marine Ecoregion (Bali sardine, frigate tuna, Indian mackerel and big-eyed scad) are shared by Indonesia, Malaysia, and the Philippines and therefore require joint management. The Transboundary Diagnostic Analysis was used as an objective basis for identifying transboundary problems and starting to create a common program for management. Conservation International-Philippines facilitated conduct of the Transboundary Diagnostic Analysis (with technical teams from Indonesia, Malaysia, and the Philippines).

The Transboundary Diagnostic Analysis identified the following transboundary problems: (1) unsustainable exploitation of fish; (2) habitat modification; (3) climate change; (4) pollution; (5) freshwater shortage; and (6) alien and invasive species. These problems have socio-economic, health, and cultural consequences in the region. Of these six challenges, the first four were prioritized. Part of the Transboundary Diagnostic Analysis process was a causal chain analysis for these challenges. The analysis yielded that some of these challenges could be addressed locally through national policies, but others require closely coordinated tri-national initiatives.

However, it is important to note that while the Sulu-Celebes Sea Large Marine Ecosystem involves three countries (Indonesia, Malaysia, and the Philippines), the Guinea Current Large Marine Ecosystem (GCLME) includes 16 countries in South-West Africa, including Ghana. The transboundary management challenges for Ghana and its neighbors will likely be considerably more complex.

Atty. Mario ‘Macki’ Maderazo, an environmental lawyer with extensive experience in Batangas province, joined the group to discuss community-based law enforcement and prosecution based on the Batangas Bantay Dagat experience. He described the Environmental Rules of Procedure, which allows citizens to bring cases to court on the behalf of the environment, and he led a detailed discussion of the Bantay Dagat system. Att. Maderazo explained that the Bantay Dagat are community-based but deputized by either the BFAR and/or the LGU, and remain under the supervision and control of the LGU through the Municipal Agricultural Office. Bantay Dagat are trained to properly gather evidence and prepare documentation and other legal forms; they monitor cases and may stand witness for the prosecution; and they conduct sea borne patrols, foot patrols, and intelligence gathering work. Bantay Dagat work in close coordination with local police and the Philippine National Police-Maritime Group (PNP-MG) on arrests and apprehension, and with the judiciary bodies in cases of trial.

Mr. Ramon Araneta of First Gen Corp presented on the Batangas Coastal Resources Management Foundation (BCRMF), an alliance of NGOs, private companies, government entities, and academic institutions that promotes Corporate Social Responsibility initiatives on behalf of the local private sector. Since 1991, BCRMF has been behind many environmental

programs in Batangas. With support from leading companies like First Gen, BCRMF creates tree nurseries, supports reforestation initiatives, leads coastal clean-ups, creates artificial reefs to divert marginal fishers from the jetty ports, and promotes sea turtle conservation. BCRMF also supported the Bantay Dagat by providing them with the materials to build patrol boats, including wood and engines.

Mr. Araneta argued that “Responsibility over the environment is good business. [Government and development organizations should] make the private sector partners and not just sponsors.” He explained that it is often more costly for businesses to be non-compliant with environmental policies. But he also argued that the importance of environmental compliance needs to be translated into a language that is understandable to the private sector: According to Araneta, “We have to present the benefits of compliance and environmental protection in numbers, to show the economic costs. If we do not comply and get penalized, how much would it cost the company? How much time would be wasted? What is the impact to our corporate reputation?” He also explained the Environmental Guarantee Fund (EGF), which is required by law before a company is allowed to operate. It is a revolving fund that is used to pay for environmental damages in the case of an accident or crisis (such as an oil spill).



Looking out at the Verde Island Passage in Mabini, Philippines. (CREDIT: SSG Advisors)

STUDY TOUR DAY 5

Summary of Activities

- Observation and Interaction with Women's Groups Focused on Fish Processing in Calatagan, Batangas
- Lunch Interaction with Calatagan Municipal Environment and Natural Resources Office (MENRO) and Representatives of the Women's Groups

Calatagan is one of the five coastal municipalities that participated in the seasonal closure in Balayan Bay. The municipality has been actively involved in many marine conservation and fisheries management initiatives in Batangas province. Recently, the municipality has been a recipient of funding support for community-based livelihood projects, including the processing of small pelagic fishes caught by both commercial and municipal fishers. Women are the main beneficiaries of these livelihood activities. The study tour group visited two fish processing enterprises in Calatagan, Batangas, managed by local women's associations.

The first enterprise is run by the "Samahang Kapit Bisig ng Barangay Sta. Ana", a 15-strong women's organization. The members are housewives of local farmers and fishermen gathered and led by association president Ms. Connie Velasco, a former member of a national women's association. The association processes parrot fish into fish "embutido" (the Philippine version of meat loaf). Participants observed the preparation of fish embutido, with explanation from Ms. Velasco, in the front yard of one association member's house. The association is currently still experimenting with the recipe and is only marketing within Calatagan. The small-scale enterprise is not yet making a profit, but they now have a sense of the costs and potential revenue. They have also informally discussed among themselves potential profit-sharing schemes, including a retention fund for association expenses. The women source their fish from their husbands' catch or from local markets.

Next, the participants visited an enterprise specializing in smoked fish, managed by the "Poblacion 4 Sitio Payapay Women's Organization." The organization has 30 members – mainly wives of local fisherfolk and farmers of Sitio Payapay. Ms. Mina Panganiban and other members demonstrated the smoking process in the yard of one member's house. The product has a shelf life of four to six days, and the orders come from local community members. The small-scale enterprise is also not yet profiting, but they have discussed profit sharing schemes as a group.

Both women's organizations were recently established through the support of the Municipal Government of Calatagan. They are beneficiaries of the Bottoms-Up Budgeting (BUB) program, which supports local micro enterprises. The local government provided start-up capital and equipment to both groups. In addition, the Technical Education and Skills Development Authority (TESDA) has trained the women in product development and other skills. Brgy. Sta. Ana, for instance, chose fish "embutido" from an array of recipes developed by TESDA.

The study tour participants joined the women’s groups at a lunch interaction with the Calatagan Municipal Agricultural and Environment Office headed by Ms. Mien Custodio, who warmly welcomed the delegation. Members of the Calatagan Bantay Dagat were also present. At the luncheon, a variety of handicrafts and food products developed and marketed by other women’s groups of Calatagan were displayed.



Emelia Yawson, a fish processor from Ghana, smokes fish during an interaction with a women’s association of fish processors in the Philippines. (CREDIT: SSG Advisors)



At a lunch interaction with study tour participants, Samahang Kapit Bisig ng Barangay Sta. Ana and the Poblacion 4 Sitio Payapay Women's Organization—the two women's associations visited by the study tour—displayed their locally made products alongside products produced by other women's associations in Calatagan. Local products included fish products, but also speciality peanut butter (above) and arts and crafts. (CREDIT: SSG Advisors)



Women fish processors in the Philippines demonstrate fish smoking methods during an interaction with study tour participants. (CREDIT: SSG Advisors)

STUDY TOUR DAY 6

Summary of Presentations

ICT Partnerships of ECOFISH

On the final day, Mr. Lawrence Ang, SSG Partnerships Specialist, presented on innovative technology partnerships developed under the USAID ECOFISH project. The strongest public-private partnerships (PPPs), according to Mr. Ang, are built on shared value: the sweet spot where development goals overlap with core business objectives. Ideally, partners share goals, resources, risks, and rewards. Strong PPPs creatively leverage the strengths, expertise, and

resources of the private sector, and bring development actors and the private sector together to co-design activities to maximize impact for both development and business.

Mr. Ang and USAID ECOFISH have brokered a number of partnerships with the private sector to advance sustainable fisheries goals. Mr. Ang highlighted a few ICT partnerships in particular, which deployed innovative models for using technology to improve fisheries management at both national and local levels. Among these are the “TV White Space-Supported Fisherfolk Registration” and the “700DALOY” public-private partnerships.

Microsoft has developed a technology – TV White Space – that rides unused TV frequencies to create an amplified Internet connection that can serve remote, off-grid communities. The TV White Space partnership under ECOFISH works with Microsoft and the BFAR Department of Science and Technology to harness TV White Space to improve the efficiency of fisherfolk registration in six remote coastal municipalities in the island province of Bohol.

Second, in partnership with the telecom company SMART Communications and the marine police (PNP-MG), ECOFISH helped create 700DALOY (Dedicated Alert Lines for Ocean Biodiversity), a secure SMS hotline that lets the public text anonymous reports of fisheries violations to the marine police. From May-December 2014, the pilot effort in Tawi-Tawi has resulted in over 3,000 reports and the filing of three high profile cases. The partners are now planning to expand the hotline to other priority areas around the country.

Wrap-Up Discussions

On Day 4 of the Study Tour, participants gathered into four small groups – focused on enforcement, co-management, science, and post-harvest – to discuss key lessons learned from the study tour as well as possible action steps upon their return to Ghana. On Day 6, a representative from each group presented on their discussions:

Science Group

- The Science group recognized the need for collaborative research involving both government and fishing communities.
- A fish stock assessment should be conducted annually, and the results should be communicated to stakeholders.
- Research and surveys should be conducted to identify fish spawning areas to inform possible seasonal closures or other interventions.
- Prior to the establishment and legislation of MPAs and seasonal closures, scientific studies need to be conducted as a foundation for the management intervention. Fundamental research (for example, information on migration patterns or identifying correct timing or dates for implementing closed seasons) should be done to inform the management intervention. University students and NGOs can supplement government research efforts.
- Scientists need to be transparent with their findings, particularly with socioeconomic data.

- The group also recognized the need to integrate Traditional Ecological Knowledge (TEK) into fisheries management. However, there is also a need to test and validate this knowledge.
- There is also a need to foster a sense of ownership over fisheries management for all stakeholders. This can be achieved, in part, by involving stakeholders, especially communities and fishermen, in data collection to inform management. This also helps to legitimize this data – and resulting management actions – in the eyes of affected communities.
- Policies need to be founded on science and informed by fishermen’s practical and traditional knowledge. Interaction with fishermen is key – science must be clearly and effectively communicated to fishermen.
- Ghana could create science and stakeholder working groups to ensure that scientific research is both collaborative and clearly communicated to all stakeholders.

Comanagement Group

- Comanagement programs in the Philippines reflect a high level of decentralization. There is effective dissemination of information, laws, and policies to diverse stakeholders.
- Involving the grassroots in scientific programs strengthens data collection and helps to secure buy-in.
- In Ghana, fisheries are still open access, but in the Philippines, boundaries are well defined through zoning of municipal waters. There are also designated landing sites, and a ban on trawling.
- The group proposed research on appropriate mesh size of nets, as well as on what nets and gear types should be used by the artisanal sector.
- The group recognized the need to regulate the number of boats in Ghana’s waters. There are currently no laws clearly defining areas for artisanal fishing in Ghana.
- It was further recommended that Ghana develop clear policies and legislation to support comanagement as early as possible.
- These policies should be supported by a strong academic mix (with social scientists) to support stakeholders across the sector.

Post-Harvest Group

- The two Ghanaian fish processors and a leader from the Post-Harvest division of the Fisheries Commission of Ghana expressed that it is important that fishermen catch fish of the right quality – free of chemicals, mature, and legally caught.
- The group was interested in fish processing practices in the Philippines and raised some questions: Do fishermen go to sea with salt or ice to preserve their catch? Do they have cold storage? During smoking, do fish processors use charcoal, firewood, or gas? How do they store the fish after smoking? Can fish be preserved for a longer period? Do fish processors export their product, selling to other communities or to other countries? How

do they package their fish? How are different fish processing associations structured? What kind of support do they get from government, NGOs, and the private sector? Are they trained in safe handling practices? Do they import the fish that they process? What are their other sources of fish during the closed seasons? Do fishermen allow the processors to sell their processed fish before they pay?

- The group noted that the municipal government in Calatagan provided a range of support to women's groups, including start-up capital, training, and assistance in marketing their products.
- The group made special note of the use of ice in the Philippines to maintain freshness from the time a fish is caught throughout the post-harvest process: to maintain quality, all fishing canoes carry ice to sea in insulated boxes. At the landing site, fish are bagged, iced and taken to market. The group noted that the use of ice ensures that fish processors receive fresh and good quality product.
- Fish processing can yield value-added products. The group was very interested in the development of value-added products, to support entrepreneurs and small- and medium-scale enterprises.

Enforcement Group

- There was great interest from the group in how the Bantay Dagat are trained, the sources of their funding, and the comanagement approach in general.
- The Bantay Dagat institution is voluntary in nature, recruited at the municipal levels, and subject to various forms of compensation (e.g., allowances, stipends, monthly rice allowance, etc.).
- Revenue from diving fees (conservation fees) help support the Bantay Dagat. Some municipal governments have budgeted for Bantay Dagat stipends, and NGOs and the private sector also provide support.
- Bantay Dagat receive a wide range of trainings to equip them to effectively perform their duties.
- Participants felt there should be a mandate for comanagement in Ghana similar to what they observed in the Philippines. In Ghana, they imagined a corollary to the Bantay Dagat institution that would be voluntary and public, recruited at the community level, and involve some form of compensation. The jurisdiction in Ghana would be within community waters, and there would need to be strong coordination with the police, who would be responsible for arrest and prosecution.
- The Ghanaian community enforcement program could be funded through a combination of daily tolls, monthly contributions from migrant fishermen, and support from the Fisheries Commission and the private sector.
- Volunteers could be selected by chief fishermen and vetted by the Fisheries Commission and the police. Training could be managed by the Fisheries Commission and the police, with support from NGOs and the private sector.

- The community enforcement groups should be well trained and properly equipped (with patrol boats, radios, and cell phones). Resources could be sourced from commercial fishermen, the private sector, and the Fisheries Commission.
- There is also a need for police to be better trained in enforcing fisheries laws, including filing of cases and prosecution.



Members of the Enforcement Discussion Group meet to discuss lessons learned and possible next steps for Ghana from the study tour. (CREDIT: SSG Advisors)

CONCLUDING REMARKS AND NEXT STEPS

Over the course of the six-day study tour to the Philippines, participants had a chance to learn about the interplay between science, policy, and enforcement in fisheries management in the Philippines, as well as the important roles diverse stakeholders – including government, fishermen, fish processors, scientists, NGOs, and the private sector – can play in ensuring effective management of key fish stocks.

Key lessons learned include the following:

- Science should be the foundation for fisheries management. A strong scientific foundation requires regular and thorough monitoring and data collection, as well as clear communication of science to all affected stakeholders.
- A genuine and participatory stakeholder consultation process is essential to securing buy-in from all stakeholders and creating effective comanagement regimes. This process can be time consuming, but it is vital to success.
- Seasonal closures and other ambitious fisheries management interventions require careful thought to alternative livelihoods for affected communities, to mitigate possible socioeconomic impacts.
- Strict enforcement is key to effective fisheries management, though it also must be complemented by an aggressive education campaign. Comanagement regimes, such as the Bantay Dagat network, can bolster enforcement efforts. The Bantay Dagat program benefits from close coordination with the marine police, and plays a key role in educating local communities on marine laws.
- The strongest public-private partnerships are built on shared value, where development goals and core business objectives align. The private sector can play an important role in leading and supporting fisheries management efforts, as seen in the Philippines.
- With appropriate and strictly enforced management interventions, depleted stocks of small pelagics can rebound in a short period of time. The seasonal closure in Zamboanga, for instance, led to a 30% increase in sardine stocks.

Going forward, the participants articulated a number of action areas for the Ghanaian fisheries sector, including:

- Ensuring regular and rigorous data collection to support fisheries policymaking.
- Employing community-based data collection and participatory approaches to involve fishermen and affected communities in fisheries research, and to benefit from the rich practical knowledge of fishermen.
- Developing strategies to ensure that science is clearly and transparently communicated to all stakeholders, and that fisheries management policies are informed by substantive stakeholder engagement.

- Developing legislation in Ghana to permit comanagement strategies similar to the Bantay Dagat program in the Philippines. Exploring the feasibility and legal basis for creating and operationalizing community-based enforcement teams to more effectively address illegal and destructive fishing.
- Beginning the necessary data collection and stakeholder consultation process to explore the feasibility and appropriateness of seasonal closures for fisheries recovery in Ghana.

Finally, while the study tour exposed participants to new ideas and applications for fisheries management, it also served another important function: It brought diverse stakeholders from the fisheries sector in Ghana together to openly and candidly explore a way forward for managing small pelagic fisheries. The study tour was an opportunity to build new and stronger ties, common understanding, and a shared commitment to protecting Ghana's valuable marine resources.



Study tour participants and study tour leader Romy Trono (center). (CREDIT: SSG Advisors)

ANNEX A: STUDY TOUR AGENDA

Day I May 25, 2015

Time	Activity	Presenter/ Facilitator
08:30-09:00	Study Tour Orientation (logistics, e.g., accommodations, transport, weather, nearby malls and shopping, safety precautions, etc.)	Carlie Labaria
09:00-09:10	Welcoming Remarks	BFAR Director Asis Perez, SSG Representative Tess Zakaras
09:10-09:30	Introductions and Review of Study Tour Objectives, Agenda, and Itinerary Session Description This session will review the objectives as well as the agenda and itinerary for the 6-day study tour. Participants will also be asked to introduce themselves according to name, office affiliation and role on the project.	Romy Trono
09:30-10:00 10:00-10:45	Session I: Philippine BFAR's Management and Enforcement Interventions for Small Pelagic Fisheries: The National Context Presentation 1: Overview of BFAR's Seasonal Closure Initiatives (Zamboanga, Davao Gulf, Visayan Sea, Palawan) Presentation 2: NFRDI's Role in Establishing a Seasonal Closure in Zamboanga Peninsula under the GEF-UNDP-UNOPS SCS-SFMP Project Session I Description In this session, BFAR will provide an overview of the science, stakeholder engagement process, implementation, and enforcement of seasonal closure initiatives in the Philippines. BFAR will also share challenges and lessons learned in these initiatives. Learning Objectives ✍ To share early successes, challenges, and lessons learned from the Philippines' experience with seasonal closures for small pelagic fisheries; ✍ To explain the science, stakeholder engagement process, implementation, enforcement, monitoring, and reporting involved in seasonal closure initiatives.	Director Asis Perez Dr. Mudjikeewis Santos
10:45-11:00	Questions and Discussions	
11:00-11:30	Coffee Break	

Time	Activity	Presenter/ Facilitator
11:30-12:30	<p>Session 2: Understanding Community-based and Inter-agency Collaboration for Enforcement of Fishery Laws</p> <p>Presentation by BFAR on community-based law enforcement (Bantay Dagat)</p> <p>Session Description</p> <p>A brief introduction by BFAR to the Bantay Dagat concept and interagency partnerships (PCG, PNP-MG, PN, DILG) and NGO/PO partnerships for fishery law enforcement.</p> <p>Learning Objectives</p> <ul style="list-style-type: none"> To provide study tour participants an opportunity to learn about the legal basis, capacity building for surveillance, apprehension and filing of legal cases, prosecution, deputization, and funding support for Bantay Dagat. To learn from BFAR's experience with interagency partnerships and NGO/PO partnerships for fishery law enforcement 	BFAR QRT Officer
12:30-12:45	Questions and Discussions	
12:45-14:00	Lunch Break	
14:00-14:30 14:30-15:30	<p>Session 3: Introduction to Ghanaian Context and Dialogue</p> <p>Presentation by Ghanaian Participants</p> <p>Open Forum and Discussion</p> <p>Session Description</p> <p>During this session, the study tour participants will share their experiences with and challenges in managing their declining small pelagic fish stocks; relevant proposed and existing interventions; and their ideas for co-management and community-watch groups in Ghana.</p> <p>An open forum after the presentation will provide an opportunity for clarification as well as for sharing ideas and additional information.</p> <p>Learning Objectives</p> <ul style="list-style-type: none"> To orient representative/s from the BFAR to the challenges and issues the Ghanaian participants are facing regarding management of small pelagic fisheries and enforcement. To invite further discussion and an exchange of ideas and experience between the Ghanaian participants and BFAR. 	Ghanaian Representative/s
15:30-18:00	Free Time in Manila	Romy Trono/Carlie Labaria

Time	Activity	Presenter/ Facilitator
18:00-21:00	<p>Session 4: Understanding the Crucial Role and Participation of the Private Sector for a Successful Seasonal Closure</p> <p>Dinner Discussion with Commercial Fishing Companies</p> <p><u>Session Description</u></p> <p>This session will be an informal dinner interaction with representatives from the commercial fishing companies and canneries in Zamboanga. The participants will learn from the private sector about the support they provided in ensuring that the seasonal closure was effectively implemented/enforced.</p> <p><u>Learning Objectives</u></p> <ul style="list-style-type: none"> ✍ To provide participants an opportunity to learn about and discuss the crucial role of commercial fishing and fish processing companies in successfully designing and implementing seasonal closures; ✍ To create an awareness and understanding among the participants of the challenges faced by the private sector in designing and implementing seasonal closures and how these challenges can be overcome. 	Romy Trono



Day 2
May 26, 2015

Time	Activity	Presenter/ Facilitator
06:00-09:45	Travel to Batangas City, Batangas	
09:45-10:00	Morning Coffee and Snacks	
	<p>Session 1: Courtesy Call and Briefing with Batangas Provincial Government Environment and Natural Resources Office (PGENRO): The Balayan Bay Experience</p>	
10:00-10:30	Presentation 1: PGENRO Introduction to USAID/ECOFISH	PGENRO
10:30-11:00	<p>Presentation 2: Discussion of Seasonal Closure in Balayan Bay - Stakeholder Engagement</p> <p><u>Session Description:</u></p> <p>The incumbent Governor of the Province of Batangas has been a strong supporter of biodiversity and fisheries management initiatives in Batangas.</p>	Mr. Jun Nervadez

Time	Activity	Presenter/ Facilitator
	<p>The PGENRO is the provincial office mandated to plan, implement and monitor these initiatives. The ongoing USAID ECOFISH Project is being hosted by the PGENRO, which provides political and coordination support for the project to ensure buy-in and active participation by the coastal municipalities in the province of Batangas. The Office played a crucial role in the planning, consultations, roll-out, enforcement and monitoring of the recently implemented seasonal closure for small pelagic fisheries in Balayan Bay. This session will introduce the participants to the mandate of the PGENRO in relation to fisheries management and biodiversity conservation in the province of Batangas and to PGENRO's role in the USAID ECOFISH Project. The coordinator of the USAID ECOFISH Project for the Verde Island Passage will share with the participants the experience, challenges, lessons learned and future plans for the seasonal closure initiative implemented in Balayan Bay.</p> <p>Learning Objectives</p> <ul style="list-style-type: none"> To share with the participants a local perspective on the experience, challenges, and lessons learned resulting from the stakeholder engagement process with local fisherfolk, implementation, and enforcement and monitoring of a seasonal closure for small pelagic fisheries. 	
11:00-11:30	Questions and Discussion	
11:30-12:30	Lunch Break	
12:30-13:45	Travel to Mabini, Batangas	
13:45-14:00	<p style="text-align: center;">Courtesy Call at the Office of the Municipal Mayor of Mabini</p> <p style="text-align: center;">Session 2: Local Laws on Fisheries and Marine Conservation in Mabini, Batangas</p> <p>Presentation on Municipal Ordinances supporting marine conservation and fisheries management</p> <p>Session Description:</p>	MAO, Tourism Officer
14:00-14:45	<p>The Municipality of Mabini has become a model of successful community-based marine conservation, fisheries management, and sustainable financing from local conservation fees. The municipality has won several awards for best-managed marine sanctuaries and has played a leadership role in scaling-up community-based enforcement through the Bantay Dagat from a municipal-wide program to a provincial-wide network of Bantay Dagat. Representatives from the Municipal Office and Municipal Council will share with the participants Municipal Ordinances supporting marine conservation and fisheries management. These Ordinances provide the legal basis for the creation, operations and deputization of the Bantay Dagat, the collection of Conservation Fees from divers/tourists, mandate and work of the Coastal</p>	MAO, Tourism Officer, Municipal Councilor

Time	Activity	Presenter/ Facilitator
	Resource Management Board, and creation of local MPAs (marine sanctuaries). Learning Objectives: ✍ To share with participants Mabini's experiences, successes, challenges, and lessons learned for community-based marine conservation and fisheries management from a municipal-level perspective; ✍ Provide the participants an example of sustainable financing for community-based marine conservation and fishery law enforcement generated from tourism that has been institutionalized at the municipal level.	
14:45-15:00	Questions and Discussions	
15:00-15:30	Travel to Bontoc in Batangas Bed & Breakfast	
15:30-18:00	Free Time	
	Dinner and Socials with Local Stakeholders	
18:00-20:00	<u>Session Description:</u> Dinner interaction with local government officials and members of Bantay Dagat of Mabini and Tingloy Municipalities. This activity is envisioned to provide an informal setting for the participants to raise additional questions and get clarification on local government-led and community-based conservation and fisheries management initiatives.	Romy Trono, Carlie Labaria

Day 3 May 27, 2015

Time	Activity	Presenter/ Facilitator
05:00-05:45	Travel to Bauan Fish Landing	
	Breakfast Interaction with Bauan Fisherfolk and Visit to Fish Landing Site	
05:45-09:30	<u>Session Description:</u> Bauan is one of the five coastal municipalities in Balayan Bay, Batangas that participated in and supported the seasonal closure in Balayan Bay. The study tour participants will be given a chance to observe and experience actual fish landing activities in one of the Barangays in Bauan. The local Barangay Captain (who also owns a commercial fishing boat), together with his family and crew, will help organize the activity and prepare a local breakfast in which fish (small pelagics) that have been caught from the previous night's fishing operations will be served. This activity will allow the participants to interact with the local fishing community, learn how they participated in and supported the seasonal closure, and understand their perceptions of the	Romy Trono, Carlie Labaria, Barangay Captain Dolor

Time	Activity	Presenter/ Facilitator
	<p>impacts of the intervention on their community and the local fish stocks.</p> <p>Learning Objective:</p> <ul style="list-style-type: none"> To observe and experience first-hand actual fish landing activities in one of the Barangays in Bauan and to interact with a local fishing community to understand their perspectives on seasonal closure. 	
9:30-10:30	Travel Back to Mabini	
10:30-15:30	<p>Field Exposure in Mabini and Tingloy Municipal Waters</p> <p><u>Session Description:</u></p> <p>The participants will board local outriggered boats used by divers/tourists in Mabini and Tingloy municipalities. Several local enforcement boats that are used by Bantay Dagat teams from the two municipalities will guide the participants' boats around their municipal waters while pointing out sites of special interest, such as marine sanctuaries and patrol areas. A picnic lunch will be set up; over lunch, the Chairs of the two Bantay Dagat teams will informally share with the participants their personal experiences, challenges and learnings from many years of working as members of the local Bantay Dagat groups. The participants will also be given an opportunity to ask questions and solicit additional information.</p> <p>Learning Objectives</p> <ul style="list-style-type: none"> Understand organizational and operational structures of local Bantay Dagat groups; Hear real-life stories from members of Bantay Dagat - their personal experiences, risks and successes, frustrations and challenges as well as their motivations and incentives as local Bantay Dagat. 	Chairs of Bantay Dagat, Tourism Officer, MAO of Mabini
15:30-17:30	<p>Free Time/ Opportunity for SCUBA Diving and Snorkeling</p> <p><u>Session Description:</u></p> <p>Mabini and Tingloy are located within the Verde Island Passage (VIP). Marine scientists from around the world have published scientific articles recognizing the VIP as the center of marine shore fish and marine invertebrate diversity on the planet. The healthy and productive coral reefs as well as the diverse marine ecosystems in the VIP provide habitat, spawning, and nursery ground for both commercially important demersal as well as small pelagic fish species. The participants will be given an opportunity to observe this globally significant diversity through snorkeling and SCUBA diving. Local guides, professional Divemasters and diving instructors will be on hand to assist the participants and ensure that they will</p>	



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	<p>impacts of the intervention on their community and the local fish stocks.</p> <p>Learning Objective:</p> <ul style="list-style-type: none"> To observe and experience first-hand actual fish landing activities in one of the Barangays in Bauan and to interact with a local fishing community to understand their perspectives on seasonal closure. 	
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15:30-17:30		

Time	Activity	Presenter/ Facilitator
	have a safe and memorable snorkeling and SCUBA diving experience	
17:30-18:00	Back to Bontoc in Batangas Bed & Breakfast	
18:00-20:30	Dinner and Free Time for Rest and Recreation	

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Day 4 May 28, 2015

Time	Activity	Presenter/ Facilitator
08:00-09:00	Breakfast	
09:00-09:15	<p>Session 1: GEF/ UNDP- UNOPS Sulu- Celebes Sea Sustainable Fisheries Management Project (SCSSFMP)</p> <p><u>Session Description:</u></p> <p>Many species caught in small pelagic fisheries have life histories that involve distant egg and larval dispersals and migratory movements. Genetic studies of sardines (<i>Sardinella lemuru</i>) in the Sulu-Celebes Sea Large Marine Ecosystem (SCS-LME) have determined that the sardine population within the LME belong to one genetic stock and is in fact shared among the three neighboring countries of Indonesia, Malaysia and Philippines. This scientific finding became the impetus for the three countries to work together to reverse the declining trend in the local populations of sardines in the SCS-LME. Romy Trono, who also served as the Regional Project Manager for the recently completed GEF/UNDP-UNOPS Sulu-Celebes Sea Sustainable Fisheries Management Project (SCSSFMP), will share the experiences, challenges, and learnings from a Transboundary (Indonesia, Malaysia, Philippines) Fisheries Management Project with a focus on small pelagic (sardines) fisheries.</p> <p><u>Learning Objective:</u></p> <ul style="list-style-type: none"> • To acquire knowledge on the design and implementation of a transboundary fisheries management project, e.g., Transboundary Diagnostic Analysis (TDA) and formulation of a Regional Strategic Action Program (RSAP), with focus on small pelagic fisheries. 	Romy Trono
09:15-09:30	<p>Session 2: Working with NGOs on Coastal and Marine Law Enforcement</p> <p><u>Session Description:</u></p> <p>In an informal setting, Romy Trono will share his almost 20 years of experience as Country Director for WWF-Philippines (1993-2003)</p>	Romy Trono

Time	Activity	Presenter/ Facilitator
	<p>and Conservation International (2003-2012) in developing partnerships and working with national government agencies and local government units on biodiversity conservation, establishment of national protected areas and local marine sanctuaries, and enforcement initiatives (national and community-based). The session will provide an opportunity for the participants to ask Romy Trono questions about these partnerships and his work more broadly.</p> <p>Learning Objectives:</p> <ul style="list-style-type: none"> ✍ To learn from the experience of NGOs about how partnerships and effective collaboration can be developed and employed as a strategy to achieve successful biodiversity conservation and effective fisheries management/enforcement. 	 
09:30-10:00	Questions and Discussions	
10:00-10:20	<p>Session 3: Community-based Enforcement and Prosecution</p> <p><u>Session Description:</u></p> <p>An environmental lawyer who has worked with NGOs will share his experience on how NGOs have supported community-based enforcement and prosecution and played an important role in building local capacity for enforcement of environmental and fishery laws.</p> <p>Learning Objective:</p> <ul style="list-style-type: none"> • To provide examples of training topics for capacity building (e.g., paralegal training, fish warden and fish examiner, basic law enforcement, advanced law enforcement) and explain the process of deputization by BFAR and Municipal Mayors, enforcement strategies, filing of cases, and prosecution. 	Atty. Mario Maderazo
10:20-11:00	Questions and Discussions	
11:00-11:45	<p>Session 4: Interaction with the Batangas Coastal Resources Management Foundation (BCRMF)</p> <p><u>Session Description:</u></p> <p>The corporate sector is an important stakeholder and has provided significant support for marine biodiversity and fisheries management in the province of Batangas. First Gen Corp (FGEN), through its subsidiary First Gas Power Corp (FGPC), has aided marine conservation and management initiatives in Batangas for more than a decade. FGPC is an active member of the Batangas Coastal</p>	Ramon Araneta, Romy Trono

Time	Activity	Presenter/ Facilitator
	<p>Resources Management Foundation (BCRMF), which is a consortium of private corporations operating within Batangas Bay. The Foundation has supported initiatives such as large-scale marine biodiversity corridor planning for the VIP, Information and Communication Campaigns, support to municipalities and provinces for community-based enforcement, organization and operations of networks of Bantay Dagat, incentive awards for local marine sanctuaries, establishment of a seasonal closure for small pelagic fisheries, etc. During this session, a representative from one of the companies in the consortium will present to the participants on the contributions and support they have provided to the province of Batangas and coastal municipalities in relation to fisheries management and marine conservation.</p> <p>Learning Objective:</p> <ul style="list-style-type: none"> To increase the participants' awareness of opportunities for engagement with the corporate sector on marine conservation and fisheries management. 	
11:45-12:00	Questions and Discussions	
12:00-13:30	Lunch Break	
13:30-15:00	<p>Session 5: Wrap-up Discussion / Next Steps (Part I)</p> <p>Session Description:</p> <p>First of two sessions to draw out participants' insights and lessons learned from the study tour and to start planning an echo strategy for communicating to partners and stakeholders in Ghana.</p>	<p>Kofi Agbogah, Patricia Mensah, Romy Trono, Carlie Labaria, Tess Zakaras</p>
15:00-18:00	Free Time / Local Activity	
18:00-19:00	Dinner	



Day 5 May 29, 2015

Time	Activity	Presenter/ Facilitator
07:00-08:00	Breakfast	
08:00-10:00	Travel to Calatagan	
10:00-12:30	<p>Session 1: Observation and Interaction with Women's Group Involved in Fish Processing in Calatagan, Batangas</p> <p>Session Description:</p>	

Time	Activity	Presenter/ Facilitator
	<p>Calatagan is also one of the five coastal municipalities that participated in the seasonal closure in Balayan Bay. The municipality has been actively involved in numerous marine conservation and fisheries management initiatives in Batangas province. Recently, the municipality has been a recipient of funding support for community-based livelihood projects, including processing of small pelagic fishes caught by both commercial and municipal fishers. Women are the main beneficiaries of these livelihood activities. The study tour participants will have an opportunity to observe these livelihood activities and interact with the members of the women's group.</p>	
12:30-14:00	Lunch with Calatagan Municipal Environment and Natural Resources Officer (MENRO) and Representatives of Women's Group	
14:00-18:30	Travel to Manila via Tagaytay-Taal Volcano Lake/ Check-in at Diamond Hotel in Manila	
18:30-21:00	Dinner and Free Time	

**Day 6
May 30, 2015**

Time	Activity	Presenter/ Facilitator
09:00-09:20	<p>Session I: ICT Partnerships of ECOFISH (700DALOY and TVWS)</p> <p>Session Description:</p> <p>The USAID-ECOFISH Project has brokered a number of mobile technology partnerships with major ICT companies and other resource partners to demonstrate and deploy innovative models for using technology to improve fisheries management at a national and/or local level. These include the "TV White Space supported Fisherfolk Registration" and "700DALOY" public-private partnerships.</p> <p>Learning Objectives:</p> <ul style="list-style-type: none"> Identify opportunities for building win-win partnerships in support of sustainable fisheries; Learn best practice in leveraging technology solutions for sustainable fisheries. 	Lawrence Ang
09:20-09:50	Questions and Discussions	

Time	Activity	Presenter/ Facilitator
09:50-12:30	<p>Session 2: Wrap-up Discussion / Next Steps (Part 2)</p> <p><u>Session Description:</u></p> <p>Final session for drawing out participants' insights and lessons learned from the study tour; planning next steps, and developing a communication strategy.</p>	<p>Kofi Agbogah, Patricia Mensah, Romy Trono, Carlie Labaria, Tess Zakaras</p>
12:30-14:30	<p>Closing Lunch and Fellowship (USAID, BFAR, NFRDI, ECOFISH)</p>	
14:30 -	<p>Free Time in Manila <i>(Restaurant and Shopping Suggestions to Be Provided)</i></p>	