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A large tuna fish is being held up by a person wearing a green long-sleeved shirt on a wooden pier. The fish is silver and blue, with a large eye. In the background, several people are standing on the pier, and a blue boat is visible in the water. The scene is set in a harbor area with palm trees and buildings in the distance.

# Stakeholders Consultation Workshop on Finding Solutions to Saving Juvenile Tuna

General Santos City, Philippines

By Jose Ingles



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Greenleaf Hotel, General Santos City, Philippines

10 September 2013

Jose Ingles



## List of Abbreviations

BAS-DA	Bureau of Agricultural Statistics, Department of Agriculture
BET	Bigeye Tuna ( <i>Thunnus obesus</i> )
BFAR	Bureau of Fisheries and Aquatic Resources
CMM	Conservation and Management Measure
DOST	Department of Science and Technology
EEZ	Exclusive Economic Zone of the Philippines
FAD	Fish Aggregating Device
FAO	Fisheries Administrative Order
FIP	Fisheries Improvement Project
GEF	Global Environment Facility
MSC	Marine Stewardship Council
NC-WCPFC	Northern Committee of the WCPFC
NGO	Non-Government Organizations
NPBF	North Pacific Bluefin Tuna ( <i>Thunnus orientalis</i> )
NSAP	National Stock Assessment Program
PES	Payment for Ecosystem Service
PPTST	Partnership Program Towards Sustainable Tuna
SFFAI	Socksargen Fishing Federation and Allied Industries Inc.
SKJ	Skipjack Tuna ( <i>Katsuwonus pelamis</i> )
YFT	Yellowfin Tuna ( <i>Thunnus albacares</i> )
WCPFC	Western and Central Pacific Fisheries Council
WPEA	West Pacific East Asian Project
WWF	World Wide Fund for Nature

## Background

The Philippines continues to be major fishing grounds for tuna. Filipino fishers continue to reap enormous benefits from harvesting oceanic (skipjack, yellowfin, bigeye, and albacore) and neritic (bonitos, frigate, bullet, and longtail) tuna species. Tuna fisheries are a major socio-economic driver, providing livelihood and income to people and the country through export revenues. In 2012, the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) valued the Philippine tuna industry at over 12 billion pesos.

As the demand for tuna grew in the early 1980s, fishing fleet sizes expanded to a point where catch rates began to fall. This was first observed in traditional fishing grounds such as Sarangani Bay and Moro Gulf. The sequential depletion of such fishing grounds extended all the way to the edge of the country's Exclusive Economic Zone (EEZ), and eventually spilled into the waters of neighboring countries. This expansion of fishing grounds allowed the overall catch to exponentially increase (which many people see), but caused catch rates in the immediate near-shore and offshore waters to plummet (which many of us know, but do not see).

The marked improvements in fishing technology: stronger, lighter, and larger nets, as well as fish detection devices, allowed boats to fish further and made fishing highly efficient. The use of Fish Aggregating Devices (FADs), adopted for pelagic fishing, contributed much to this efficiency. This translated to lower operating cost in lieu of searching for fish schools. Since then, the use of anchored FADs has become synonymous to tuna fishing in this country.

## Juvenile Tuna Catch: A Critical Problem That Needs Our Attention

FADs are efficient devices that herd tuna of all sizes. Unfortunately, the country is also a major tuna spawning ground. This is evidenced by the ubiquitous occurrence of small, highly immature tuna in catches, which end up in wet markets. Setting numerous FADs on tuna spawning areas is a very undesirable situation because FADs are efficient structures that attract fish, including juvenile yellowfin (YFT) and bigeye (BET) tuna. These juveniles are indiscriminately caught in large volumes when surround nets are used, particularly during the peak times when they become vulnerable to the nets. The unregulated catch of

juvenile tuna is detrimental to the future of tuna stocks and ultimately, to the food and livelihood of millions of people, because it cuts the ability of the species to grow and mature into breeding adults.

Telling fishers not to use FADs is likewise not desirable because many people's livelihood, income, and food are dependent on this fishery at present.

## Finding Solutions Together

Given these twin constraints, WWF in partnership with the Socksargen Federation of Fishing and Allied Industries, Inc. (SFFAI), organized a stakeholder consultation workshop to provide tuna stakeholders with better information on the profile of juvenile tuna in the Philippines, and discuss innovative solutions on how to create a balance between maintaining our source of food and livelihood on one hand, and ensuring the availability of tuna for tomorrow, on the other.

## Workshop Objectives

This consultation workshop aimed to:

1. Inform stakeholders of the most current profile of juvenile tuna catch in the Philippines and the need to manage them to support the tuna fishery;
2. Present potential and innovative ideas, create a debate that will lead to solutions to address critical issues; and
3. Get the support and feedback of stakeholders on the different concepts presented and secure their cooperation in finding solutions to the juvenile tuna issue.

## Workshop Program

A one-day workshop was held immediately after the Tuna Congress in General Santos City, Philippines on September 10, 2013. The meeting brought together a total of 65 participants from academia, government, purse seine and handline sectors, and NGOs (**Appendix 1: Participants list**).

The day's event was divided into three sessions:

1. The first presentation of the session shared information profiling the status of juvenile tuna in the Philippines and was followed by a presentation on results from the modeling of possible cooperative arrangements between tuna fishing sectors. This modeling examined who will be the 'gainers' and the 'losers' between the purse seine and handline and between purse seine and the longline sectors respectively under cooperative and non-cooperative scenarios.
2. The second section focused on possible solutions to addressing the high fishing mortality of juvenile skipjack (SKJ), YFT, and BET, namely: protected areas approaches, payments for ecosystems services (PES), and ranching of juveniles. Within the protected area approach, three concepts were presented on spatial protection and integrated zoning. This second presentation introduced the concept of PES and its potential application to achieving a sustainable financing outcome for the protection of juvenile tuna. The final presentation in this section introduced an out-of-the box idea on the feasibility of temporary holding, or "ranching" of juvenile tuna for grow-out to larger sizes which could reduce fishing mortality in the early stages of the tuna.
3. The third session was dedicated to questions and answers and discussions. A plenary group was formed for each of the presentations. Facilitated by a colleague from Greenpeace Philippines, impressions and questions were raised on the different papers presented. The latter part of this session saw stakeholders choose a working group that presented concepts they preferred to build on and contribute to. These working groups explored in more detail each of these three concepts in terms of feasibility and practicability.

## Workshop Summary Outcomes

The stakeholder consultation has:

1. Informed the 65 participants coming from different tuna sectors on the profile and issue pertaining to juvenile tuna, the scientific definition of tuna, the volume harvested, where and when these are caught, and the biological and economic consequences of harvesting too many young tuna;

2. Shared information and presented opinions and ideas to better manage tuna in selected key fishing grounds located in Celebes Sea, Mindoro Occidental waters, and Lagonoy Gulf;
3. Corrected some wrong perceptions about basic fisheries management principles on:
  - a. **The definition of juvenile tuna** and the size and weight of first maturity of the three species based on the biology of each. Many believed that YFT and BET weighing 10 kg or less and SKJ weighing 0.5 kg are juveniles. The workshop informed the participants that using Philippine studies, the weights at first maturity are – YFT = ~20 kg; BET = 22 kg, and SKJ = 2 kg, pertaining to fork lengths of 100 cm, 105 cm and 45 cm, respectively.
  - b. **The reality of traditional handline fishing.** Despite this simple fishing method being small-scale and catching only one fish at a time, it CAN overfish a fishing ground if the numbers of gears or fishers are unregulated. As a basic rule, the fishery taking into consideration all the fishing gears catching the fish, should not harvest more than what the population could replenish.
  - c. **The difference between the phrase “overfished” and “overfishing.”** It was clarified that the two terms are not the same, that overfishing if not regulated in time could lead to the overfished state of a fishery.
4. Agreed to create two Working Groups that will meet and develop an action plan. These are:
  - a. **Working Group on Celebes Sea Zoning** – with seven participants that volunteered to meet and develop a roadmap for the recovery of Celebes Sea as the premier tuna fishing ground of the country. The members who volunteered included representatives from the tuna federation, one buyer, one handline boat owner, one from the government, two from academia, and two from the NGO sector.
  - b. **Working Group on Payment for Ecosystem Service** – with eight initial members that volunteered, this group will discuss the feasibility of applying PES as a potential solution to the juvenile tuna fishing problem.

# Workshop Program

## Finding Solutions to Saving Juvenile Tuna

Greenleaf Hotel, General Santos City, September 10, 2013

### **Workshop Opening (09:00-09:30)**

- a. Opening Remarks: Bureau of Fisheries and Aquatic Resources: BFAR
- b. Opening Remarks: Socksargen Fishing Federation and Allied Industries: SFFAI
- c. Overview and Objectives of the Seminar/Workshop: WWF

### **Session I: Setting the Scene (9:30-10:55)**

- a. Overview of Juveniles in Tuna Fisheries (09:30 – 10:10) – J. Ingles/ N. Barut
- b. Can Cooperative Arrangement Work for Juvenile Tuna? (10:10-10:30) - M. Bailey

### **Reactions from the Stakeholders (10:30-11:00); Coffee Break (10:30-11:00)**

### **Session II: Some Potential Solutions (11:00-12:30)**

- a. Area-based Protection for Juvenile Tuna in Key Sites
  - Creation of Special Management Area (Mindoro and Lagonoy fishing grounds) – J. Palma/ J. Binondo (30 mins)
  - Zoning of the Celebes Sea for Sectoral Use – J. Ingles (10 mins)
  - Protecting the North Pacific Bluefin Tuna (NPBF) – J. Ingles (10 mins)
- b. How To Pay for Juvenile Tuna Management Improvement - K. Short / J. Ingles /A. Trinidad (20 mins)
- c. Can “Temporary Holding” Reduce Fishing Mortality of Yellowfin Tuna? – R. Babaran (20 mins)

### **Lunch (12:30 - 2:00)**



## Session III: Plenary Discussions – Q &A (14:00-15:15)

### Reactions on the Approaches/ Solutions

- a. Protected Area Approach
  - Creation of Special Management Area for Lagonoy & Mindoro
  - Zoning of Celebes Sea for Sectoral Use
  - Protected Area North East of Philippines EEZ North Pacific Bluefin Tuna
- b. Innovative Financial Mechanism using Payment for Environmental Services (PES)
  - How to Pay for Juvenile Tuna Management using PES
- c. Other Approaches
  - Can Temporary Holding of Juvenile Yellowfin and Bigeye Tuna in Coastal Cages Reduce Fishing Mortality?

### Afternoon Tea / Coffee Break (3:15-3:30)

### Getting Stakeholders' Support (15:30-16:30)

Agreements for cooperation and next steps

## Workshop Minutes

Rapporteurs: Stella Libre, Frazen Tolentino, and Edison Macusi

Report prepared by: Jose Ingles

## Opening Program

The meeting started at 9:10 in the morning. Vince Cinces of Greenpeace facilitated the event. He called on Jose Ingles of the WWF Coral Triangle Program, the convener, to open the consultation. Ingles welcomed and thanked the participants for taking time to participate in this event. He provided a brief overview for this meeting and what the objectives are for this gathering.

The opening remarks were delivered by BFAR Regional Director 12, Ambutong Pautong. His message took note of the plenary speaker during the 15<sup>th</sup> Tuna Congress that described the history of tuna fisheries in the region and the productivity of tuna in Sarangani Bay, Moro Gulf, and Celebes Sea in the 1970's where large tuna were as abundant as the juvenile ones, where fishing for large tuna was simply a 30-minute paddle away, and where fishers

simply caught tuna that were pre-ordered or based on potential numbers that can be absorbed by the market for a day. The huge market demand in Japan followed by the US and EU created a race to fish and get rich, which eventually led to the current condition of our fishing grounds. He thanked the organizers for initiating this consultation on how to best manage juvenile tuna, a long overdue issue that must be confronted directly.

The program then called on Rosanna Bernadette Contreras, Director of SFFAII, to deliver the opening remarks on behalf of the Tuna Federation. She informed the audience of the background of this stakeholder consultation workshop wherein she approached the WWF Coral Triangle Program for potential solutions to the social and economic dislocation of purse seine fishers and vessel owners arising from the compliance to the Western Central Pacific Fisheries Commission (WCPFC) conservation and management measure on the annual ban of fishing around FADs. WWF suggested that since the annual ban to fish on FADs was designed to reduce fishing mortality of juvenile tuna, particularly of YFT and BET, solutions need to be found to support the social and economic costs associated with compliance to this measure. One of the potential solutions suggested was to explore the feasibility of developing financing schemes using the PES approach.

Ms. Contreras followed her opening remarks with a presentation on the social and economic costs of complying with the three-month (now four months) FAD ban imposed on the 36 Philippine-flagged purse seine vessels operating in the high seas. In her presentation, the opportunity cost during this ban period is estimated at 13 thousand metric tons valued at USD 26.9 million. The halting of fishing during this period is equivalent to a potential loss of processing capacity of about 18% - this translates to the full stoppage of two of the six cannery operations based in General Santos. The direct loss of livelihood is estimated at 2,160 crew members or about 10 thousand households. Her presentation is attached as **Appendix 2: Social and Economic Costs of FAD Ban Compliance.**

The program then moved to the first session. The following are brief descriptions of each session.

## Session I: Providing Key Information and Need for Cooperation

Jose Ingles made a presentation on the profile of juvenile tuna of the Philippines. Key highlights of this presentation include:

1. Clarification on the scientific definition of juvenile tuna for SKJ, YFT, and BET species, based on length frequency measurements and gonadal maturity analysis of the species that were caught in Philippine waters by the National Stock Assessment Program (NSAP) of BFAR.
2. A fairly accurate estimate on juvenile tuna production of the country using 2010 data: 192 thousand metric tons, representing ~90% of the total tuna harvest from Philippine waters. The production figures were based on catch estimates of the Global Environment Facility (GEF) West Pacific and East Asia (WPEA) Project of the WCPFC.
3. Analysis of the domestic annual tuna production of the country wherein the total tuna catch of the country declined by 44% and with this, a proportional decline in juvenile catch as well from 2008 to 2010.
4. All major tuna gears (purse seine, ring net, handline, hook and line, drift gillnet, and troll) save for handline using large hooks, catch substantial quantities of juveniles of the three major market species. The sizes ranged from 20cm – 50cm in length and 0.5-3.0 kg in weight.
5. Juvenile tuna are ubiquitous in the country and present all year round. This is brought about by all-year spawning, punctuated by two peaks seasons per year.
6. Available literature suggest very fast growth rates, most of the juvenile SKJ, YFT, and BET caught are between 1-6 months of age with sizes between 0.05-3.0kg. Action points were listed on next steps to address the juvenile tuna issue in the country. Ingles' presentation is attached as **Appendix 3: What You Need to Know about Juvenile Tuna in the Philippines.**

Ms. Megan Bailey, a post doctoral fellow from the University of Wageningen, Netherlands, made her presentation entitled “Can Cooperation Work for Juvenile Tuna?” She presented the results of a modeling study to determine the scenarios of cooperative and non-cooperative arrangements between the purse seine, longline, and handline sectors. The results of the modeling showed that benefits arising from cooperation between fishing sectors may translate into more fish in the ocean, higher prices of fish, and higher net revenues across the region. This means that by allowing more juvenile fish to grow to larger

sizes, overall catch will be reduced. Consequently, it will bring greater benefits to fishers as the price of tuna increase with size, bringing with it higher net revenues across the region. Under cooperative arrangements, while both purse seine and handline will benefit, this will translate to lesser income from the purse seine. Under the non-cooperation or the business-as-usual-scenario, the purse seine sector will continue to reap most of the benefits. For cooperation to work, challenges such as sharing arrangements need to be agreed upon between these sectors. Bailey's presentation is presented as **Appendix 4: Can Cooperation Work for Juvenile Tuna?**

## Session II: Thinking of Solutions

Three divergent approaches to solving the juvenile tuna problem were presented under this session: the use of managed/protected areas approach; the potential use of PES; and the use of temporary holding to minimize juvenile mortality.

Jose Angelito Palma of WWF-Philippines presented the Partnership Project Towards Sustainable Tuna (PPTST), a fishery improvement project (FIP) that seeks to move tuna handline fisheries in two Philippines sites towards a more sustainable path in order for this fishery to qualify for the standards of the Marine Stewardship Council (MSC). Started over two years ago, this WWF project strives to make changes in the water by working with stakeholders to improve the management of tuna fisheries. The approach is to delineate and declare the fishing grounds of these two FIP sites as a "special management area" where an appropriate tuna management plan containing directed conservation measures will be applied, tested, and further refined.

Heiko Seilert, the overall project manager of PPTST, presented biological evidence to prove that Lagonoy Gulf is a key spawning area. This presentation proposed to close the area to commercial fishing operation, particularly in Lagonoy Gulf that includes the two entrances of the Gulf. With the few, small-scale operation of commercial vessels within the gulf and with very limited legal area for operation, closing the gulf is the most practical and presumably the most effective conservation measure. The presentations of J. Palma and H. Seilert are attached as **Appendix 4a: The Partnership Project towards Sustainable Tuna and Appendix 4b: Is Lagonoy Gulf A Special Fishing Ground for Yellowfin Tuna?**



Jose Ingles presented two proposals that have been submitted a couple of years earlier to the BFAR for consideration. The first is a proposal to “zone” Celebes Sea among the two tuna fishing sectors. The “zoning” term means to provide distinct fishing grounds within Celebes Sea and Moro Gulf between the purse seine and the handline sectors. Given the current productivity of just 25% from 1990 levels, the presentation solicited the support of the participants to agree to work on the solution to do a rebuilding plan for the tuna resources of this primordial fishing ground. A couple of ideas on how to “zone” were thrown into the presentation for discussion and debate. Lastly, a proposal was made to create a “Working Group” that will initiate the discussion of rebuilding a strategy for the tuna population in Celebes Sea and Moro Gulf. The presentation is attached as **Appendix 5a: A Proposal to “Zone” Celebes (Sulawesi) Sea among Tuna Fishing Sectors.**

The second proposal is to create a spawning protected area for the NPBT in the Northeast Exclusive Economic Zone of the Philippines. Here, Ingles shared information that the country is in a unique position to declare part of the only spawning area under Philippine territory as a protected area as no Filipino stakeholder will be negatively impacted by such a conservation measure. The stock assessment result made public last year estimated the remaining biomass of this species at only 4% of the original biomass and therefore classified as critically endangered. In the most recent Northern Committee (NC-WCPFC) meeting, the major fishing nations targeting this species agreed to reduce the juvenile take and to develop a rebuilding plan. Putting part of its spawning area under the Philippine jurisdiction will contribute significantly to reducing juvenile tuna mortality of this species, since illegal fishing using longlines are known to occur in the area from March to June each year. The presentation is attached as **Appendix 5b: A Proposal to Create a Spawning Protected Area for the North Pacific Bluefin Tuna in the Northeast EEZ of the Philippines.**

Ms. Abbie Trinidad made an introductory lecture about PES as a policy instrument for tuna management, defined in layman terms what it is, discussed and explained the five elements of what constitutes a PES deal, and the process involved. Her presentation included the elucidation of what is ecosystem service and what is not. She described that PES is one of the novel ways of solving an environmental problem using an economic solution. She described in detail and provided examples of what a real PES is, what are PES-like instruments, and how non-PESable scenarios look like (such as when the problem is more of an enforcement problem than an environmental problem). The presentation is attached

## **in Appendix 6: Coastal and Resources Management in the Coral Triangle- SE Asia.**

Ric Babaran presented an out-of-the-box idea on how to reduce juvenile tuna mortality. This presentation is more of an academic exercise designed to raise debate and discussion on potential solutions to reducing the mortality of juvenile tuna. The idea behind this proposal is to provide greater value for fish—by letting them grow to bigger sizes and selling them at much higher prices. His proposal called for herding the small-sized tuna in floating cages, allow them to grow over several months, to reduce juvenile mortality. He also presented challenges around his proposal. His presentation is attached as **Appendix 7: “Can Temporary Holding of Juvenile Yellowfin and Bigeye Tuna in Coastal Cages Reduce Fishing Mortality?”**

## **Session III: Summary of Discussions and Outcomes**

### **A. Profile of Juvenile Tuna**

- Clarification was made on the high BET figures from statistics. There are two statistics available, one from the Bureau of Agricultural Statistics (BAS) and one from the National Stock Assessment Program (NSAP). Data used in the presentation and estimates of juvenile tuna were from database of NSAP, based on actual sampling data. Record of high BET data stem from differences in sampling methodology used by BAS-DA. In the last two years, this has been corrected and reconciled with NSAP data. The WCPFC uses only NSAP data in their regular stock assessment of the three species for the Western and Central Pacific region even though the BAS is the official statistics of the country.
- Further clarification on BAS data –it simply accounts for tuna where it was landed, irrespective of where it was caught, including those by Philippine-flagged vessels operating in other countries under different fishing arrangements. NSAP started the validation process and the result, which was presented at the 15<sup>th</sup> Tuna Congress, showed only 20,000 metric tons of tuna was caught from inshore waters.
- Clarification on the high catch records presented under the category of “Hook and Line (small)” – as presented is actually pooled data from different hook and line gears using smaller hooks, vertically used multiple hooks.

- The category “other gears” likewise showed very high percentage of juvenile take and the country needs to pay attention to this issue. The “other gears” category consists of drift gillnets, set surface gillnet, bottom set gillnet, and troll lines.
- Species misidentification of YFT and BET (juvenile stages) and longtail tunas have compromised the accuracy of statistics in the past. However, through training of enumerators with support from the GEF WPEA project, the accuracy of identification, particularly of juveniles, improved significantly.
- Given the high growth rates of juvenile tuna and the observation that YFT and BET sizes between 60-100 cm sizes disappear from catches, a question was raised whether the Philippines can still be described as a nursery ground. Both YFT and BET are ubiquitous in the Philippines until 3 kilogram sizes (0-6 months old) and then disappears from the catches. Where the missing sizes of 60-100 cm go is not fully understood although these are occasionally caught in archipelagic waters. Whether they stay below reach of fishing gears or move elsewhere is a big question. While some of these missing sizes are caught intermittently, it was explained that these are individuals that probably opted to stay within Philippine waters instead of moving elsewhere. Tagging data suggests that there is probably a net export of juvenile tuna to the Western Pacific Ocean (Lewis, pers. Comm.).
- What about SKJ? Today our SKJ catch are predominantly small and the share of mature ones range from 10-30 % but around 2-4 kg sizes. Historically, the Philippines had large SKJ in its waters. Records of the purse seine test fishing in 1974-1975 in Sulu Sea revealed all sizes present but also with large sizes of 5-7 kg free schools. The observed sizes of free SKJ schools of 60-100 tons during that survey are not uncommon.
- Spawning occurs all year round but there are distinct peaks –one or two, depending on location and strength of monsoon influencing the area, so juveniles are found in varying quantities and sizes. Management measures must take into consideration this information.
- Recent *ichthyoplankton* surveys conducted by BFAR along the Pacific seaboard and southern Philippines during the SW monsoon clearly show two major concentration of tuna eggs and larvae, one on the northern Philippines and one along the eastern coast of Mindanao in the south.

## **B. Can Cooperation Work for Juvenile Tuna?**

- Based on actual experience of the fresh and frozen (handline) sector, the impact of closure of high seas for purse seine has arguably resulted in larger and higher value fish (for the chilled and frozen sector) and appears to suggest that the results of the modeling is correct.
- In answer to the question whether the model took into consideration reactions of the export market, the answer is no, because it did not look into the macro side of things. The model also did not look into the potential losses or gains by countries and limited its view only on the sector.
- How about selective cooperation? Cooperation has to happen between and among the sectors. In the case of the Philippines, it is imperative that both purse seine/ring net and handline sectors have to agree to cooperate. In scenarios where purse seiners will have to absorb some losses from non-fishing, perhaps, the handline sector could share the benefits. Selective cooperation, such as favoring only one sector and leave out another sector cannot work. Likewise, it will be extremely difficult for countries to cooperate when each have different predominant fisheries (purse seine versus handline or longline). But cooperative agreement could work, say for Indonesia, Philippines, and Papua New Guinea, where both sectors are present and operate within these countries.
- A handline fisher asked the predictive value of the model to see what is going to happen in the future, say 5, 10, 25 years from now. Modeling into the future is not done, since anything that happens in the future has no economic value. What this model is saying is what is possible, that cooperation through sharing of benefits will benefit the tuna population and both fishing sectors, although the value of benefits for the purse seine sector will be reduced by as much as 40%.

## **C. Partnership Program towards Sustainable Tuna**

- A remark was made on how detailed the information about fisheries of the two WWF sites are and how these sites would be runaway winners of the current BFAR's vessel registration initiative called FishR that provides a prize money of 1 million pesos to the first ten municipalities with 100% boat registration.



- Given the research gaps, there was discussion around availability and access to tuna research budget. The Department of Science and Technology (DOST) has budget for research. But a case needs to be made for tuna to be included in the priority research list. During the previous administration, tuna enjoyed a high priority in research but now with the current leadership, a case needs to be built. A suggestion was made that the Tuna Federation President, Jake Lu and WWF meet with the Secretary of DOST.

***Action Point: SFFAI President Jake Lu and WWF to meet with DOST Secretary to build a case to set aside research budget for tuna***

- Concern was raised about the practice of many handline boats tied to a single FAD—a practice that could break the lines, destroy the entire FAD structures, or even drag the anchor to deeper waters.

***Action Point: Best practice on FAD construction and deployment is needed***

- A key information was shared that YFT do not take the bait during spawning times (May) and even if they do take the bait thereafter, the quality of the meat are all rejects, presumably owing to the high lactic acid associated with spawning activity. This information was confirmed by representatives of handline fishers and buyers of whole round YFT tuna. Given this biological behavior, tuna seem to be regulating themselves.
- It was reiterated that handline fishing is not the problem, it's the purse seine operating in many areas that are catching juveniles and therefore undermines the YFT tuna handline fishery. For Lagonoy Gulf, there is no need to stop handline fishing and instead, simply remove the few purse seine/ ring nets operating in the bay to allow the juveniles to grow.
- A point was made on the role of science, that with well managed sustainable fisheries, the winners are the fisheries and the people dependent on it. The problem as to how the resources are divided becomes a political question and becomes the root of many of fisheries management problems. Politicians do not follow the suggestions of science, making it difficult to really manage many of our fisheries resources.

#### **D. “Zoning” of Celebes Sea**

- Ingles opened the discussion on what could be done to manage Celebes Sea.
- The handline sector has long wished to have its own fishing ground, separate and distinct from the purse seiners. During the last Tuna Congress held on Sept 6-8, 2013, a resolution was passed to reiterate this request using FAO 224 as precedent to grant an area exclusive for tuna handline for Celebes Sea. Some of their reasons are:
  - That the use of handline cannot overfish an area. This belief has been corrected that any fishing, if left unregulated, can overfish a population.
  - That the target of handline is adult tuna with a cut-off of 10 kg. Again, biologist corrected this wrong information that tuna become mature at 20-25 kg.
- The Tuna Federation president solicited the support of WWF to have their own handline fishing area in Celebes Sea. Nobody in the room expressed any objection to this suggestion.
- On the FAD ban, BFAR explained that this holds true only for high seas, however a compatible measure including reduced depths of nets in the EEZ and archipelagic waters. The consultation process of implementing the FAD ban of 4 months in compliance with 2012-001 CMMs for the domestic purse seine and ring net fleet will involve a very long process.
- Assigning an area specific to tuna handline is a good idea, 0-15 for municipal and maybe 15-20 for larger boats. The issue is that fish could no longer find its way to areas close to shore due to the proliferation of FADs in the middle of the Celebes Sea. Even if BFAR subsidizes FADs in the municipal waters, there will be no fish. Something needs to be done with those FADs used by the purse seine and ring nets sector.
- Ingles explained that having a distinct area meant that you have a management unit where appropriate conservation measures may be implemented such as regulating juvenile catch on the surface fisheries, best practice of FAD management, or even application of rights-based management. Under a Territorial Use Rights regime, each sector is given ownership of their fishing ground and therefore is expected to help implement regulation and compliance of measures.

- The issue on the implementation of the National FAD law (FAO 244) and the proliferation of FADs was raised. BFAR clarified that the ban on FAD setting from July to September (and its extension to end of October) each year is applicable only to distant water fishing fleets (FAD 236-2). An alternative measure was applied for the domestic fleet.
- There was a consensus to form a group that will meet and discuss the next move. Participants that volunteered to be part of the Celebes Sea Working Group include:
  - Jake Lu – President of Socksargen Federation of Fishing and Allied Industries Inc.
  - John Heitz – Buyer, export of handline caught tuna
  - Raul Gonzales – Handline tuna fishing boat operator
  - Larry Digal – Sociologist, UP Mindanao Professor
  - Ronald Sumbero – Dean, College of Fisheries Mindanao State University
  - Sonny Batumbakal – Research Coordinator, Greenpeace Ph.
  - Noel Barut – Deputy Director, NFRDI- BFAR and head of the National Stock Assessment Program
  - Jose Ingles – WWF Coral Triangle Program

#### **E. Protected Area Proposal NE of Philippine EEZ for the North Pacific Bluefin Tuna**

- A remark from John Heitz suggested that BFAR should seriously consider this proposal as this will show the seriousness of the country towards conservation.
- This proposal was submitted to BFAR two years ago and is being resurrected here to gain the support of workshop participants.
- No further comments were raised on this presentation.

#### **F. Temporary Holding of Juveniles**

- This topic elicited a lot of discussion. Clarification was made by the speaker on the title change from “ranching” to “temporary holding.” This is to differentiate the culture period where ranching will rear the fish to adult sizes while “temporary holding” may allow very small fish (0.05-2.0 kg) to grow to bigger sizes.
- Participants were informed that two foreign companies a few years back came to visit and expressed interest to BFAR to undertake the feasibility of ranching YFT. BFAR never heard again from these two companies.

- Given the current prices of YFT, ranching is not economically viable. Also the engineering aspects of cage construction need to be considered.
- The size of juveniles to be raised generated a lot of debate. According to industry practice, the minimum sizes of YFT should be around 35kg (whole fish) in order to get the desired loin size specifications. Normal loin sizes are 1.36-2.27 kg apiece ( 3-5 lbs); 2.27-3.63 ( 5-8 lbs.) and 3.63-5.45 (8-12 lbs.).
- There are instances when even 10 kg sizes are considered but normally, 15kg sizes are also cut up into cubes and other frozen products.
- The very fast growth rate of YFT was a consideration in proposing this approach. It takes only 1.58 years to reach maturity size.
- The question of using fish (forage fish or trash fish) to raise tuna was likewise discussed. Taking a cue from Southern Bluefin tuna, it takes 22kg of menhaden or sardines to raise 1kg of bluefin, resulting in a lot of energy wasted. The point made was to really look for the proper fish species with no commercial value and not some species that are consumed as food.
- An opinion was raised that its best to simply manage capture fisheries properly, let juvenile tuna grow to mature sizes to maximize benefits and let nature feed them. Likened to the culture of groupers, this approach is not feasible to tuna. The biggest ranch of YFT, according to one buyer, is the Celebes Sea, and by simply investment in managing our resources effectively, we need not worry about ranching or feeding the fish.

## **G. Payment for Ecosystem Services**

- Application of PES for fisheries has yet to be seen.
- It is difficult to quantify ecosystem service for an entity or Local Government Unit but the economic benefits are easy to determine. For tuna, it is easy to appreciate because there is a price but for ecosystem service which is something abstract, it is far more difficult. Techniques are in place to determine the value of ecosystem benefits. The value however is just the second part of the process. The essential first part is getting baseline data from the scientific community.



- PES is not a novel approach. This has been applied since the 1970s.
- Using current juvenile tuna discussions, the stoppage of juvenile tuna fishing by the purse seine sector will benefit the handline sector. Will this mean that the handline sector, which are small-scale, be paying the purse seiners, which are large-scale operators? Who will pay whom? It is too early to qualify who will bear the cost. There are different configurations of buyers and sellers depending on the ecosystem service identified and the way the PES deal is structured.
- Understanding of PES was enhanced with the example of a watershed application in Bakun, Cordillera – which the Gensan local government unit acknowledged as being immediately applicable to their own case.
- Since the sellers and buyers of ecosystem services are present in this consultation meeting, could we agree to bring this forward to our governments since tuna is a transboundary, straddling stock? Under a PES deal, if the Philippines is successful in prohibiting the catch of juvenile tuna, which contributes to overall ecosystem benefits, the country/countries which benefit from catching adult tuna may be invited as parties to the PES deal, with the Philippines being the “seller” of the ecosystem service and the country/countries being the “buyers.”
- Everyone agreed that this is a beautiful concept but quite complex to operationalize. The PES elements need to be complied with and this process requires a lot of accurate data. It could take at least three years to operationalize such a concept.
- The body agreed to create another Working Group to further develop this concept. The Working Group members who volunteered include:
  - Ester Zaragoza – Philippine Council for Aquatic, Agriculture and Natural Resources Research and Development (PCAARRD), Department of Science and Technology
  - Ricardo Babaran – Vice Chancellor for Research and Development, University of the Philippines, Visayas
  - Ronald Sumbero – Dean, College of Fisheries, Mindanao State University
  - Jake Lu – President, Socksargen Fishing Federation and Allied Industries Inc.
  - Noel Barut – Deputy Director, National Fisheries Research Development Institute, BFAR

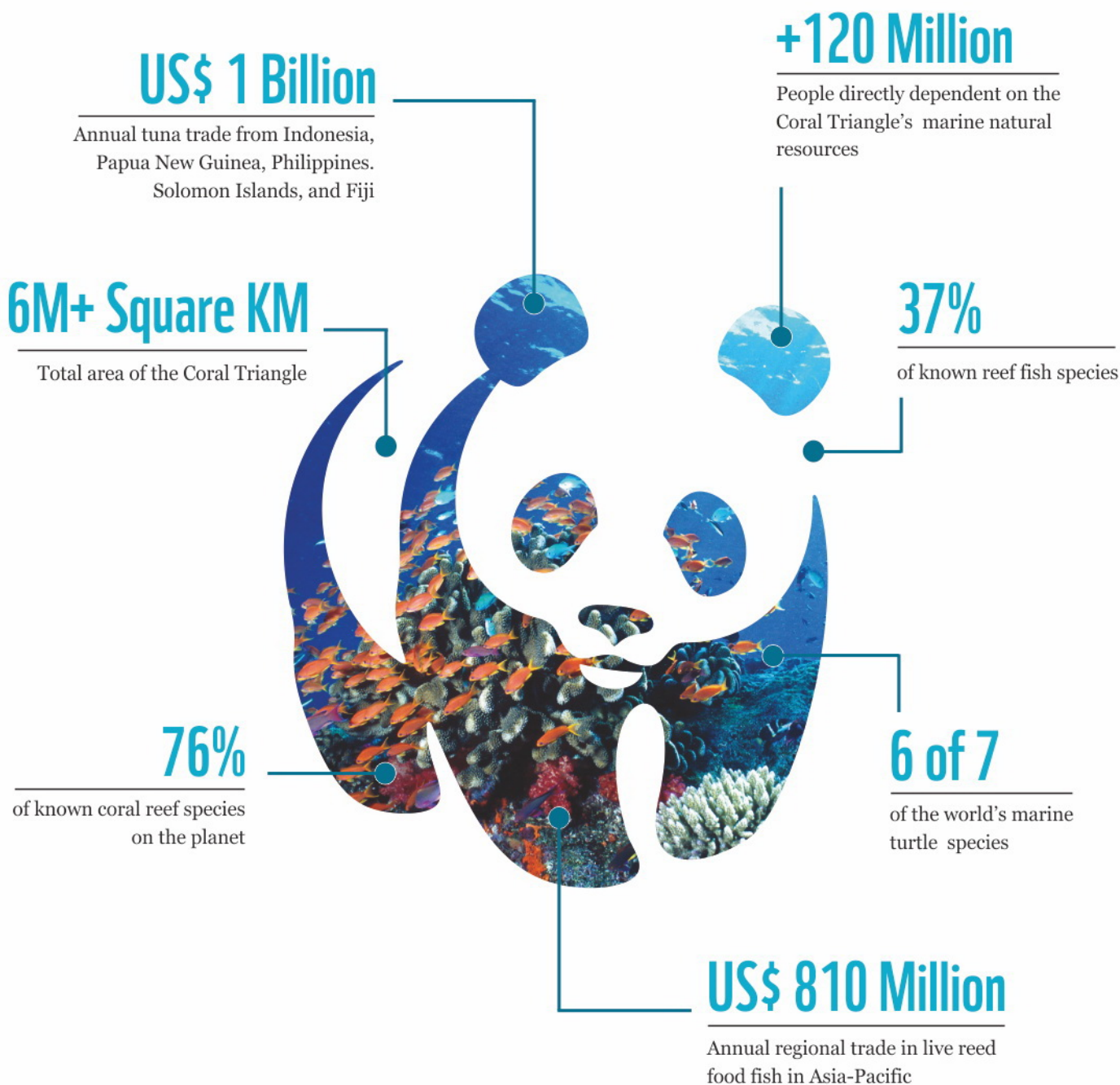
- Samuel Resma – RD Fishing Corporation
- Jose Ingles – WWF Coral Triangle Program
- Abbie Trinidad – Economist, Consultant

## **H. Meeting Adjourned**

The meeting adjourned at 4:30 pm. Ingles thanked the speakers and the participants for taking time to attend this meeting.



# The Coral Triangle in numbers



#### Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

[www.panda.org/coraltriangle](http://www.panda.org/coraltriangle)