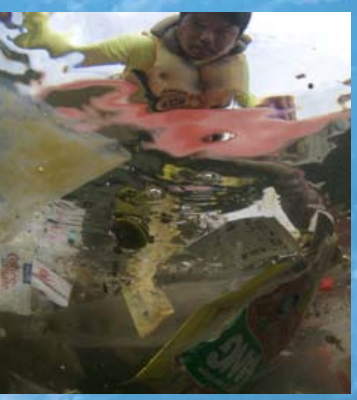
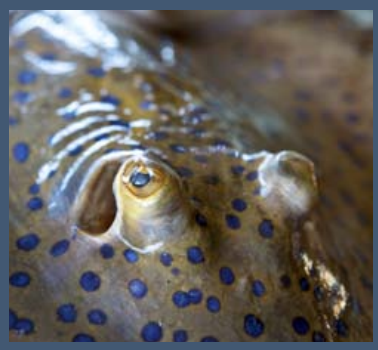
ROADMAP TO RECOVERY OF PHILIPPINE OCEANS



CONTENTS



BUKAS NA LIHAM

Pangulong BENIGNO SIMEON C. AQUINO III
Republika ng Pilipinas

Mahal naming Pangulo,

May krisis tayo sa karagatan. May mungkahing kaming Daan tungo sa Masaganang Karagatan

Ayusin ang dami ng namamalakaya sa karagatan

Sobra ang dami ng mga nangingisda – subalit kakaunti lamang ang isda. Sa katunayan, hindi natin alam ang tiyak na bilang ng mga bangkang pamalakaya. Ang huling taya natin ay 469,807 na maliliit na bangka noong taong 2000 at 6,371 komersyal na palakaya noong taong 2007. Kahit kulang sa datos ukol sa dami ng nangingisda, humigit kumulang sa 6 na milyong pamilya ang umaasa sa pangkabuhayang karagatan. Ang karagatan ang nagsisilbing "Social Security System". Binabatikos ng mga mangingisda ang pamahalaan sa kapabayaan nito at hindi pagsama sa mga mangingisda sa mga programa at polisiya.

Noong 1986, naabot na natin ang antas ng dami ng isda na puwedeng kunin mula sa karagatan ng pangmatagalan or "sustainable yield". Ngayon, ayon sa mga experto, sampung porsyento na lamang ang natitirang kabuoang dami ng isda kung ikumpara sa dekada 1960. Ang pagbaba sa dami at kalidad ng huling isda ay nagdulot ng pagbaba sa kita, tumaas na antas ng kahirapan at mas malayong pangisdaan na nagdulot ng mas mataas ng kapital sa tuwing mamalakaya. Ang iba naman ay kinakailangan pumalayag sa kalapit na mga bansa upang duon mangisda. Kung magpapatuloy ang ganitong kalakaran, malamang mawawalan pa ng pangkabuhayan ang mas marami pa nating mangingisda sa loob ng susunod na 10 hanggang 20 taon.

Nananawagan kami nang agarang pagrerehistro at pagbibigay ng lisensya sa maliliit na mangingisda, gayun din naman sa pagbilang sa dami nang mga bangka at komersyal na palakaya. Ito ay magsisilbing batayan tungo sa pagbalangkas ng wastong batas and polisiya na muling magbabalik sa yabong ng ating karagatan.

Pangalagaan ang mga kritikal na ekosistema

Ang patuloy na pagbagsak ng kita mula sa pangisdaan ay siyang nagtulak sa ilan na gumamit ng pinag babawal at mapanirang pamamaraan ng pangingisda. Ayon mismo sa Direktor ng BFAR, umaabot sa 10,000 pagputok ng dinamita ang maririnig kada araw. Ang mga komersyal na palakaya ay hindi rin sumusunod sa pinagbabawal na pangingisda sa loob ng munisipal na pangisdaan, gayon din sa hindi masawata na paggamit ng maliliit na mata ng lambat.

Ang pagkasira sa napakalaking parte ng ating kagubatan, pagmimina sa mga kabundukan at paggamit ng mga mapanirang pamamaraan ng pangingisda ay siyang dahilan ng pagkamatay ng nakararami nating mga bahura: - bahura na siyang tirahan ng mga isda nating pinapakinabangan. Ngayon, ayon sa mga pagsusuri, isang porsyento na lang ng mga bahura ang nasa mabuting kondisyon. Gayon din, mula sa halos 450,000 ektarya ng bakawanan noong nakaraang siglo, 100,000 ektarya na lamang ang natira. Gayundin naman, mula 30% hanggang 40% ng ating mga isayan or "seagrass beds" ang nasira sa nakalipas na limampung taon. Ang mga kritikal na ekosistemang ito ang tirahan at pinang gagalingan ng ating pagkain.

Ang pangangalaga sa mga kritikal na ekosistema ay hindi maaaring ihiwalay sa pagtugon sa isyu ng polusyon. Sa look ng Maynila, sa bisa ng "Writ of Ongoing Mandamus" pinag-utos ng Kataas taasang Hukuman sa mga ahensya ng pamahalaan na linisin ang Manila bay. Subalit, ang patuloy na pagdami ng basura ay indikasyon lamang ng patuloy

na paglabag sa kautusan ng Hukuman. Noong isang taon lang, umabot sa 127 na 10-wheeler trucks ang kinakailangan upang alisin ang basura sa lungsod ng Pasay sa loob ng apat na araw.

Upang maging matagumpay ang pamamahala sa karagatan, kailangang suriin muli ang stratehiya ukol sa pagtatag ng mga Marine Protected Areas upang mabawasan ang negatibong epekto ng climate change. Ayon sa World Bank, ang pangisdaan mula sa mga bahura ay magkakaroon ng matinding epekto mula sa sea-level rise, pag-init at pag-asim "ocean acidification" ng karagatan. Ayon din sa naturang report, ang produksyon ng pangisdaan sa katimurang bahagi ng Pilipinas ay tinatayang bababa ng sing kuwenta porsyento (50%). Sa kabilang dako naman, iminumungkahi ng mga eksperto ang 4 na ektarya ng bakawanan sa kada isang ektarya ng pangisdaan (4:1). Ang ganitong hatian ay magbibigay ng karagdagang serbisyo mula sa mga bakawanan.

Paunlarin ang kapakanan ng mga mamamayang umaasa sa karagatan

Ang Daan tungo sa Masaganang Karagatan ay may kaakibat na halaga at malasakit. Kailangan nating maghanda sa inaasahang, masalimuot subalit kinakailangang hakbang tungo sa paglutas ng krises ng pangisdaan. Tinatawagan ko ang lahat na sama sama nating lutasin ang nakahambang krisis. Mapait man ang solusyon, kailangan nating magtitiis para malampasan natin ng paghihirap na ito. Ang ating pamahalaan ay handang maisakatuparan ang mga programa at mabigyan ng sapat na tulong ang mga mangingisda at kanilang mga pamilya. Ito ay ang pagbibigay ng alternatibong pangkabuhayan, suportang pinansiyal, at mga samot saring pagsasanay para sa mga oportunidad sa labas at sa loob ng sektor pangisdaan. Sa pagbalangkas ng pagbabago, kinakailangan nating isa alang-alang ang kahirapan ng sector na umaabot sa 41% at hindi sapat na biyaya na nakukuha mula sa karagatan.

Ang pagsasaayos sa fisherfolk settlement areas o mga tirahan ay magbabalik sa dignidad ng sector gayundin, ang pagpapalakas ng programa sa kakayahan ng mga kababaihan.

Palakasin ang kakayahan sa pamamahala sa karagatan

Ang pagtugon sa krisis sa karagatan ay nangangailangan ng isang lideratong may pananaw at malakas na paninindigan. Ang kasalukuyang kalakaran at pag-iisip ay hindi akma upang makatugon sa krisis sa karagatan. Oo nga na malakas ang produksyon ng isda sa Pilipinas (pang lima noong 2010), subalit karamihan naman ng isda ay nanggagaling sa labas ng ating bansa. Sa pagtaas ng dami ng Pilipino at pagbaba ng dami ng isda ay bumaba ang fish availability o nararapat na dami ng isda sa bawat Pilipino. Sa katunayan, noong 2005-2007 ay bumababa sa 33 kilo kada taon ang isdang nakakain ng bawat mamamayan mula sa 38 kilong isda kada taon noong 1993.

Ang paglipat ng ilang responsibilidad ng BFAR sa mga LGUs ay lalong nagpabigat sa pagpapatupad sa batas sa pangisdaan. Hindi ito ang mithiin ng batas at kailangang baguhin ang sistemang ito. Ang kahinaan sa pamamahala ng ating karagatan ang bunsod ng pagka kanya kanya at magkakasalungat na mga responsibilidad. Isa tayo sa mga natitirang bansa sa Timog Silangang Asya na mayroong isang Bureau upang mamahala sa karagatan at pangisdaan. Kakayanin ba natin na protektahan at ipagtangol ang ating 2.2 milyong km2 karagatan mula sa iligal na pangingisda mula sa ibang bansa? Ilang administrasyon na ang pikit matang pinagpaliban ang pangangailangang ito. Ang tanong - kaya bang buwagin ng kasalukuyang administrasyon sa ganitong tradisyon?

Lubos na gumagalang,

Mga kinatawan para sa Daan Tungo sa Masaganang Karagatan (Roadmap to Recovery for Philippine Oceans): Dennis Calvan, Ephraim Batungbacal, Dr. Jose Ingles, Dr. Wilfredo Licuanan, Stuart Green, Mark Dia, Vince Cinches, Dinna Umengan, Iza Gonzales, Shannon Arnold, Ana Oposa, Ben Cabrido

EXECUTIVE SUMMARY

Roadmap to Recovery for Philippine Oceans

The Roadmap to Recovery for the Philippine Oceans is an urgent proposal to reverse the deteriorating condition of the country's marine resources – the need to safeguard the health of our oceans, the viability of coastal communities and national food security is the key guiding principle. The Aquino Administration will have a significant role to play in the transition from a regime of over-exploitation to a sustainable fisheries management regime.

This Roadmap constitutes a resounding call for the national leadership to convene a crisis team that will formulate and implement the changes needed to ensure healthy seas and sustainable fisheries. The crisis team has four goals to accomplish in response to the urgent call for action:

- Manage fishing capacity;
- Improve conditions of critical ecosystems;
- Improve the well-being of people reliant upon our seas; and
- Strengthen the management functions of the government.

Manage fishing capacity

There are too many boats chasing very few fish. In fact, we can only estimate how many fishers and how many fishing boats are operating in Philippine waters. The latest figures show that there were 469,807 municipal boats in the year 2000, and that there were 6,371 commercial fishing boats in 2007. While the government doesn't yet have solid statistics on fisheries for the country – we know that over six million people depend on the sea which serves as the country's secret "Social Security System" to those outside of the cash economy. These people turn to the sea when there is no food on the table. This is also the sector which criticizes the government for their exclusion from current programs and policies.

In 1986, the amount of fish taken from our seas had already exceeded the allowable limits needed to sustain our fish supply. Today, it is estimated that compared to the 1960s only ten percent of fish populations remain. The direct impacts of declining fish catch to fisherfolk are lower income, higher poverty incidences, and higher costs and risks when they travel farther distances to catch fish. In some cases, our fishing fleets have ventured into the high seas. At this rate, fishing would no longer be a viable economic livelihood in the next ten to 20 years.

We call for the immediate completion of municipal and commercial fisheries licensing and registration during your term. This would serve as the country's fisheries statistics baseline and should provide guidance for sustainable fisheries management.

Improve conditions of critical ecosystems

The continued decline in income from fishing because of increasing costs to catch fish has driven some fishers to resort to destructive fishing practices. These practices damage the very marine habitats that fishers depend on for their livelihood. No less than the Director of the Bureau of Fisheries and Aquatic Resources confirmed that about 10,000 blasts per day can still be recorded today. Meanwhile, commercial fishing boats continue to compete with small scale fishers, encroaching within municipal fishing waters (0-15 km) where they are banned.

Rampant and uncontrolled land development coupled with impacts from destructive fishing practices has left the country with deteriorating marine habitats. Less than 1% of our coral reefs are in excellent condition (meaning the reef's live coral cover is more than 75%). From almost 450,000 hectares of mangrove forest at the turn of the 20th century, only 120,000 hectares now remain. Similarly, we have lost about 30-40% of our seagrass beds. These habitats are critical to sustain the supply of the marine organisms that we call food.

Improving the condition of habitats cannot be done without addressing the issue of marine pollution. In Manila Bay for instance, in spite of the "Writ of Ongoing Mandamus" issued by the Supreme Court ordering government agencies to clean and rehabilitate Manila Bay, compliance by local government units and government agencies has not been done to satisfaction. Just last year the Pasay City government collected at least 127 ten wheeler truckloads of garbage in just four days as part of their coastal clean–up drive in Roxas Boulevard.

For successful management, we should revisit our strategy on marine protected areas to enhance resiliency and provide a buffer for the complexity and uncertainty of climate change impacts. A World Bank report released in June 2013 warned that coral reef fisheries are expected to be impacted by sea-level rise, warmer ocean temperatures, and ocean acidification. In this same report, marine capture fisheries production is projected to decline by 50 percent around the Southern Philippines by 2050. On the other hand, mangrove experts recommend a ratio of 4:1 hectares of mangroves to fishponds so that communities can still enjoy the services provided by a healthy mangrove ecosystem.

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Improve well-being of people reliant upon our seas

The Roadmap to Recovery will entail social costs. We have to prepare for the eventual, painful but necessary measure of the Roadmap to Recovery. The recovery will take time but it will be shorter if we do it right. During this recovery period, plans should be in place to support and guide displaced stakeholders to overcome this crisis. The government will need to provide alternative livelihood, income augmentation, retooling and other skills building that should include opportunities outside the fisheries sector. Measures to mitigate impacts during the recovery phase should be guided by the current levels of poverty (41%) and the lack of rent from fishing activity.

Delivering on asset reforms and establishment of fisherfolk settlement areas will significantly improve the living conditions of fisherfolk in the country. Further empowerment of women fisherfolk will be an integral part of the Roadmap to Recovery.

Strengthen management functions of the government

Addressing the oceans crisis will require more than the will of a visionary president with strong governance leadership. The fact that existing structures and governance frameworks are ill equipped to address this crisis will also need to be tackled.

The devolution of the functions of the BFAR to the LGUs has compartmentalized the management of an otherwise fluid resource. This was not the intention of the law. But we need to find a way to address such gaps in management. There is no other way.

The current situation where the responsibilities of government are fragmented and their jurisdictions are ill-defined are manifestations of weakness. Our country is among the few remaining countries in Southeast Asia which has only a Bureau at the helm of fisheries and oceans management.

INTRODUCTION

1. The Roadmap to Recovery for the Philippine Oceans is an urgent proposal to halt the deteriorating condition of the country's marine resources – the need to safeguard the health of our oceans, the viability of coastal communities and national food security is the key guiding principle. The Aquino Administration has a significant role to play in the transition from a regime of over-exploitation to a sustainable fisheries management regime.

2. The Roadmap constitutes a resounding call for the national leadership to convene an Oceans Crisis Team that will formulate and implement the changes needed to ensure healthy seas and sustainable fisheries. The proposed Oceans Crisis Team has four goals to accomplish in response to the urgent call for action:

   - Manage fishing capacity;
   - Improve the condition of critical ecosystems;
   - Improve the well-being of people reliant upon our seas; and
   - Strengthen the management functions of the government.

Current State of Philippine Ocean

3. There is a crisis in Philippine oceans. Most fishing grounds in the country are heavily exploited as we are fishing down the food chain, species and levels of catch are changing. Of the total 24 identified fisheries statistical areas, the National Stock Assessment Program of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) has conducted an assessment of only 13 fishing grounds, concluding that 10 of these are already heavily exploited. Heavily exploited fishing grounds are areas with exploitation rates above 0.5 (scale 0-1) . This means that more than half of the fish stocks are being taken out of the sea, leaving considerably less than the ideal half of the fish population for reproduction[2].

4. Domestic and industrial wastes have severely polluted rivers and near shore areas. Important marine habitats like the coral reefs, sea grass beds and mangroves are in critical condition. If all our coral reefs were protected like the Tubbataha Reef Natural Park, reefs can provide as much as 275 tons of fish per square kilometer per year[3]. With less than 1% of our coral reefs left in excellent condition, we run the risk of losing these habitats which are crucial to the health of ecosystems and to food security. Out of the 450,000 hectares of mangroves recorded in 1914, only 120,000 hectares of mangroves remain[4]. Changing weather patterns affect

[1]Research by Dennis Calvan and Ephraim Batungbacal
[2]Peer Review: Dr. Jose Ingles, Dr. Wilfredo Licuanan, Stuart Green, Eleanor Partridge, Mark Dia, Vince Cinches

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fishing seasons while sea-level rise attributed to global warming and the increase in sea surface temperature, have aggravated the conditions of coastal and marine resources. Increasing atmospheric concentrations of CO_2 contributes to ocean acidification which is corrosive to the shells of many marine organisms and affects coral reef growth. The confluence of the degradation of the marine environment and the overexploitation of marine resources would endanger the livelihoods of coastal communities, making fishing difficult at the least and impossible at the worst.

5. Based on the Census of Fisheries and Agriculture, in 2002 there were 1,614,368 fishers, of which 1,371,676 were municipal fisherfolk and 16,497 worked in the commercial fishing sector. Meanwhile, 226,195 worked in the aquaculture subsector[5]. With municipal fisherfolk representing 85% of the fisheries workforce but harvesting only 52% of the total marine catch, it is no wonder that, according to the National Statistical Coordination Board (NSCB), fisherfolk remain the poorest of the poor. Poverty incidence among fisherfolk, at 41.4%[6] is one of the highest in the country.

6. With this in mind, various civil society organizations, community-based organizations, government agencies and members of the academe gathered together and presented the 'People's Declaration of the Philippine Seas in Crisis' on November 15-16, 2012 (ANNEX A).

7. The Declaration urged the Philippine government to acknowledge that our seas are experiencing an unprecedented crisis—and that there is a need to create an appropriate roadmap to reverse the ongoing damage as well as to end overfishing. The Declaration demanded that the Aquino Administration immediately act against the crisis of overfishing and marine ecosystems degradation by ensuring that the protection, rehabilitation, and conservation of Philippine seas is a national priority and by creating and immediately implementing a roadmap that eliminates overfishing, and allows for the recovery of Philippine fisheries stocks and for marine ecosystems to continuously provide for our current and future needs.

8. ***A crisis requires a crisis response. We urge President Aquino to convene an Oceans Crisis Team composed of key cabinet officials, members of civil society, academe, and other experts. The sole aim is to develop and implement the Roadmap to Recovery for our Oceans and Seas.***

Principles for Achieving Sustainable Philippine Oceans

9. **Food security.** Food security 'exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life'[7]. In the Philippines, reduced seafood availability in many areas of the country reflects the decline of per capita fish consumption from 38 kg/yr in 1993[8] to 33.6 kg/yr average in 2005-2007[9]. Fluctuating fish production will not meet the fish dietary requirements of Filipinos considering the growing population in the country. A degraded marine ecosystem and an overexploited fisheries resource will not be able to sustain the protein needs of a growing population. Increasing prices of fish have also made access to safe and nutritious food relatively difficult for poor people.

10. **Community-based Coastal Resources Management (CBCRM).** Community-based Coastal Resources Management is a response to the limitations of the top down approach of managing coastal resources in the Philippines. It is a process of involving local community members in the management of the coastal resources on which they primarily depend. Governance of marine resources considers the needs of a variety of users with a common objective to ensure that the use of resources is sustainable.

11. **Ecosystem-based Management.** The UN FAO (2003) suggests that an 'ecosystem approach to fisheries strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries'[10].

12. **Precautionary Approach.** The precautionary approach is a set of agreed cost-effective measures and actions, including future courses of action, which ensures prudent foresight, reduces or avoids risks to the resources, the environment, and the people, to the extent possible, taking explicitly into account existing uncertainties and the potential consequences of being wrong[11].

ENVIRONMENTAL CHALLENGES

Fishing Grounds Are Heavily Exploited

13. **Addressing environmental challenges entails management of fishing capacity and improvement of the conditions of critical ecosystems.**

14. **Recent data from the DA-BFAR,** the main government agency that is mandated to ensure fish security, declared that ten of the 13 fishing grounds in the country showed heavy exploitation rates[12]. Only Camiguin waters, Iligan Bay and Macajalar Bay located in Mindanao remain in relatively good condition. Indicators of heavy exploitation are decreasing sizes of carnivores such as *lapu-lapu, tulingan* and *galunggong*, and decreasing catch. The balance between predator and prey affects the diversity of fish in the food web. Scientists call this 'fishing down,' when fisheries target all sizes of fish in an aquatic ecosystem. Larger and longer-lived fishes with high trophic levels decline relative to the abundance of the fishes and invertebrates of lower trophic levels[13].

15. The World Fish Center in 1998-2001 found that fish populations were being harvested at a level 30% above that at which they are capable of replenishing themselves. Total fish catch leveled off at around 1.65 million tons in the early 1990s[14]. Since then, total fish catch production fluctuated. Excess fishing is resulting in economic losses, conservatively estimated at about PHP 6.25 billion (USD 125 million) per year[15].

16. Overfishing is the result of intense competition between different resource users. Based on the Philippine Fisheries Code of 1998, municipal waters of up to 15 kilometers from shore are solely reserved for the use of municipal fisherfolk. Small commercial fishing vessels (3.1 - 20 gt) may fish within 10.1 - 15 km upon the discretion of Local Government Units. Commercial fishing vessels (>3 gt) are not allowed to fish within the municipal waters. However, it has been a prevailing complaint from municipal fisherfolk that small-scale commercial fishing boats (3-20 gt) regularly fish within municipal waters.

17. Declining catch per unit effort (CPUE) is clearly an indication of decimation of fish populations in the Philippine oceans. In Manila Bay, a series of reductions in CPUE has taken place: from 46 kg/hr in 1947 to 13.8 kg/hr in 1959; from 94.1 kg/hr in 1970 to 27.9 kg/hr in 1983; and from 14 kg/hr in 1986 to 10 kg/hr in 1993[16]. Biological overfishing has also been observed particularly in small pelagic fisheries[17].

18. ***We call on President Aquino to facilitate the immediate completion of municipal and commercial fisheries registration and licensing during his term. This should serve as the country's baseline for fisheries statistics and should provide guidance for sustainable fisheries management.***

Management of Community-based Marine Protected Areas has not been effective

19. As of 2008 there were 985 MPAs established in the country, covering an aggregate area of 14,943 km^2, of which 1,459 km^2 had been designated as no-take[18] areas. Community-based MPAs which represent 95% of the county's total MPAs have a combined no-take area of only 206 km^2, while two nationally designated no-take MPAs, the Tubbataha Reefs Natural Park (970 km^2) and Apo Reef Natural Park (275 km^2) have a combined area of 1,245 km^2, which is 85% of the total no-take area. Just 0.5% of municipal waters and 2.7–3.4% of coral reef areas in the Philippines are protected in no-take MPAs. This is very far from the 15% recommended by the Fisheries Code (R.A. 8550)[19] Implementation of community-based MPAs should be supplemented by the designation of additional large no-take areas specifically located to address conservation targets[20].

20. Our benchmark for a successful MPA is the Tubbataha Reefs Natural Park (TRNP). Monitoring for the last 15 years in Tubbataha has shown that live coral cover has been stable after the coral bleaching incident in 1998, when coral cover declined by about 22%[21]. Fish biomass in TRNP remains stable at 278 metric tons per km^2 [22]. Target fish biomass ranged from 45.7 to 134.3 kg per 500 km^2 [23] . The density of demersal fish, which are associated with reef status was estimated at 465 individuals per 100 km^2 [24]. The increasing trend in commercially important fish signifies that fishing activities are absent or very minimal, a good indicator of the Park's protection as a no-take zone[25].

21. ***We should revisit our strategy on marine protected areas to enhance resiliency and to provide a buffer for the complexity and uncertainty of projected climate change impacts. To ensure the resiliency of coral reefs, a national network of MPAs should be established.***

Rampant and Uncontrolled Development in Coastal Areas

22. All over the country, there are stories of aggressive development that is detrimental to artisanal fisherfolk. There were plans to develop an eco-tourism hub complete with an international airport at the heart of Panglau Island in the Visayas Region[26]. In Bohol, also located in the Visayas Region, a Korean company called Biosystems, Co. Ltd., had entered into a joint venture agreement with the Provincial Government of Bohol to develop more than 100,000 hectares of municipal waters for seaweed production[27]. Had this project pushed through, hundreds of small fisherfolk will have been displaced. In the Municipality of Casiguran, Aurora, a special economic zone that measures around 13,852 hectares and which includes an airport located just a few kilometers from the shore, is underway[28].

23. This development aggression is also felt strongly by the provinces near the seat of power in Metro Manila. Oil spills, such as what happened in La Union where Chevron Philippines admitted their mistakes, add pressure on the country's coastal resources. Coastal development limits the ability of coastal and marine resources to recover and to provide maximum services to those people who depend on them.

24. Increasing risks from mining can also be expected. Coal Asia said 400 hectares out of its 13,000-hectare coal concession in Davao Oriental is feasible for mining given current prices. The holder of the mining rights for the country's second largest coal project in terms of resources and reserves expects commercial production to start this October instead of by January 2014, the target date[29]. Coal projects, whether mining or power plants, endanger coastal ecosystems with effects such as toxic emissions, coal ash and mine tailings. Marcopper is the worst, but by no means the only, environmental disaster in Philippine mining history. On March 24, 1996 Marcopper had an accidental release of tailings into the environment from the mine spilling more than three million tons of hazardous waste into the Makulapnit River in Marinduque[30]. Polluting even coastal waters, the amount of coastal fisheries income lost due to the toxic spill was estimated at PHP 9.2 million in 1996[31]. In October 2005, as a result of heavy rains in Rapu Rapu, Albay, cyanide and other contaminants from Lafayette mine spilled into the sea and around the island, resulting in massive fish kills. Lafayette was fined a total of PHP 10.7 million for violating the Clean Water Act, and for violating the conditions of their Environmental Compliance Certificate[32].

25. ***We recommend a moratorium on reclamation projects, land conversion, construction of coal fired thermal power plants and sea dumping as a crucial component to stop degradation, pollution, and ocean acidification. A National Land Use Plan should be prioritized to protect the integrity of our land and water resources against indiscriminate use.***

Deteriorating Conditions of Fishery Habitats

26. Seagrass beds are important fish habitats. Like mangroves and coral reefs, they also serve as nursery grounds for fish and crustaceans. Endangered sea animals like dugong and sea turtles are found in areas with relatively sizable seagrass beds. Recent estimates peg seagrass beds in the Philippines to total around 27,282 km^2 [33,34]. Seagrass beds in the country are deteriorating. Of the 978 km^2 of seagrass that remained in 1994, about half have either been lost or severely degraded during the past 56 years[35].

27. Coral reefs, serve as spawning grounds for fish and crustaceans. Reef fisheries have been estimated to directly contribute around 15%-30% of the total national municipal fisheries production[36,37]. Corals are extremely sensitive to small changes in light intensity, water temperature, salinity, turbidity, food availability, competition for space and predation. As a result, changes in water temperature resulting from climate change or weather patterns, increased pollution and soil runoff in coastal areas and the depletion of key fish species due to overfishing, can all lead to significant coral decline.

28. Upward growth of coral colonies is generally between 0.08 to 4 in. (0.1-10 cm) a year, depending on species, location, and other external conditions. This means that reefs can take an extremely long time to recover from damage and reef ecosystems can be altered as some coral species are more resilient, or recover more quickly, than others[38].

29. Mangroves serve as nursery grounds for fish, prawns and crabs, among others. Mangrove forests also serve as protection for coastal areas from storm surges, strong waves and typhoons. The strong roots and stems of mangrove trees provide 'physical barriers' and break strong waves before they reach the shores. Moreover, mangroves tend to reduce organic pollution near shore by sequestering carbon.

30. Mangroves can sequester around 1.5 tons of carbon per hectare per year. This is approximately equal to the amount of carbon a motor vehicle, which uses approximately 2,500 liters of petrol per year, releases to the atmosphere each year[39]. It is estimated that four and a half million hectares of mangroves in Indonesia can scrub the carbon dioxide emissions of some five million cars. Mangroves are also sources of significant products of economic value, e.g. fries and crablets for aquaculture, mangrove seeds and propagules, as well as alcohol and medicines.

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31. There are estimated to be around 248,813 hectares of mangrove forest in the Philippines, down from 450,000 hectares in 1914. The rapid conversion of mangroves into shrimp ponds during the 1960s and 1970s significantly reduced mangrove forest cover in the country[40]. Many of these converted mangroves forests have remained idle land which, under the Philippine Fisheries Code of 1998, should have been restored back to mangroves. A 4:1 mangrove to fishpond ratio is recommended for a healthy ecosystem[41].

32. Based on 2006 data from DA-BFAR, an estimated 5,166 hectares of Fishpond Lease Agreements (FLAs) have been cancelled. On the other hand, around 2,821 hectares and 1,100 hectares have been abandoned or are undeveloped, respectively.

33. Some civil society organizations proposed a Joint Administrative Order on FLA Cancellation and Reversion of abandoned, undeveloped and underutilized fishponds to mangroves. At present, provisions on FLA-cancellation have already been incorporated in the Fisheries Administrative Order 197-1. The DENR has yet to issue its administrative order on reversion of abandoned and underdeveloped ponds to mangroves.

34. We recommend a full assessment and mapping of remaining seagrass beds, primary mangrove forests and coral reefs to help us prepare for the impending impacts of coral bleaching, warming seas and ocean acidification. A sustainable 4:1 hectares of mangroves to fishpond ratio is also recommended so that communities can enjoy the services provided for by a healthy mangrove ecosystem.

Environmental Impacts on Philippine Oceans

Ocean Acidification[42]

35. The ocean absorbs approximately 25% of the CO_2 added to the atmosphere from human activities each year[43]. When CO_2 dissolves in seawater, carbonic acid is formed. This phenomenon, called ocean acidification, is causing seawater to become corrosive to the shells and skeletons of numerous marine organisms. Ocean acidity has increased by 30% since the beginning of the Industrial Revolution. If the concentration of atmospheric CO_2 continues to increase at its current rate, the ocean will become corrosive to the shells of many marine organisms by the end of this century.

36. Current ocean acidification is resulting in increasing acidity (lower pH) of the oceans at a rate that may not have been seen for the last 30 million years or more[44]. Climate change and ocean acidification do not operate in isolation but are impacting the marine environment in multiple interactive ways. Ocean acidification, for example, increases the sensitivity of corals to thermal stress, enabling coral bleaching to occur at lower temperatures when exposed to lower pH levels[45].

Coral Bleaching

37. Climate change is the 'greatest stressor in the 21st century that threatens both present and future generations' and the impact on communities is expected to be particularly pronounced in developing countries[46]. The predicted effects of climate change on ocean ecosystems and coastal communities are alarming.

38. The IPCC 4th Assessment Report points to a high possibility of coastal areas around the world being radically altered due to climate change. Coral species have been observed to have low adaptive capacity and are highly vulnerable to thermal stress. An increase in sea surface temperature (SST) of about 1-3 degrees Celsius will likely result in more frequent coral bleaching and widespread mortality, with massive impacts on the reef ecosystems that depend on them, including direct threats to established community-managed marine protected areas as well as productivity of reef fisheries[47]. The World Bank report[48] released in June 2013 states that coral reef fisheries are expected to be affected by impacts of sea-level rise, warmer oceans, and ocean acidification. Findings of the report indicate that marine capture fisheries production is projected to decline by 50 percent around the Southern Philippines by 2050.

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39. On coral bleaching, the report says that coral reefs can only tolerate a narrow range of temperatures and are highly vulnerable to sea-surface temperature increases. Ocean acidification exposes coral reefs to more severe thermal stress resulting in bleaching. Coral bleaching events can be expected when regional warm seasonal maximum temperature is exceeded by 1degree Celsius for more than four weeks.

40. Scientists from the University of the Philippines and De La Salle University said that the magnitude of a widespread coral bleaching event in 2010 could surpass the bleaching catastrophe in 1998, which was also an El Niño year. Professor Wilfredo Licuanan of De La Salle University expressed fears that the coral reefs in the country could be greatly diminished in 50 years if bleaching happens as frequently as they do now. During the 1998 coral bleaching event, El Nido in Palawan lost at least USD 15 million in earnings from fisheries and tourism because of the phenomenon[49].

Marine Pollution[50]

41. Marine pollutants which comes from both land (e.g., via rivers and wind) and sea (e.g., through marine dredging, mining, dumping and shipping) are responsible for significant lethal and sub-lethal effects on marine life. Pollutants interfere with the structure of marine communities and ecosystem functions. Upland and coastal development, increasing population, intensive farming and aquaculture, rapid urbanization and industrialization, greater shipping traffic and fishing effort, as well as widespread deforestation and nearshore development, all contribute to the pollution problem.

42. Marine pollution can be grouped into: sediments, eutrophication, toxics and marine litter. Some of the impacts of pollution on marine life, are:

- Sediments reduce light penetration which affects photosynthetic activity in corals and seagrasses. It smothers benthic organisms and reduces suitable substrates for settling larvae.

- Eutrophication through too much nitrogen and phosphorus results in jellyfish and phytoplankton blooms leading to hypoxia (lack of oxygen). Macroalgae blooms can outcompete seagrasses and corals, increase severity of coral diseases and reduce fertilization success in corals.

- Toxics such as industrial discharges, atmospheric deposition from incineration and leaching from dumpsites and pesticides bioaccumulate in marine organisms. Heavy metals from mining, vehicle emissions, leaching from landfills, discharge from manufacturing plants and untreated human and agricultural waste inhibit recruitment, fertilization and development in various marine invertebrates including corals, mollusks and crustaceans. Cyanide poisoning causes coral bleaching, impairs calcification of skeletons and kills various reef-associated organisms.

- Marine litter includes micro-plastics (<5 mm), macro-plastics (>5mm) and lost and abandoned fishing gear (LAFG). Micro plastics when ingested by marine organisms leads to internal blockages and toxic poisoning. Macro plastics leads to entanglement and drowning, suffocation, and/or starvation due to interference with feeding. LAFG causes internal blockages, toxic poisoning, and/or starvation due to false 'stomach filling'.

Pollution in Manila Bay

43. To give us an idea of the severity of marine pollution, in September 2012, the Pasay City government collected at least 127 ten wheeler truckloads, estimated at 1,905 cubic meters, of floating wet garbage in just four days as part of their coastal clean–up drive in Roxas Boulevard[51]. Garbage mostly collected were composed of plastics, particularly shampoo sachets, diapers, plastic bags, and from metal fragments.

44. Fish, shrimps and crabs were found to be contaminated with high levels of lead (Pb), cadmium (Cd) and chromium (Cr)[52]. Heavy metals present in Manila Bay were attributed to local point sources and direct deposition of heavy metal from air pollution. Manila Bay is highly eutrophic with excessive nitrogen and phosphorus loading from surrounding areas[53]. High amounts of nitrogen and phosphorus might lower the dissolved oxygen concentration in the bottom, particularly in the inner bay area.

45. Sedimentation rate occurring in the northwest of the Pasig River is 9.4 cm/yr. Meanwhile, sedimentation rate at the Northwest tip of the Cavite Spit is 8.8 cm/yr[54]. In Pampanga Bay, the highest rate found is only 4.3. cm/yr.[55] In terms of shoaling rates, Pampanga Bay shows the least amount of shallowing while the Pasig river area is has the greatest. The low rates of sedimentation in Pampanga Bay could be due to rapid subsidence.

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46. To curtail subsidence, two measures must be implemented: first is the replacement of groundwater with surface sources and second is the regulation of groundwater use. The country should also stop using waterways as garbage dumps and housing sites. Excessive groundwater extraction is lowering land surface (causing subsidence) by several centimeters to more than a decimeter per year[56].

47. The Supreme Court rendered a decision on Feb. 15, 2011 based on recommendations by the Manila Bay Advisory Committee (MBAC) led by Justice Velasco, to set a time frame for the agencies to perform their tasks as ordered in a "Writ of Continuing Mandamus" for the DENR and ten other government agencies and LGUs to clean up Manila Bay[57]. To date, government is unsure as to the extent of the compliance to court order[58]. All we see are piles of garbage in Manila Bay in the headlines following a typhoon.

48. We urge the government to develop a National Plan of Action to reduce all forms of marine pollution around the country.

SOCIO-ECONOMIC CHALLENGES

High Incidence of Poverty in Fishing Communities[59]

49. Addressing socio-economic challenges means improving the well-being of people reliant upon our seas.

50. Fisherfolk are considered to be the poorest of the poor, with 41.4% living in poverty in 2006 and 2009, a 6.4% increase from 2003. The poorest fisherfolk are found in the CARAGA Region, Region IX and Region X. From 2003 to 2009, the top three regions with the highest increase in poverty incidence is Region 1 (143% increase), ARMM (76%) and Region 8 (57%). Only five regions experienced a decrease in poverty incidence, the highest of which are Region 3 (50% decrease), Region 4-B (14%) and Region 5 (10%).

51. Low income from fishing coupled with high poverty incidence is pronounced among the municipal fisherfolk. This is attributed to declining fish catch, down from 20 kg per day, which was the average catch during the 1970s[60,61,62,63]. Recent catch estimates pegged the daily catch of fishers at an average of 4.76 kg ranging from 2 kg to 16.50 kg[64].

52. The continued decline in income from fishing because of increasing costs to produce fish has driven some fishers to resort to destructive fishing practices, where they destroy the very marine habitats on which their livelihoods depend. No less than the Director of the Bureau of Fisheries and Aquatic Resources confirmed that about 10,000 blasts (incidents of dynamite fishing) per day can still be recorded around the country.


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Minimal Improvement in Asset Reform

53. Asset reform is an important poverty alleviation strategy for fisherfolk. Fisherfolk who depend solely on coastal resources need to sustainably manage these resources to maintain productivity. There are two assets which needed to be secured. The first is the delineation of municipal fishing grounds. The second is fisherfolk settlement. Delineation demarcates the marine areas which fall under the jurisdiction and responsibility of the municipalities, while settlement grants fisherfolk a decent place to live in.

54. Despite the policy mandate emanating from the Local Government Code of 1991 and the Philippine Fisheries Code of 1998, the government has yet to complete the delineation of municipal waters in most of the fishing grounds in the Philippines. As of March 25, 2009, the National Mapping and Resource Information Agency (NAMRIA) reported that 918 municipalities in 66 coastal provinces in the Philippines have been mapped and delineated. However, in order to complete the delineation process, LGUs should pass ordinances determining their municipal territorial boundaries. Unfortunately, only 31 municipalities have done this based on NAMRIA data.

55. Section 108 of the Philippine Fisheries Code of 1998 mandates the DA-BFAR to provide safe and secure fisherfolk settlement. Implementing rules and regulations (IRR) to implement Section 108 of RA 8550 and a draft of the comprehensive program for fisherfolk settlement have undergone a series of consultations. Both the IRR and the program are in the process of finalization. In 2013, the DA-BFAR committed to allocate around PHP 10 million for the social preparation phase. For 2014, the DA-BFAR committed to provide PHP 300 million for the implementation of the program.

56. The Comprehensive National Fisheries Industry Development Plan (CNFIDP) lacks provisions to improve the plight of women fisherfolk and to reclaim their management roles in fishing communities. While the Philippine Development Plan aims to promote gender equality and empowerment of women as envisioned in the Millennium Development Goals (MDG), indicators of government support remain at a minimum[65]. Further empowerment of women fisherfolk will be an integral part of the Roadmap to Recovery.

57. We urge the government to prioritize asset reforms in the fisheries sector and to establish fisherfolk settlement areas. A secure and permanent settlement for them will restore their dignity, significantly improve their living conditions and empower women fisherfolk.

INSTITUTIONAL CHALLENGES

58. Addressing institutional challenges requires the strengthening of management functions of the government

59. The management of marine environments and fishery resources is distributed among too many government agencies and instrumentalities. Municipal or city governments manage municipal waters and resources within the territorial boundaries of these municipalities or cities. DA-BFAR takes charge of commercial (e.g., outside municipal waters) fishing activities and public lands such as tidal swamps, mangroves, marshes and foreshore land and ponds. The DENR handles shoreline and foreshore areas through Protected Area Management Boards (PAMBs) and areas under the category of protected landscapes and seascapes (e.g., such as mangrove swamp forest reserves under the NIPAS Act)[66]. Annex D gives a brief summary of the various roles and responsibilities of 12 agencies.

60. For an effective and efficient institution to manage Philippine seas, a coherent national policy pronouncement must be made to ensure that national laws and policies are harmonized toward the end goal of sustainable fisheries and recovered / rehabilitated marine ecosystems. Each coastal city / municipality should have formulated and implemented their respective Fisheries Development Plan / Coastal Resource Management Plan by 2016.

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ANNEX A

People's Declaration of the Philippine Seas in Crisis Quezon City, Philippines 16 November 2012

We, individuals and organizations from different regions, communities and sectors from all over the country, have come together to declare that the Philippine Seas are in crisis.

We acknowledge that the Philippine Seas, considered the center of global marine biodiversity, has now become a fragile environment that needs urgent attention. The unhealthy state of our seas will gravely affect us, as well as the more than 30 million Filipinos who depend on these marine resources for survival and subsistence.

The following indicate why we are in a crisis:

- Our marine ecosystems are in decline. Only 5% of the country's coral reefs remain in good condition. Of the 450,000 hectares of mangroves reported in 1914, only around 100,00 hectares remained as of 1992. Ten out of the 13 of the country's fishing grounds are either severely fished or are overexploited.

- We have polluted our seas. Our coastlines are littered with trash,and our waters are tainted with harmful chemicals and toxics from domestic sewage, industrial discharges, urban and industrial run-off, accidents, spillage, explosions, sea dumping operations, mining, agricultural run-offs and pesticides, waste heat sources, and radioactive discharges.

- Carbon emissions on land also damage our marine life. Climate change, caused by burning fossil fuels, is increasing sea water temperatures and acidity, melting glaciers, raising sea levels, and changing ocean currents.

- Unsustainable commercial fishing activities are a key threat faced by our seas. Overfishing and destructive fishing particularly illegal, unreported and unregulated fishing (IUU) by commercial fishing fleets within the Philippines Exclusive Economic Zone (EEZ) is seen as a major problem affecting any conservation effort.

- Unsustainable fishing activities have emptied our seas of the marine resources that we have depended on for generations. Destructive fishing activities such as dynamite and cyanide fishing, muro-ami, bottom trawling, pirate fishing and overfishing, are depleting our sea's resources without giving it time to recover.

As an archipelagic nation, we need to reverse the continued decline of our seas. Our country's food security and economic development depend on improving the health of our oceans.

If we are to continue enjoying the bounty of our marine resources, we need to rethink our approach to managing our seas.

We urge the Philippine government to acknowledge that our seas are experiencing an unprecedented crisis—and that there is a need to create an appropriate roadmap to reverse the ongoing damage as well as to end overfishing.

We demand that the Aquino Administration immediately act against the crisis of overfishing and marine ecosystem degradation by:

1. **ensuring that the protection, rehabilitation, and conservation of Philippine Seas is a national priority;**

2. **Creating and immediately implementing a roadmap that eliminates overfishing, and allows the recovery of the Philippine fisheries stocks and marine ecosystems to continuously provide for our future needs.**

We owe the sea our air, our sustenance, our survival. We, communities from Luzon, Visayas, and Mindanao, threatened by overfishing and the destruction of our Marine Environment, hereby also declare our pledge to save the Philippine Seas.

How do we carry out the 2 demands mentioned in the declaration?

Creation of PHILIPPINE SEAS RESCUE TEAM that carries the mandate to constitute the Emergency Rescue Plan that shall

a. reduce fisheries and marine ecosystem pressure and

b. gather baseline support for marine ecosystem and fisheries production target and

c. identify safety nets for dislocation and strengthen existing policy regime and harmonize existing laws and policies.

Sans the creation of the Rescue Team the conference calls on the following:

fishing license/permits freeze – no more new fishing capacity everywhere. We recognize that fishing efforts have already exceeded the capacity of our natural resources to replenish. We call on the national government to issue a moratorium on issuances of new commercial fishing permits. This way we are maintaining current fishing capacity but at the same time recognizing that we need to restrict entry of new fishing vessels using the precautionary principle.

stronger vessel registry and licensing system - to establish actual baseline data on how much we are actually harvesting and how many tons of fish we need to harvest for current and future needs. We also need to know whether current fisheries production and its trend can feed our growing population.

making 15 km from the shores exclusive to municipal fisherfolks – We need to implement the Philippine Fisheries Code of 1998 that stipulates the preferential use of municipal fisherfolks, those who use fishing vessels of less than 3 gross tons, over the 15-kilometer municipal waters. We need to protect the relatively rich fishing grounds from the intrusion of large commercial fishing vessels, that have efficient but destructive fishing gears.

moratorium on reclamation projects, land conversion, construction of coal fired power plants and sea dumping – **as a crucial component to stop degradation, pollution, and acidification. We need to protect the integrity of our land and water resources against indiscriminate use. We need to review laws and policies on natural resource extraction and underscore the mandate of the State to provide a healthy and balanced ecology for its people.**

Conference Participants:

Greenpeace Southeast Asia, UNFAO, Tambuyog Development Center Inc., NGOs for Fisheries Reform, Donsol BADAS, DENR-PAWB-CMMO, BUREAU OF FISHERIES AND AQUATIC RESOURCES CENTRAL OFFICE AND REGIONAL OFFICES, SAVE THE PHILIPPINE SEAS, UP Marine Science Institute, ANAK-BALAYAN Ang Nagkakaisang Mamamayang Kostal ng Balayan, **WWF, NAGSAMA –Lamon Bay, CERD** Center for Empowerment and Resource Development , **PUMALI-MV** Pinalakas na Uganayan ng Mangingisda sa Luzon, Mindanao at Visayas, **Aksyon Klima Pilipinas, PhilDHRRA Visayas** Philippine Partnership for the Development of Human Resources in Rural Areas –Visayas, **ECO Fish, UP Ecotour, PUMASAG** - Pinag-isang Uganayan ng mga Mangingisda, **NAMAMANGKA-** Nagkakaisang Maliliit na Mangingisda na Kabite, **PKSK** - Pambansang Katipunan ng mga Samahan sa Kanayunan, **SAMMACA -** Samahan Ng Maliliit Na Mga Mangingisda Ng. Calatagan, **PAFC – Zambales** Provincial Agriculture and Fishery Council, **International Fishing Workers Collective-Ibon International, LLCC, ISO -** institute of Social Order, **SMMM, IIMC, SMB, SAMANASEKAP Inc., PO BLM**, **PhilGrassroot –ERDF, IPDM-** Institute for Peace and Development in Mindanao, SIKAT - Sentro para sa Ikauunlad ng Katutubong Agham at Teknolohiya, **BALAOD** - Balay Alternative Legal Advocates for Development in Mindanaw, **CARET Inc.** - Center for Agrarian Reform, Empowerment and Transformation, **CI Philippines -** Conservation International Philippines, **MAPAGPALA -** Mamamayan Para sa Pagpapanatili at Pagpapaunlad ng Lawa ng Laguna, **NLB-IFARMC-Quezon** - Northern Lamon Bay, Integrated Fisheries and Aquatic Resources Management Council –Quezon, **Golden Bay MPC, BO** , **Laguna Lake Consultative Council**, **TRIAS, PANGISDA – PILIPINAS** - Progresibong Alyansa ng mga Mangingisda-Pilipinas, PRRM - Philippine Rurak Reconstruction Movement, **BANTAY DAGAT, NFRDI,** Hayuma Foundation, Philippine School of Business Administration Student Service Center, Donsol LGU

ANNEX B

PHILIPPINES OCEANS RESCUE PLAN

Strategy	2013	2014	2015	2016	2038	Expected outcome
GOAL 1. MANAGE FISHING CAPACITY						
Create crisis team						Executive Order creating the Oceans Crisis Team
Assessment of fishing grounds and inland waters. Prioritize among the 24 fishing grounds.						Studies should be able to state how many boats can be allowed and how much fish can be taken out
Registration and licensing of municipal and commercial fishing vessels / Shift to non-destructive fishing gears						Determined total fishing capacity for municipal and commercial fishing boats / Provided incentives for sustainable fishing practices
Immediate implementation of policy on non-encroachment of commercial fishing vessels inside 15 km municipal waters						Option for LGUs to allow small commercial fishing vessel within 10.1 - 15 km should be disallowed
Remove bad and ugly subsidies and enhance good subsidies e.g. fisheries management programs and services; fisheries research and development by 2038						Short list of subsidies
13 out of the 13 NSAP covered fishing grounds in productive condition by 2038 (key species indicators)						CB-CRM implemented in the 13 NSAP covered areas
National Plan of Action on management of fishing capacity by 2016						NPOA Management of Fishing Capacity
GOAL 2. IMPROVE CONDITIONS OF CRITICAL ECOSYSTEMS						
Assessment and mapping of seagrass beds, mangroves and coral reefs						
15% of municipal waters as marine protected areas (MPAs) by 2038 considering effects of climate change						Agreement on the the extent of no-take MPAs
Identify and map out of mangroves that are released by DENR to DA-BFAR for fishpond purposes by 2016						
Achieve mangrove-pond ratio of 4:1 by 2038						
Develop National Plan of Action to reduce marine pollution						NPOA marine pollution

Assumptions	Notes	Implementing Agencies
		Office of the President
		DA-BFAR,DENR, LGUs, special bodies
Freeze in additional capacity	Shift to low impact fishing gears.	DA-BFAR, LGU
		LGU, DA-BFAR
	Develop criteria for prioritization	DA-BFAR,DENR, LGUs, special bodies
Budget Allocated		DA-BFAR
	In accordance with UNFAO	DA-BFAR
		DENR, DA-BFAR, LGU
	Dr. Angel Alcala suggests 40%; Dr. Wilfredo Licuanan suggests 50%; Philippines committed to Coral Triangle Initiative 20% by 2020	DENR, DA-BFAR, LGU
		DENR, DA-BFAR, LGU
		DENR, DA-BFAR, LGU
		DENR, DA-BFAR, LGU

Strategy	2013	2014	2015	2016	2038	Expected outcome
GOAL 3. IMPROVE WELL-BEING OF PEOPLE RELIANT UPON OUR SEAS						
Generate employment for fisherfolk and develop sustainable livelihood						
Provide retooling and skills building to include opportunities outside the fisheries sector						
Establishment of fisherfolk settlement areas						
GOAL 4. STRENGTHEN MANAGEMENT FUNCTIONS OF THE GOVERNMENT						
Formulated and implemented Fisheries Development Plan/CRM Plan for every coastal city/municipality by 2016;						
Review and harmonize conflicting laws and policies on fisheries by 2038						Efficient and effective implementation of laws pertaining to fisheries

Assumptions	Notes	Implementing Agencies
		DA-BFAR, LGU
		TESDA, DA-BFAR
		DA-BFAR, LGU
		DENR, DA-BFAR, LGU
		DENR, DA-BFAR, LGU

ANNEX C

Highlights of Existing Roadmaps

Roadmap	Components/Call for Action
Comprehensive National Fisheries Industry Development Plan (CNFIDP, 2006-2025) http://www.bfar.da.gov.ph/images/pdf/CNFIDP.pdf	Comprehensive Education Program for Fisheries and Aquatic Resource Management Council [FARMC] and Fisherfolk Organizations shall enhance the capabilities of LGUs and the local communities in various facets of fisheries management
	Validation of Priority Use Rights through Municipal Registration and Licensing is proposed to minimize resource use conflicts
	Enhancement of Locally Managed Marine Areas
	Rehabilitation and Regeneration of Coastal and Inland Ecosystems both relate to the issue of habitat degradation
	Sustainable Fisheries Livelihoods Support shall help resolve the livelihood-related concerns
	Infrastructure and Post-harvest Facilities Development for Municipal Fisheries shall address the need for inadequate infrastructure support, particularly cold storage facilities and fish landing centers
	Enhancement of Fishery Law Enforcement shall mitigate the concern for weak law enforcement
	Rationalization of Municipal Fishing Effort addresses the overfishing concern
Philippine Development Plan 2011-2016 http://www.neda.gov.ph/PDP/2011-2016/	
The delineation of municipal waters shall be fasttracked and completed during this Plan period through the following strategies:	In partnership with NGOs and fishermen's federations at the local and national levels, deploy at least one trained community organizer in each of the remaining 873 coastal municipalities, to: facilitate the organization, education, and mobilization of the small fishers in the municipality; speed up the delineation of municipal waters; and facilitate the implementation of coastal resource management planning and the Fisheries Code;

Roadmap	Components/Call for Action
	Issue a Memo Circular (from DABFAR and DILG) to local chief executives advocating the swift implementation of the Fisheries Code, especially the delineation of municipal waters, as a means to help 1.5 million small fishermen and increase the LGU tax base;
	Explore the granting of incentives to small fishers participating in the process, in the form of their immediate registration and licensing as municipal fishers, and provision of settlement sites and land tenure security; and
	Provide technical assistance through DILG and relevant agencies in delineating and validating municipal waters, especially among municipalities with territorial conflicts
Explore a moratorium on all approvals of Foreshore Lease Agreements, except on ensuring the settlement of small fisherfolks, and set up a task force on fisherfolk settlement, to begin providing land tenure security to small fisherfolk households;	
Ensure that 40 percent of women are represented in all management structures, both nationally and locally, as provided in RA 9710 or the Magna Carta for Women	
Set aside sufficient funds for the implementation of the Comprehensive National Fishery Industry Development Plan (CNFIDP), which is the 25-year development plan initiated by the DABFAR by virtue of the Philippine Fisheries Code of 1998; and	
Conduct vulnerability risk assessments of coastal communities through DA-BFAR and DENR, in coordination with LGUs, and provide the necessary funds for the activity	

Roadmap for Fisheries	Components/Call for Action
Agriculture and Fisheries Modernization Plan (2011-2017) http://xa.yimg.com/kq/groups/19078618/1438721953/name/AFMP+2011-2017.pdf http://business.inquirer.net/101021/modernizing-agri-fisheries-sector-in-ph	
	Improve the postharvest handling of fishery products
	Harness science
	Protect fishery resources
	Enhance quality and safety
	Strengthen governance
	Improve resilience
	Inputs
National Plan of Action-Coral Triangle Initiative http://www.coraltriangleinitiative.org/sites/default/files/resources/Philippines%20NPOA_Final.pdf	Priority Seascapes are designated and effectively managed
	Ecosystem Approach to management of fisheries (EAFM) and other marine resources fully applied
	Marine Protected Areas (MPAs) established and effectively managed (including community based resource management)
	Climate Change Adaptation Measures Achieved
	Threatened Species Status Improved

ANNEX D

SPECIFIC ROLES OF GOVERNMENT AND NON-GOVERNMENT GROUPS IN COASTAL MANAGEMENT

AGENCIES	ROLES
1. Local Government Units (Municipality and City)	• Provide over-all facilitation and coordination for planning and implementation; • Develop a coastal environmental profile with maps for planning; • Conduct information, education and communication and training activities for local organizations; • Develop and adopt 5-year CRM plan; • Support CRM plan implementation through appropriate ordinances; • Incorporate appropriate CRM best practices in plan; • Implement CRM plans through annual investment plan and budget; • Enact comprehensive fisheries management ordinance; • Maintain a municipal coastal database to facilitate planning and implementation; • Support participatory coastal resource assessment for each barangay; • Provide budget and dedicated personnel for planning and implementation; • Identify and implement alternative or supplemental livelihood for coastal communities; • Support coastal law enforcement units as required; • Contract assistance through consultants and NGOs; • Support organization and mandate of municipal and barangay Fisheries and Aquatic Resources Management Council; • Monitor field activities and selected biophysical and socioeconomic indicators; • Implement revenue generation mechanisms through licenses, fees and taxes; • Network and collaborate with local and international funding institutions for program/project implementation; • Conduct IEC campaigns related to sustainable use of coastal resources; • Conduct site-specific research; • Collaborate with province, other municipalities or cities and national agencies to develop multi-municipal CRM plans as required for special management areas

AGENCIES	ROLES
2. Local Government Units (Provincial)	• Develop and implement policy and planning framework for CRM in province; • Provide technical assistance to municipalities and cities for coastal management planning and implementation; • Monitor and evaluate all coastal management activities and results in province; • Establish and maintain a training staff to train LGUs and other stakeholders in CRM; • Assist coordination of law enforcement for multi-municipal areas; • Establish, maintain, and update an information management system and database; • Assist each municipality and city to establish and maintain a municipal coastal database; • Provide financial incentives for coastal management based on results of monitoring; and • Assist the national government in developing and implementing policy and planning framework for CRM in the country
3. Community Stakeholders and Peoples' Organizations	• Participate in all CRM planning sessions in all levels of local government (barangay/municipality/city/province); • Provide members to barangay and municipal FARMCs; • Participate in stakeholder management organizations; • Volunteer for coastal management implementation activities (i.e. law enforcement, fisheries monitoring, and sanctuary establishment and management, etc.); • Provide local and traditional knowledge and experience in resource management; • Initiate IEC activities in the community; and • Source funds for community projects
4. Department of Environment and Natural Resources	• Formulate, in coordination with BFAR, a national strategic framework for CRM; • Assist with management of resources and areas under the mandate of DENR (i.e. mangroves, water quality, foreshore management, quarrying, and protected areas); • Provide material input assistance in specific projects under DENR's mandate; • Provide technical guidance to LGUs in coastal management planning and implementation; • Assist in training of LGUs and community stakeholders;

AGENCIES	ROLES
	• Identify and implement alternative or supplemental livelihood for coastal communities; • Coordinate with BFAR in the sustainable management of coastal and marine resources; • Monitor and evaluate progress in achieving goals and objectives for coastal and marine resources in the Medium Term Program Development Plan
5. Bureau of Fisheries and Aquatic Resources	• Formulate a national fisheries management plan as a component of a national strategic framework for CRM; • Assist with management of resources and areas under the mandate of BFAR (i.e. fisheries of all kinds, fishing techniques, stock assessment and aquaculture, among others); • Provide material input assistance in specific projects under BFAR's mandate; • Provide technical guidance in coastal management planning and implementation; • Assist in training of LGUs and community stakeholders; • Assist in fishery law enforcement; • Coordinate with DENR in the sustainable management of coastal and marine resources; and • Monitor and evaluate progress in achieving goals and objectives for coastal and marine resources in the Medium Term Program Development Plan
6. Department of Interior and Local Government	• Provide technical guidance and training to LGUs in enhancing the delivery of CRM as a basic service; • Provide operational coastal law enforcement units under the PNP Maritime Group; • Provide financial assistance in specific projects under DILG's mandate; • Monitor and evaluate progress in achieving the goals and objectives for coastal and marine resources in the Medium Term Program Development Plan
7. Department of Transportation and Communication	• Formulate policies, plans and regulations involving maritime transportation (MARINA); • Development of ports and harbours (PPA); • Assist in the implementation of laws in the high seas and waters of the Philippines; safeguard marine resources and the environment; prevent, mitigate and control marine pollution (PCG)

AGENCIES	ROLES
8. Department of Science and Technology	• Monitor aquatic and marine research and development projects; • Formulate strategies, policies, plans, programs and projects for aquatic and marine science technology; • Generate external funds
9. Philippine Council for Aquatic and Marine Research and Development	• Coordinate, plan, monitor and evaluate research development activities dealing with the country's aquatic resources; • Facilitate and program the allocation of government funds earmarked for fisheries and aquatic resources research and development, including coastal management initiatives of academic institutions; • Generate resource-based information for the management of the country's marine resources; • Act as the government lead agency in the implementation of the National Course on Integrated Coastal Management and the training program on ICM for LGUs; • Maintain the National Aquatic Resources Research and Development System and the PhilReefs, the information network on coral reefs and related ecosystems
10. Nongovernment Organizations	• Provide assistance at the community and barangay level to organize FARMCs and other resource management organizations; • Provide technical services to LGUs for implementing community level interventions; • Provide information and education services at the community, municipal and national levels; • Provide legal services for environmental and fisheries law enforcement; • Assist with monitoring of biophysical and socioeconomic indicators; • Provide a conduit for financial assistance to LGUs for coastal management
11. Academic Institutions	• Assist in analyzing information for coastal environmental profile; • Assist in designing and implementing a monitoring program for biophysical, socioeconomic and legal-institutional indicators in CRM for LGUs; • Assist in integrating existing data and information into ICM plans; • Assist in formulating CRM plans and packaging of project proposals;

AGENCIES	ROLES
	• Provide assistance in designing and maintaining a management information system and database for coastal management; • Assist in designing coastal management policies for multi-municipal management areas; • Assist in training of LGUs and communities; • Assist in designing IEC and community development programs and strategies for LGUs, NGOs and POs
12. Donors (national and international)	• Provide financial assistance to national and local governments for CRM projects; • Provide financial assistance for building sustainability in CRM through technical assistance in program design, policy planning and implementation, training, education, monitoring, and other aspects of coastal management programs; • Assist to coordinate multisectoral collaboration and policy support for CRM; and • Provide international experience in coastal management policy and implementation

Source: Coastal Resource Management Planning, Philippine Coastal Management Guidebook Series No. 3, 2001.

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