



### Blue Economy

- A version of the *green economy* made relevant to seas and oceans.
- It emphasizes the sustainable management of marine resources.

### Regional Public Goods (RPG)

- Framework to operationalize blue economy policies.
- Identify common elements to ensure sustained and beneficial outcomes for all stakeholders

### Regional Public Goods (RPG)

1. **Pure** - non-rivalrous, non-excludable
2. **Impure** – either non-rival or non-excludable
3. **Club goods** – some degree of excludability, benefitting only members
4. **Joint products** – different outcomes with their respective impacts or benefits

### Aggregation/Production Technology

1	2	3	4
<b>Summation</b>	<b>Weighed sum</b>	<b>Weakest link</b>	<b>Best shot</b>
Overall level of public good = sum of country contributions	Each agent's contribution can have a different additive impact on the overall level	The smallest effort determines the public good level	The largest effort determines the public good level

### Types of Regional Public Goods and their Aggregation/Production Technologies

AGGREGATION/ PRODUCTION TECHNOLOGY	Examples			
	PURE PUBLIC	IMPURE PUBLIC	CLUB	JOINT PRODUCT
<b>Summation</b>	Limiting air pollution; preventing desertification	Providing public health infrastructure; market boards for commodities	Satellite communication network; transnational parks	Deterrence through peace-keeping; preservation of rain forests
<b>Weighted sum</b>	Reducing ambient pollutants; limiting the spread of HIV-AIDS	Limiting run-off pollution; curbing acid rain	Free trade agreements; power grid	Eliminating threat of terrorism; eliminating threat of revolutions
<b>Weakest link</b>	Inhibiting the spread of a pest; eliminating a disease; labor standards	Surveillance of a disease outbreak; drug interdiction	Transportation network; Basel Accord among G-10 countries	Family planning; security intelligence
<b>Best shot</b>	Cure for orphan diseases	Agricultural research findings; genetically engineered crops	Crisis management squad; satellite launch site	Quelling of flare-up by peacekeepers; bioprospecting

Source: Ace and Sandler (2002:21), with some adaptations based on the authors' analyses.

### Technology for Marine RPGs

**Best shot**

- Research on marine ecosystems
- Development of clean technologies to generate energy from the blue economy

**Weakest Link**

- Combating smuggling and human trafficking
- Preventing environmental damage from energy and resource extraction activities

**Weighted Sum**

- Managing fisheries stocks
- Implementing trade and investment agreements

## Lessons from 14 cases of Regional Public Goods Provision

### Collective Action

1. **Well-defined cooperation frameworks**—embodied in legal framework agreements and treaties—including:

- Barents Sea Fisheries Management** (i.e. several quota and zonal agreements between Norway and Russian Federation),
- Pelagos Sanctuary for Mediterranean Marine Mammals** (i.e. an agreement to create a sanctuary signed by France, Italy and Monaco),
- Danube River Basin Preservation** (i.e. the Danube River Protection Convention signed by EU countries) and
- Western and Central Pacific Tuna Management** (i.e. several agreements to regulate quotas and catch areas signed by Pacific Island countries).

### Organizations for International Cooperation

2. Creation of **organizational entities** tasked with facilitating cooperating countries' collaborative actions to carry out the agreements and treaties.





### Role of Evidence

3. Importance of generating **credible and unbiased data and evidence** in spurring and sustaining collective action

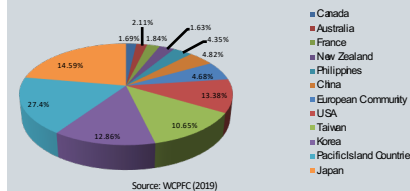
*(e.g. role of research on marine ecosystems and fish stocks in motivating sustainability and preservation concerns, and in guiding quota management & benefit-sharing arrangements)*



### Cooperation framework of concerned countries

4. Clarification of **burden-sharing arrangements** in the provision of the RPG, just as benefit-sharing is clarified (e.g. in fisheries, through clear catch allowances vis-à-vis over-all sustainable quotas established)

Contributions to the WCPFC fund across member countries, 2019



- Canada
- Australia
- France
- New Zealand
- Philippines
- China
- European Community
- USA
- Taiwan
- Korea
- Pacific Island Countries
- Japan

Source: WCPFC (2019)

**The use of side payments**

5. **Side payment schemes** in which transfers are made (either monetary or non-monetary) by one member country to another

- **Cooperation in the management of Pacific Salmon** – provision of the US of a significant proportion of the initial funding established to support scientific research & conservation initiatives
- **Cooperation in the management of West & Central Pacific Tuna** – a move by some Pacific Island Countries to allow other countries' fishing fleets to operate within their territorial waters in exchange for the latter's commitment not to fish in the high seas in between the former's EEZs


**External Parties**

6. Role of **external parties** in some agreements (e.g. Asian Development Bank and the Global environmental Facility in the Coral Triangle initiative; and the European Union to some extent in the preservation of the Danube river basin).

This type of involvement may be necessary in cases where there are challenges in the ability of the countries to adequately provide the RPG.



**The Philippine Blue Economy: Challenges & Opportunities**



International marine scientists in 2006 have regarded the Philippines as the "Center of the Center" of Marine Biodiversity in the world, surpassing the Great Barrier Reef of Australia

**Monetary Value of Marine Ecosystems**

**USD 970 billion - USD 1.5 trillion**

Conservative monetary value that marine ecosystems can contribute to the economy per year (in PPP USD, 2007 prices) (Azanza, et al , 2017)

**GDP and Employment of Maritime Sector (2012)**

Sector	Value added (Php millions)	Total employed
<b>Fishing</b>	170,330,000	1,481,000
<b>Manufacturing</b>	14,069,162	34,328
Processing and preserving of fish and fish products and other seafoods	6,359,367	27,938
Building and repairing of ships and boats	7,709,795	6,390
<b>Transport, Storage, and Communication</b>	25,991,136	30,384
Ocean passenger transport	4,302,751	1,248
Ocean freight transport	5,100,088	8,388
Interisland water passenger transport	4,627,895	4,630
Supporting and auxiliary activities to water transport	11,960,402	16,118
<b>Total Maritime</b>	<b>210,390,298</b>	<b>1,525,712</b>
<b>Gross Domestic Product</b>	<b>8,026,143</b>	
<b>Total Employed Labor Force</b>		<b>35,061,000</b>
<b>Percent of GDP/ Percent of Labor Force</b>	<b>2.62</b>	<b>4.35</b>

Large potential, yet relatively small economic footprint so far (if measured traditionally) – **2.26% of GDP** and **4.35% of employed.**

**GULF NEWS ASIA**  
 India Pakistan Philippines

## Poachers destroy hectares of Philippines coral reef

More than 21,000 pieces of black corals harvested by poachers seized by customs officials

Published: May 25, 2018 18:08  
 By Barbara Mae Dacanay, Bureau Chief

Manila: Poachers destroyed about 7,000 hectares of coral reef in Moro Gulf and Sulu Sea in the south Philippines when they harvested more than 21,000 pieces of black corals, which were seized by customs authorities in Manila two weeks ago, a local paper said.

"One reef complex - twice the size of Manila district - was decimated. It was like a forest that has been cut down," Ludivina Labe, a senior marine biologist of the Bureau of Fisheries and Aquatic Resources (Bfar) told the *Inquirer*.

**MANILA BULLETIN**  
 The Nation's Leading Newspaper

NEWS OPINIONS BUSINESS ENTERTAINMENT SPORTS LIFESTYLE TECHNOLOGY FAITH OFFBEAT

Home Category / National / Legarda urges various gov't agencies to deal with rampant illegal poaching in high seas

## Legarda urges various gov't agencies to deal with rampant illegal poaching in high seas

Published June 4, 2018, 6:11 PM

By **Mario Casayuran**

Senator Loren Legarda, chairwoman of the Senate climate change committee, today urged various government agencies to deal with rampant illegal poaching in the high seas, especially within the Moro Gulf and the Sulu Sea.

34 SHARES

POPULAR POST

Two more convicts in Chlong sisters' rape-slay surrender

**RAPPLER** News Video Business Newbreak MorePH Views Life & Style Entertainment Sports Tech BrandRap #PH

PHILIPPINES

## AFP reports 7 'foreign terrorists' in Sulu, Basilan, Maguindanao

The commander of the Armed Forces in Western Mindanao says the 7 suspects are grooming suicide bombers among local extremist groups

JC Gottinga  
 Published 4:18 PM, July 23, 2019  
 Updated 4:39 PM, July 23, 2019

Facebook  
 Twitter  
 Email



AT LARGE: This image from the main battle area of the 2017 siege of Marawi City is a grim reminder of the fighting

**ATENEO** SCHOOL OF GOVERNMENT  
 Forming Leaders. Leading Reforms.

## Sulu Sea Initiative



- Every year more than 100,000 ships pass through the Sulu-Sulawesi Seas carrying 55 million metric tons of cargo and 18 million passengers (Indonesian Foreign Ministry, 2015)
- The Philippines, Indonesia, and Malaysia agreed to undertake **trilateral patrols in the Sulu-Sulawesi Seas to combat terrorism, piracy, kidnapping, and other crimes in the area**

Defense Secretary Delfin Lorenzana joins Indonesian Minister of Defense Ryamizard Ryacudu and Malaysian Minister of Defense Hishammuddin Hussein during the launch of the Trilateral Maritime Patrol in Ternate, Indonesia. Hishammuddin Hussein's Communications Team/Released (Source: Philippine Star)



## References

- Akansa, Rhodora V., Porfirio M. Alibio, Rensiel Cabral, Marie Antonette Junio-Mendez, Ernesto M. Pernia, Ronald U. Mendoza, and Charles Siriban. 2017. "Valuing and Managing the Philippines' Marine Resources Toward A Prosperous Ocean-Based Blue Economy".
- Bureau of Fisheries and Aquatic Resources. 2015. Philippine Fisheries Profile 2015. Quezon City: BFAR.
- Arcs, Daniel G. and Todd Sandler. 2002. "Regional public goods: Typologies, provision, financing and development assistance". Stockholm: IGO.
- Arnason, R., G. Magnússon and S. Agnarsson. 2000. "The Norwegian Spring: Spawning Herring Fishery: A Stylized Game Model". *Marine Resource Economics* 15(4): 293-315.
- Chand, S., R. Grafton and E. Petersen. 2003. "Multilateral Governance of Fisheries: Management and Cooperation in the Western and Central Pacific Tuna Fisheries". *Marine Resource Economics* 18(4): 329-344.
- Dyck, A.J. and U.R. Sumaila. 2010. "Economic impact of ocean fish populations in the global fishery". *Journal of Bioeconomics* 11(2): 227-243.
- Gulland, J. 1980. "Some problems of the management of shared stocks". Fisheries Technical Paper No. 206. FAO, Rome, Italy.
- Levhart, D. and L. Mirman. 1980. "The Great fish war: an example using a dynamic Cournot-Nash solution". *Bell Journal of Economics* 11: 649-661.
- Munro, G. 2003. "On the Management of Shared Fish Stocks". Paper Presented at the Norway-FAO Expert Consultation on the Management of Shared Fish Stocks, Bergen, Norway, October 7-10. (<http://www.fao.org/docrep/016/y4652e03/y4652e03.htm>).
- WCPCF (West and Central Pacific Fisheries Commission). 2012. "Report on General Account Fund Contributions and Other Income for 2012". Available at <http://www.wcpf.int/meetings/2012/992-Regular-Session-Commission>