INTERNATIONAL COOPERATION AND THE BLUE ECONOMY

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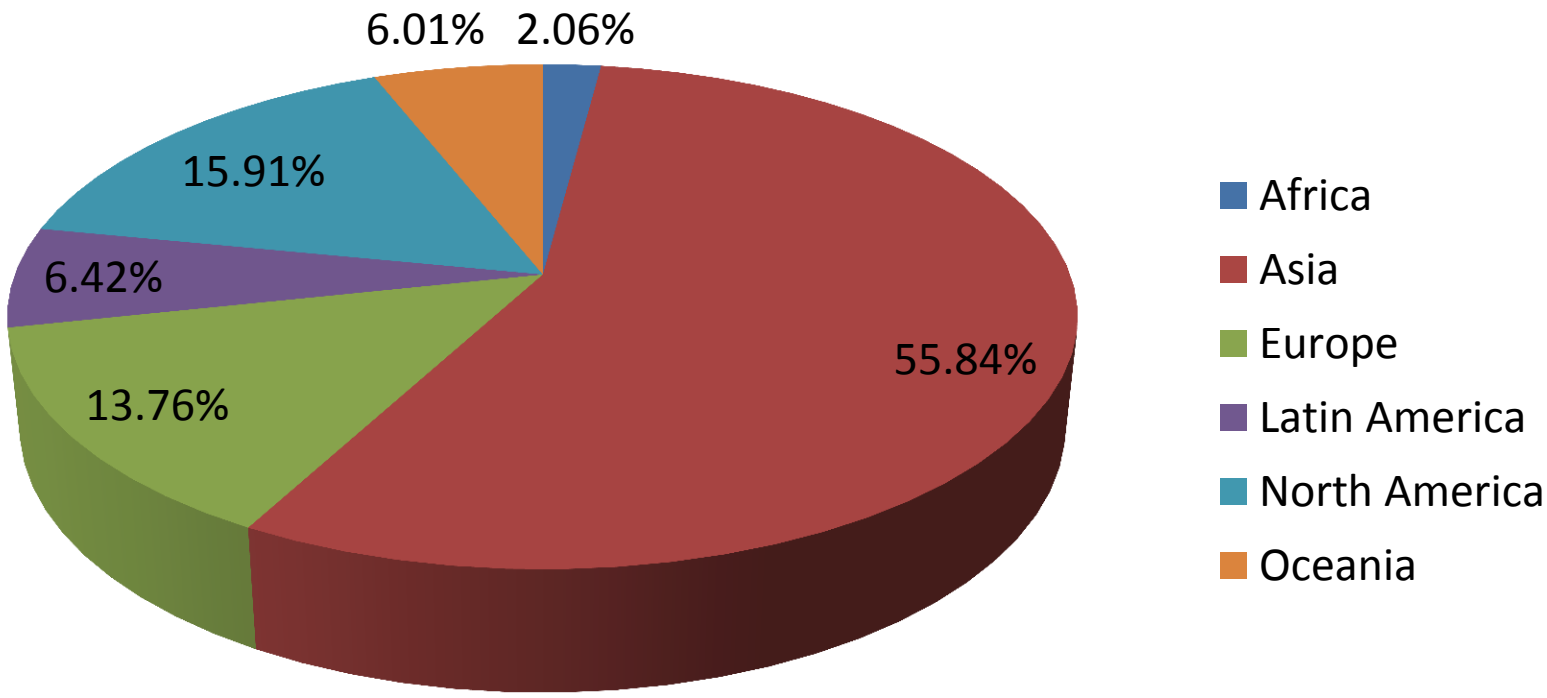
Introduction

- "Blue economy" -- a version of the "green economy" made relevant to seas and oceans. It emphasizes the sustainable management of marine resources.

- Global revenue from fisheries alone amounts to about US$80-85 billion a year (Dyck and Sumaila 2010).

- Broader economic activity supported by marine fisheries approximately US$240 billion annually, or about three times the landed value of marine fisheries (Dyck and Sumaila 2010).

Distribution of Total Household Income Supported by the Global Fishing Industry, 2003



Source: Authors' computations based on Dyck and Sumaila (2010): 236

Types of Regional Public Goods and their Aggregation/Production Technologies

Aggregation/Production Technology	***Examples***			
	Pure Public	Impure Public	Club	Joint Product
Summation: Overall level of public good equals sum of country contributions	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
Weighted sum: Each agent's contribution can have a different additive impact on the overall level	Reducing ambient pollutants; liming 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
Weakest link: The smallest effort determines the public good level	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
Best shot: The largest effort determines the public good level	Cure for orphan diseases	Agricultural research findings; genetically engineered crops	Crisis management squad; satellite launch site	Quelling of flare-up by peacekeepers; bioprospecting

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

Basic issues on the management of shared marine resources

- Non-cooperation in the management of shared marine resources can lead to sub-optimal outcome from the society's point of view (Munro 2003; Levhari and Mirman 1980; Arnason, Magnusson and Agnarsson 2000; Chand, Grafton and Petersen 2003)

- Some necessary conditions for the attainment of a stable cooperative arrangement (Munro 2003):
  - Pareto-optimality
  - Individual rationality
  - Time-consistency

Cases of international cooperation

Cases	Countries involved
Barents Sea Fisheries Management	Norway, Russia and Iceland
Coral Triangle Region Preservation	Malaysia, Philippines, Indonesia, Papua New Guinea, Solomon Islands and Timor Leste
Danube River Basin Preservation	Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Moldova, Montenegro, Romania, Serbia, Slovak Republic, Slovenia and Ukraine
Ganges River Water Resources Management	India and Bangladesh
Nile River Basin Preservation	Kenya, Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Rwanda, Sudan, South Sudan, Tanzania, and Uganda
Pacific Salmon Management	United States and Canada
Pelagos Sanctuary	France, Italy and Monaco
Prespa Lake Basin Preservation	Albania, Greece and Macedonia
Southern Blue Fin Tuna Management	Australia, Japan, Republic of Korea, Taiwan, New Zealand and Indonesia
Western and Central Pacific Tuna Management	Pacific Island Countries and distant water fishing nations
Malaysia-Thailand Joint Development Initiative	Malaysia and Thailand
Guinea-Bissau-Senegal Joint Development Initiative	Guinea-Bissau and Senegal
Norway-Iceland Joint Development Initiative	Norway and iceland
Joint Development Initiative in the Timor Gap	Australia and East Timor (previously Australia and Indonesia)
Malacca Strait patrols	Singapore, Malaysia and Indonesia
Sulu Sea patrols	Malaysia, Indonesia and the Philippines

Lessons from cases of international cooperation

- Presence of **well-defined cooperation frameworks** that are embodied in legal framework agreements and treaties
  - 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).

Organizational entities

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

icpdr iksd
International Commission for the Protection of the Danube River
Internationale Kommission zum Schutz der Donau

AGENCE DE GESTION ET DE COOPERATION ENTRE LE SENEGAL ET LA GUINEE-BISSAU

PACIFIC SALMON COMMISSION

Western and Central Pacific Fisheries Commission

Credible data and evidence

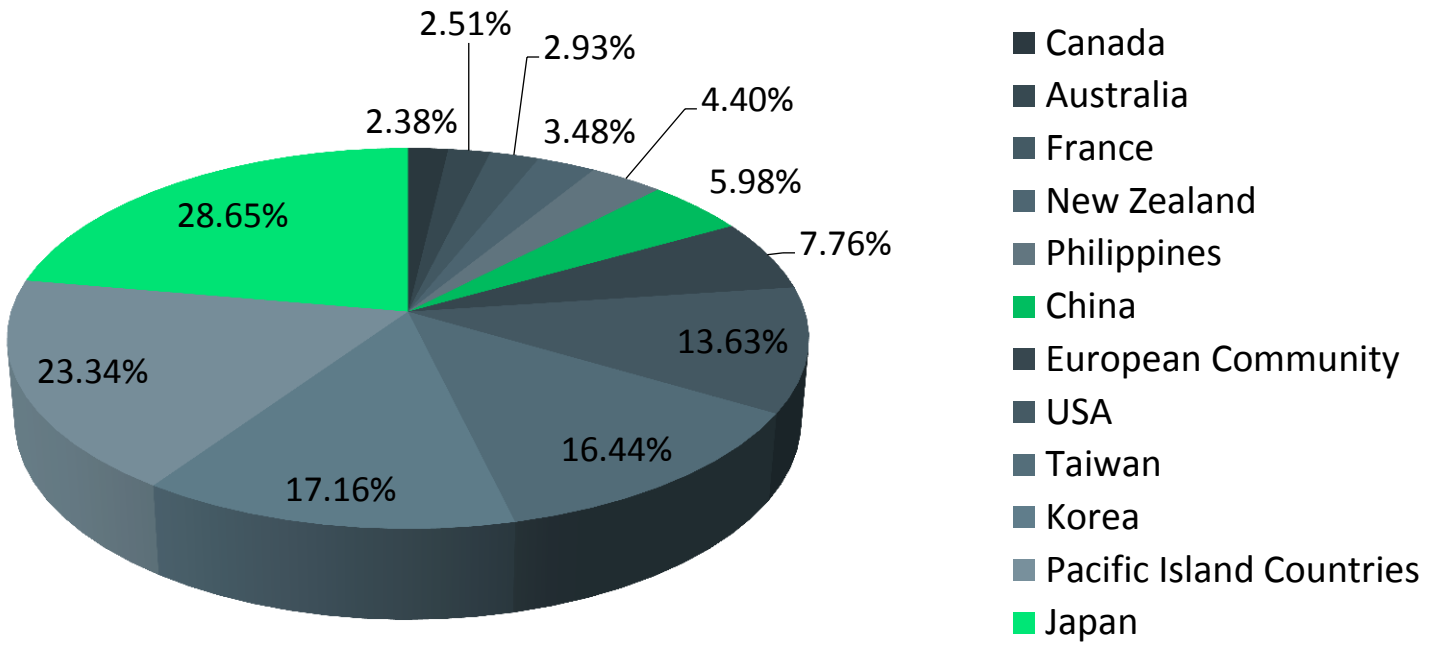
• Importance of generating **credible and unbiased data and evidence** to sustain and spur collective action.

- Greater returns associated with cooperation with higher quality of information regarding the shared resource available to each country (McKelvey, Miller and Golubtsov 2003).
- Cooperation in research as the first stage of cooperation in the joint management of shared resources (Gulland 1980).
- Role of cooperation in research in the case of Barents Sea Fisheries Management

Burden and benefit sharing

- Clarification of **burden-sharing (as well as benefit-sharing) arrangements**

Contributions to the WCPFC fund across member countries, 2010

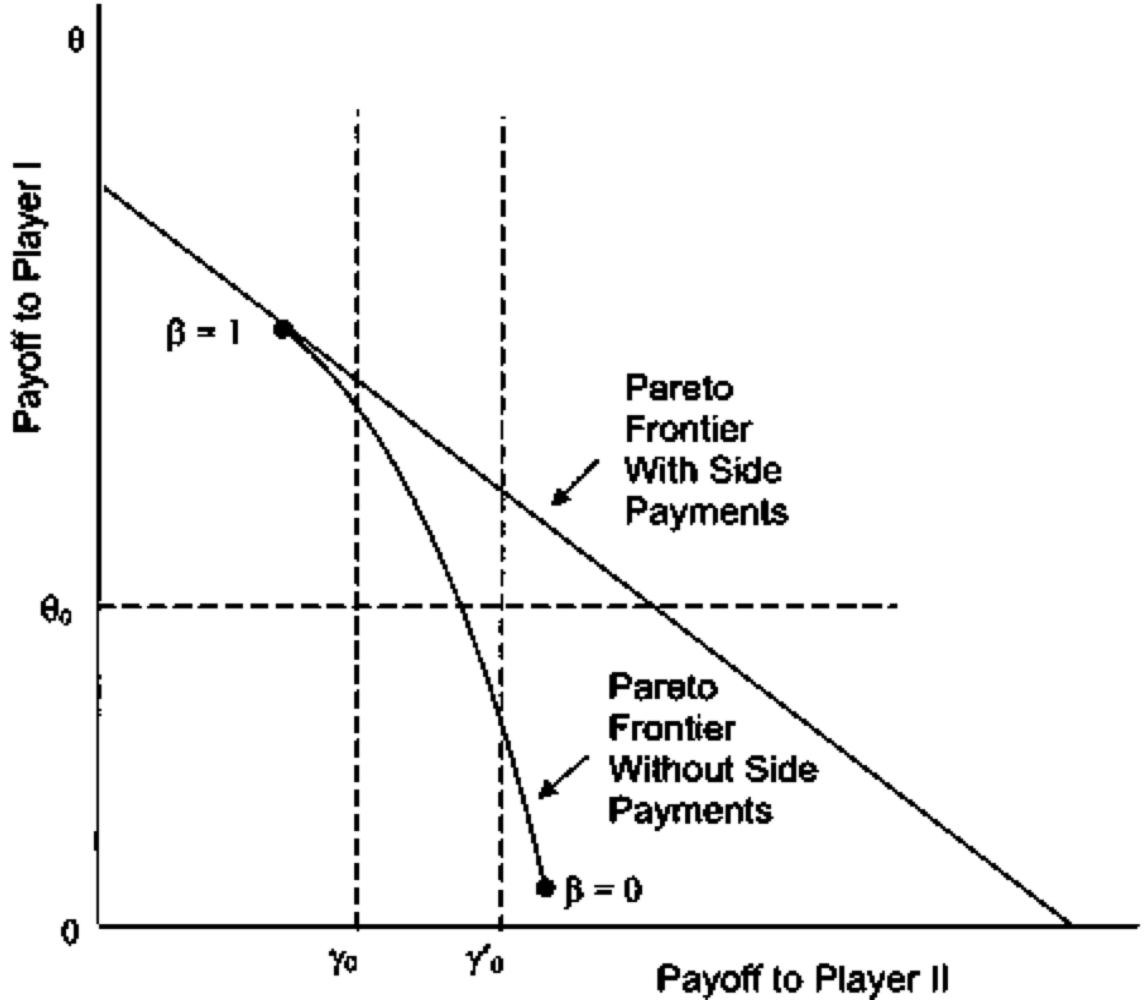


Source: WCPFC (2012):4

Side payments

- Use of **side payments** in some cooperation initiatives
  - Side payment scheme in the case of Russia and Norway (Barents Sea Fisheries Management) and management of tuna stock in Western and Central Pacific
  - McKilvey, Miller and Golubtsov (2003): Side payments as way to induce cooperation in the presence of information asymmetry

Cooperative game, with and without side payments



Source: Figure 2 of Munro (2003)

External parties

- Role of **external parties** in some agreements
  - Asian Development Bank and the Global Environmental Facility in the Coral Triangle initiative
  - European Union in the management of the Danube River basin

Cooperation in maritime security

- Importance of maritime economy for some countries (e.g. countries in Sulu-Sulawesi Seas and Malacca Strait areas)

- Cooperation among countries on maritime security
  - Malacca Strait patrols (Malaysia, Indonesia and Singapore)
  - Sulu Sea trilateral patrols (Malaysia, Indonesia and the Philippines)

Conclusion

- Management of shared marine resources and ecosystems as regional public goods

- Cases considered suggest the possibility of win-win international cooperation strategies in managing natural resource wealth.

References

- Arce, Daniel G. and Todd Sandler. 2002. "Regional public goods: Typologies, provision, financing and development assistance." Stockholm: EGDI.
- Arnason, R., G. Magnusson and S. Agnarsson. 2000. "The Norwegian Spring- Spawning Herring Fishery: A Stylized Game Model." *Marine Resource Economics* 15(4): 293-319.
- Burke, L., K. Reytar, M. Spalding and A. Perry. 2011. *Reefs at Risk Revisited*. Washington DC: World Resources Institute.
- 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* 12(3): 227-243.
- Gulland, J. 1980. "Some problems of the management of shared stocks." Fisheries Technical Paper No. 206, FAO, Rome, Italy.
- Levhari, D. and L. Mirman. 1980. "The Great fish war: an example using a dynamic Cournot-Nash solution." *Bell Journal of Economics* 11: 649-661.
- McKelvey, Robert, Kathleen Miller and Peter Golubstov. 2003. "Fish Wars Revisited: An Incomplete-Information Harvesting Game." Chapter 6 in Wesseler, Justus, Hans-Peter Weikard and Robert Weaver, Editors, *Risk and Uncertainty in Environmental and Natural Resource Economics*. Cheltenham, UK: Edward Elgar, 93-112.
- Miller, Katherine and Gordon Munro. 2004. "Climate and Cooperation: A New Perspective on the Management of Shared Fish Stocks." *Marine Resource Economics* 19: 367-393.
- 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/006/Y4652E/y4652e03.htm].
- Munro, Gordon, Annick Van Houtte and Rolf Willmann. 2003. "The conservation and management of shared fish stocks: legal and economic aspects." Fisheries Technical Paper 465, FAO, Rome, Italy.
- WCPFC (West and Central Pacific Fisheries Commission). 2012. "Report on General Account Fund Contributions and Other Income for 2012." Available at: http://www.wcpfc.int/meetings/2012/9th-Regular-Session-Commission

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