

Transdisciplinary Approaches to Ocean Governance

- 1) What do you feel is the most significant threat damaging the ocean ecosystem in your backyard?
- 2) What solution would you propose to respond to this threat?
- 3) What approach (intra-, multi-, inter- or trans-) would you adopt to implement your solution?



Attaining Sustainable Ocean Governance through “Trans-disciplinary” Approaches

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Scheme





I. Importance & Challenges

I. Context: Importance of Oceans



Oceans produce about half the oxygen we breathe



Ultimate source of Water



Major sink of CO₂ (30%)



Blue Economy - asset base more than \$24 trillion. Market value of marine and coastal resources - US\$3 trillion/yr.



Identified species - 200,000 (actual numbers runs in millions)



Fishers & Aquaculture – livelihood to 10–12% of the world's population



Fish major protein to 3 billion people



Supports 80% of global trade



Sun, sand and sea tourism



60% of world population live within 100 kms. of the coastline



32% of global supply of hydrocarbons





New
Delhi; The
Most
Polluted
City in the
World ...

I. Context: Challenges

- Fragile ecosystems, less stable than terrestrial
- Rate of urbanisation very high (13 of the world's 20 megacities coastal)
- 87% of global fish stocks are fully or over exploited
- \$23 billion worth of fish is being illegally caught every year
- 100 million sharks are killed for their fins every year
- In the last 150 years, 29% of seagrass habitats lost
- 20 % coral reefs have been destroyed
- Migration by sea – From Jan. – Aug. 2018, 58,158 persons entered Europe by sea & 1,514 died during their journey.
- Piracy – 233 incidents in 2018 with 57 incidents in the South China Sea

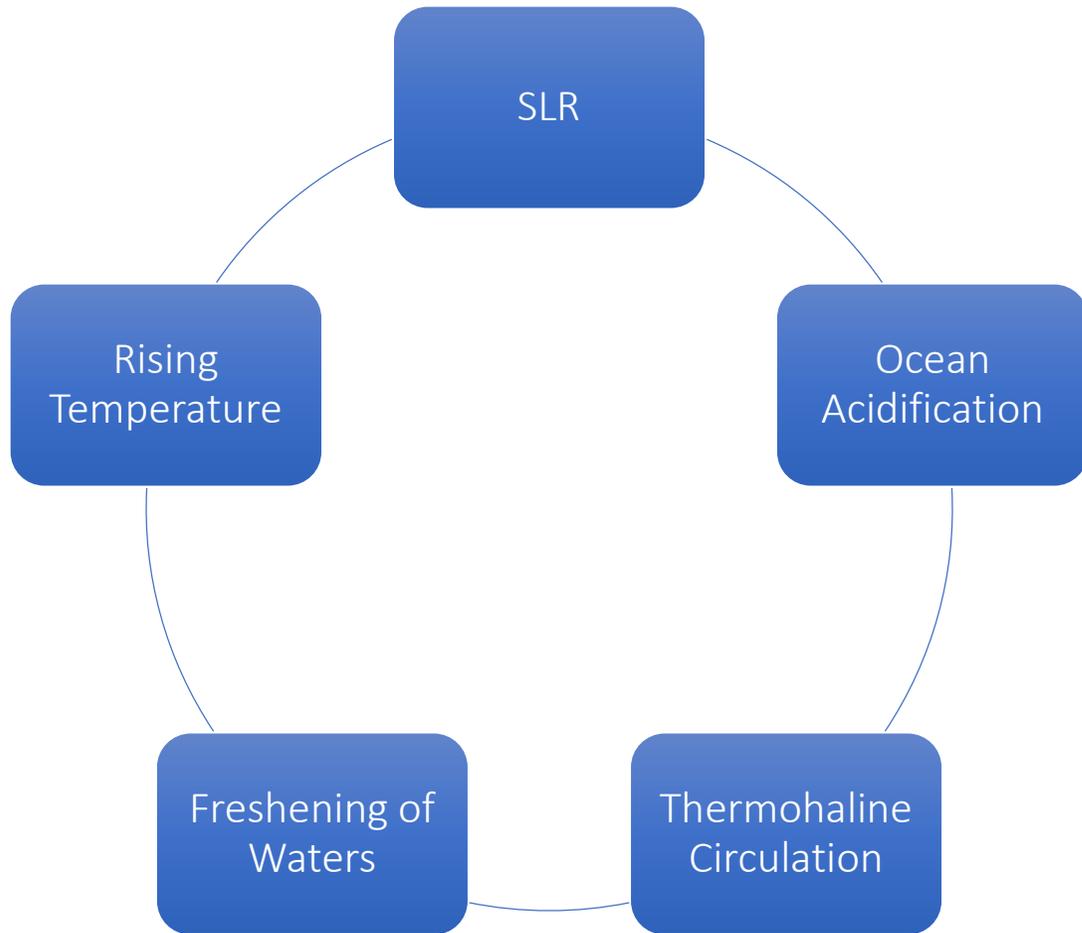


I. Context: Challenges

- 40% of the ocean is heavily affected by pollution
- GPGP - 1.6 million km² (twice the size of Texas & three times the size of France)
- Nearly 18,000 pieces of plastic litter in every square km. of ocean
- 100,000 turtles and marine mammals are killed by plastic **marine litter**
- 2050 - plastics will outweigh fish



I. Context: Climate Change Impacts



Thermal Expansion (steric effect) + melting of polar ice sheets and glacial ice + groundwater extraction (fossil water) + thawing of permafrost

IPCC in 4AR - by 2100, increase in sea level by 19 to 58 cm (based on the emission trajectory)

AR 5 - Between 2081-2100, RCP 8.5 (Rep. Concentration Pathway), the sea level rise – 0.45 to 0.82 meters

I. Context: Climate Change Impacts (SLR)

- Inundation of low-lying areas, coastal erosion
- SIDS (58 SIDS) - size, geography, & remoteness - Sinking islands phenomenon
- Contamination of coastal aquifers, estuaries
- Destruction of coastal agriculture & coastal infrastructure , Ports, tourism, fisheries
- Hurricanes & flooding
- Mangrove destruction; coastal squeeze due to human activity & SLR
- Ocean Warming has led to a decrease in the catch potential
- Migration - Climate change refugees
- 2050 - 25 million to 1 billion





Healthy - Dec 2014

Dying - Feb 2015

Dead - Aug 2015

Ocean chemistry is changing faster than at any time in the last 300 million years - **Coral Bleaching**



II. Sustainable Ocean Governance

II. Understanding Sustainable Development

- Modern avatar of SD – Brundtland Commission Report, 1987
- ..."environment" is where we live; and "development" is what we all do in attempting to improve our lot within that abode. The two are inseparable.
- “Development that meets the needs of the present generation without compromising the ability of the future generations”
- 1992 - Earth Summit in Rio de Janeiro more than 178 countries adopted Agenda 21 & some path breaking Conventions
- 2000 - Millennium Declaration & its eight Millennium Development Goals (MDGs)
- 2002 - World Summit on Sustainable Development & the Johannesburg Declaration on Sustainable Development & the Plan of Implementation



II. Understanding Sustainable Development

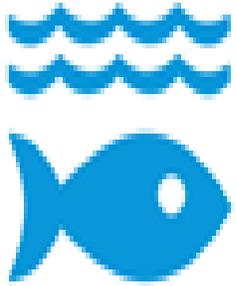
- 2012- Rio+20 -"The Future We Want" decided, to launch a process to develop a set of SDGs to build upon the MDGs
- 2015 - UN Sustainable Development Summit adopted the 2030 Agenda for Sustainable Development, with 17 SDGs
- Approaches to SD –
 1. Hard Law [UNFCCC, CBD, Desertification]
 2. Soft Law [Agenda 21, Johannesburg Declaration on Sustainable Development, 2002, Rio+20 (2012)]
 3. Action Oriented [UN Millennium Declaration & Millennium Development Goals, 2000 (8 international development goals to reduce extreme poverty by 2015; Johannesburg Plan of Implementation & Type II partnerships; 2030 Agenda for Sustainable Development)]



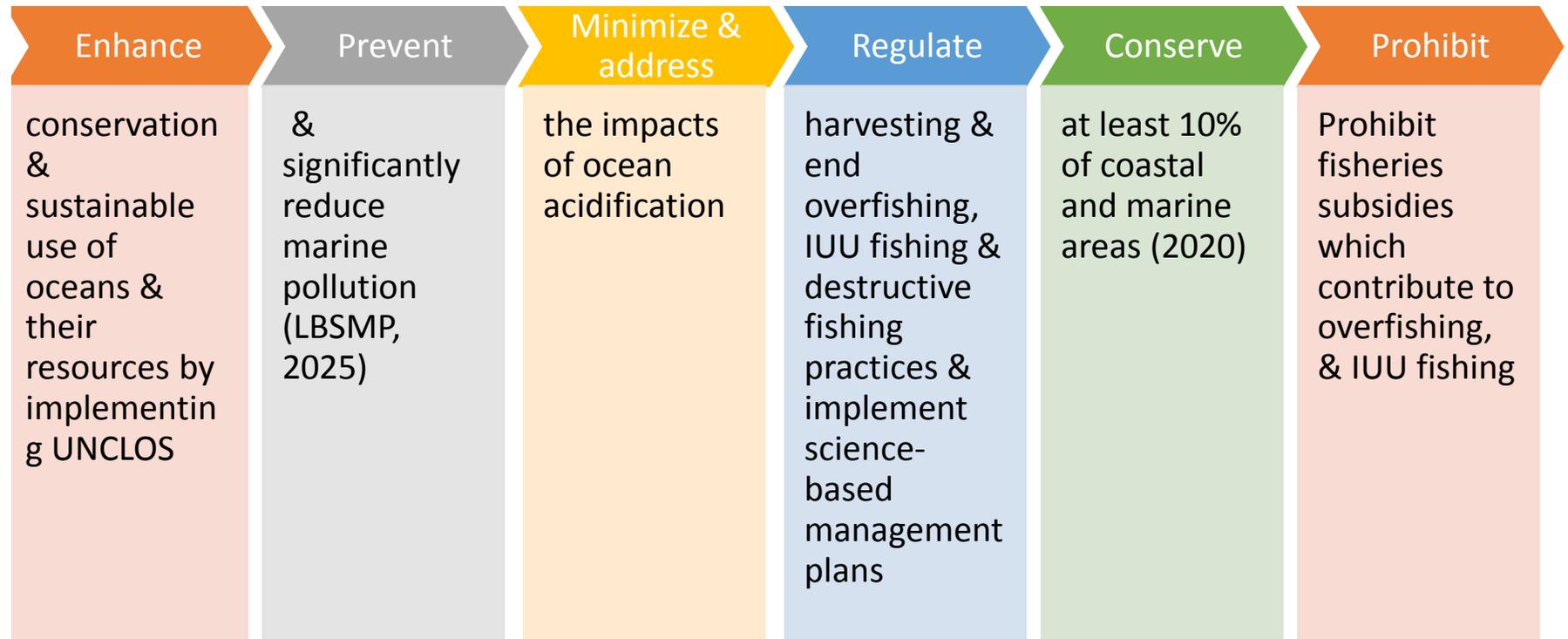
II. Sustainable Development & Sustainable Ocean Development: The 2030 Agenda



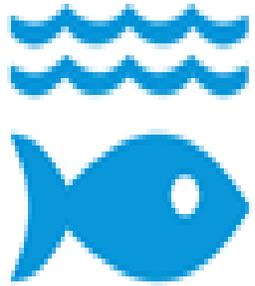
Sustainable Ocean Development



**I SUPPORT
GOAL 14
LIFE BELOW
WATER**



Sustainable Ocean Development



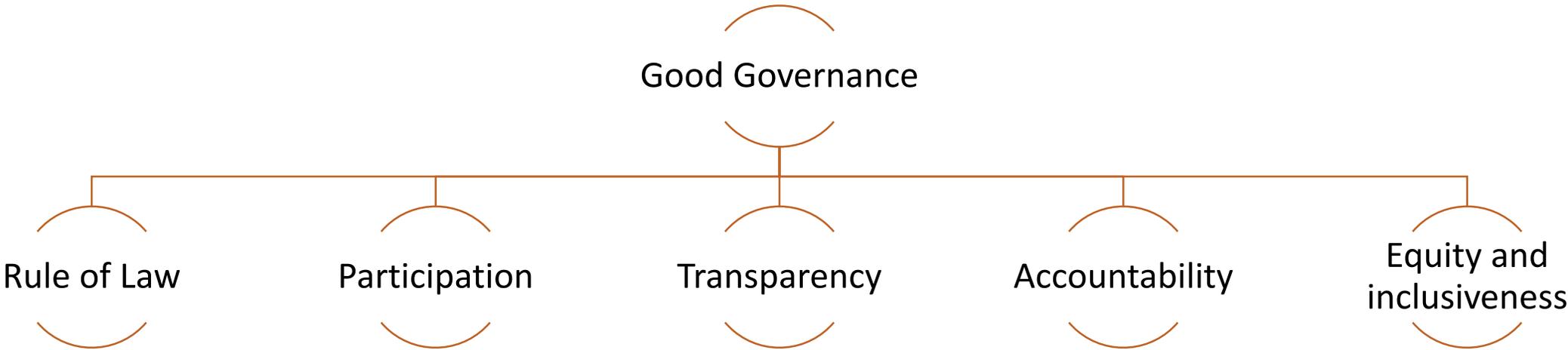
I SUPPORT
GOAL 14
LIFE BELOW
WATER

- **Increase** economic benefits to SIDS & LDCs by sustainable use of marine resources
- **Provide** small-scale artisanal fishers access to marine resources and markets
- **Increase** scientific knowledge, develop research capacity and transfer marine technology

II. Meaning: Sustainable Development & Good Governance

- GG – an *essential pre-requisite* for SD with focus on HUMAN DEVELOPMENT
- Johannesburg Plan of Implementation - “Good governance within each country and at the international level is essential for sustainable development”
- GG- recognizes the **joint participation** of state & non-state actors, civil society & private sector

II. Sustainable Development & Good Governance



II. Meaning: Good Ocean Governance (GOG)

- “... the way in which ocean affairs are governed, not only by governments, but also by *local communities, industries and other ‘stakeholders’*. It includes *national and international law, public and private law. ... custom, tradition and culture and the institutions and processes created by them.*”

- Elisabeth Mann Borgese



II. Challenges



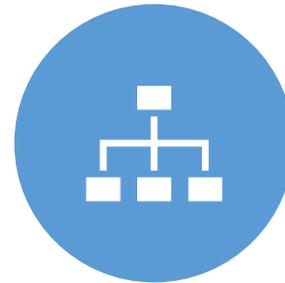
Sectoral governance



Multifarious bodies with diverse objectives



Overlapping jurisdiction & transboundary nature of issues



GOG as a 'functional' matter of institutions and processes; missing the key ingredient of guidance in terms of Values



III. Principled Ocean Governance

III. Towards Principled Ocean Governance



Need for holistic good ocean governance



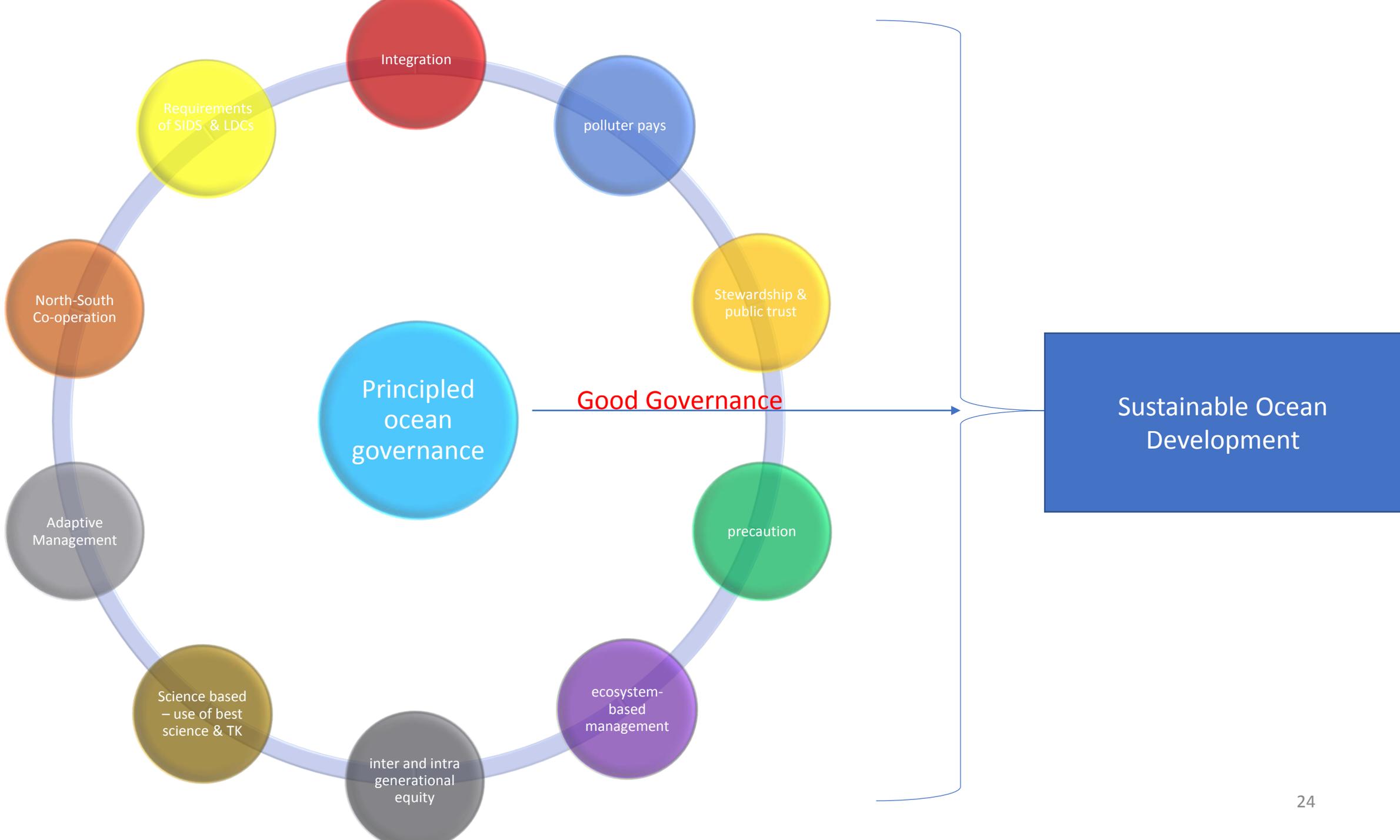
Linking governance with principles helps to secure coherence



Rooted in Values



Promotive of SD





Applying the Principled Approach at the International Level

-
- Development of an international legally binding instrument under the UNCLOS on the Conservation and Sustainable use of marine biological diversity of areas beyond national jurisdiction (A/CONF.232/2019/6)
 - promoting sustainable development (Preamble)
 - Aspiring to achieve universal participation (Preamble)
 - Integrated approach (art. 5)
 - Ecosystem resilience & ecosystem integrity (art. 5)
 - Polluter pays (art.5)
 - Accountability (art.5)
 - Precaution, EIA (Part IV), etc.

Applying the Principled Approach at a National Level



Preamble –



Canada Oceans Act, 1996

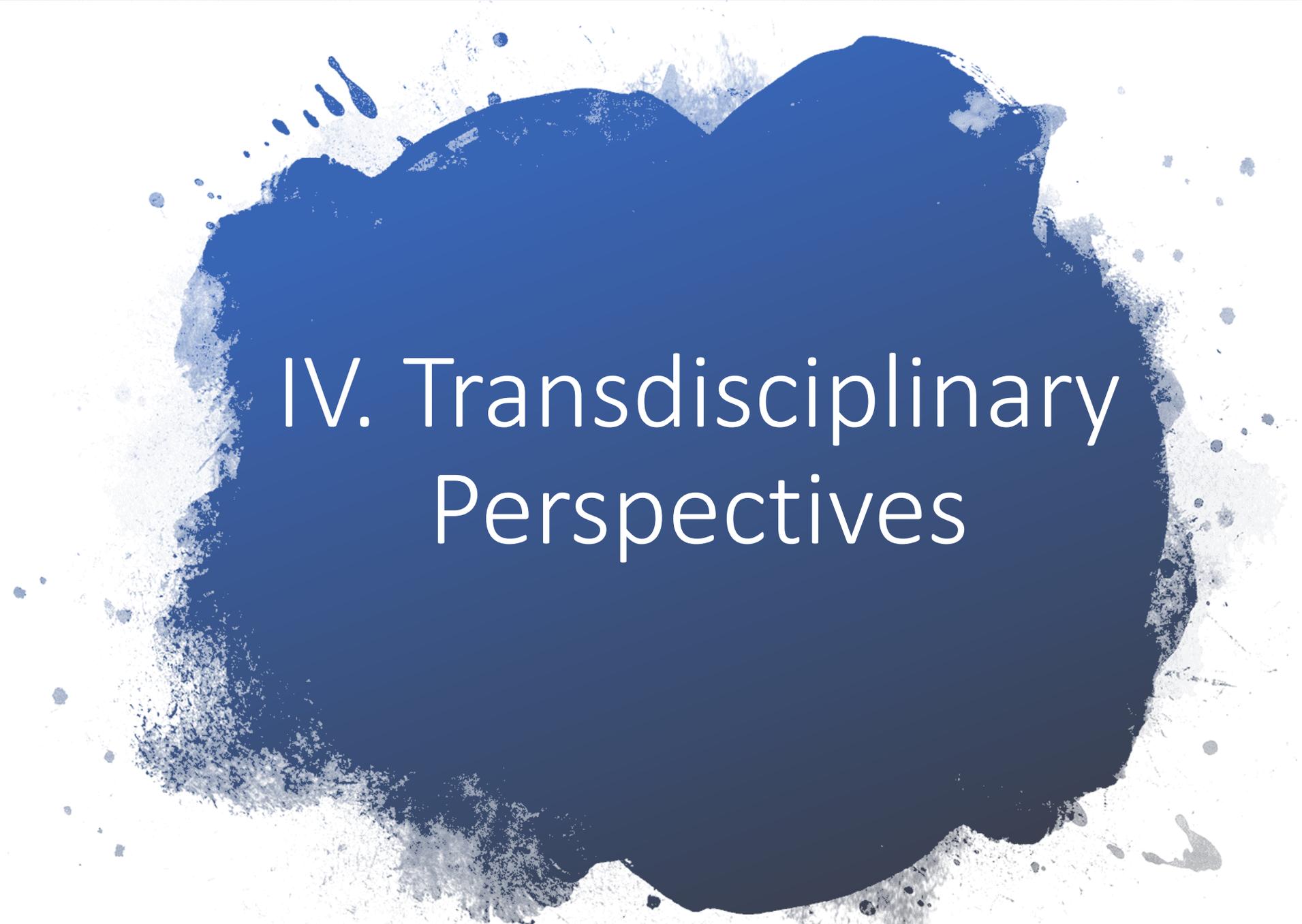
The Arctic, the Pacific and the Atlantic, are the **common heritage** of all Canadians;

the **sustainable development of the oceans and their resources**;

ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment

promotes the wide application of the **precautionary approach to the conservation**

integrated management of oceans and marine resources



IV. Transdisciplinary Perspectives

Realizing
Principled
Ocean
Governance

Intradisciplinary

Multidisciplinary

Interdisciplinary

Transdisciplinary

Multidisciplinary

Anthropology

Law

Policy

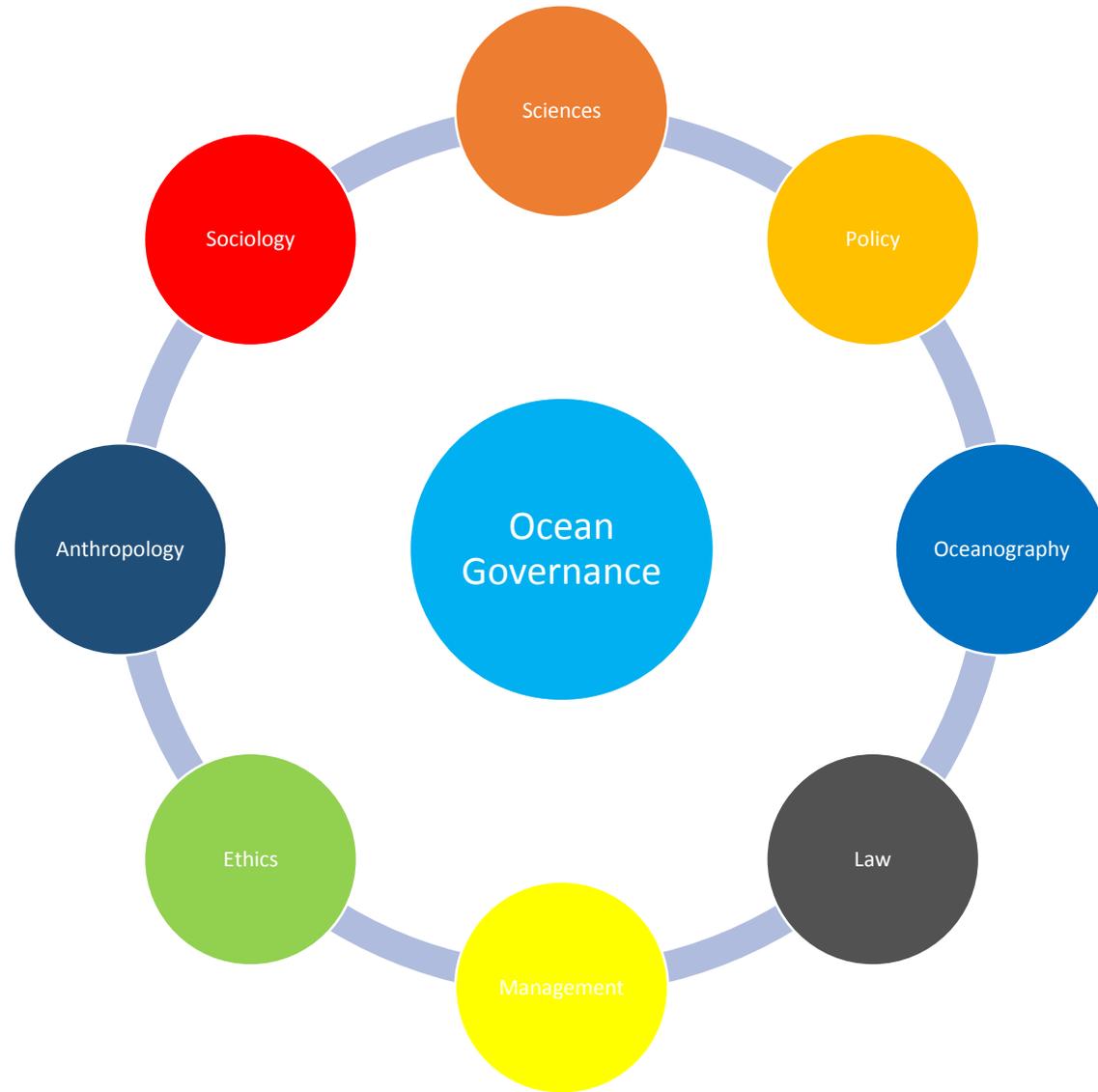
Ocean
Governance

Ethics

Management

Science

Interdisciplinary



Trans-disciplinary Perspectives in Ocean Governance



Problems too complex (THE UNKNOWNNS) & cannot be addressed through a one dimensional or a single-track perspective (Silo-based approach)



Scientists/Policy-Makers/Ocean Managers/Engineers/Lawyers may not have answers & may require inputs from experts in different fields & from stakeholders;

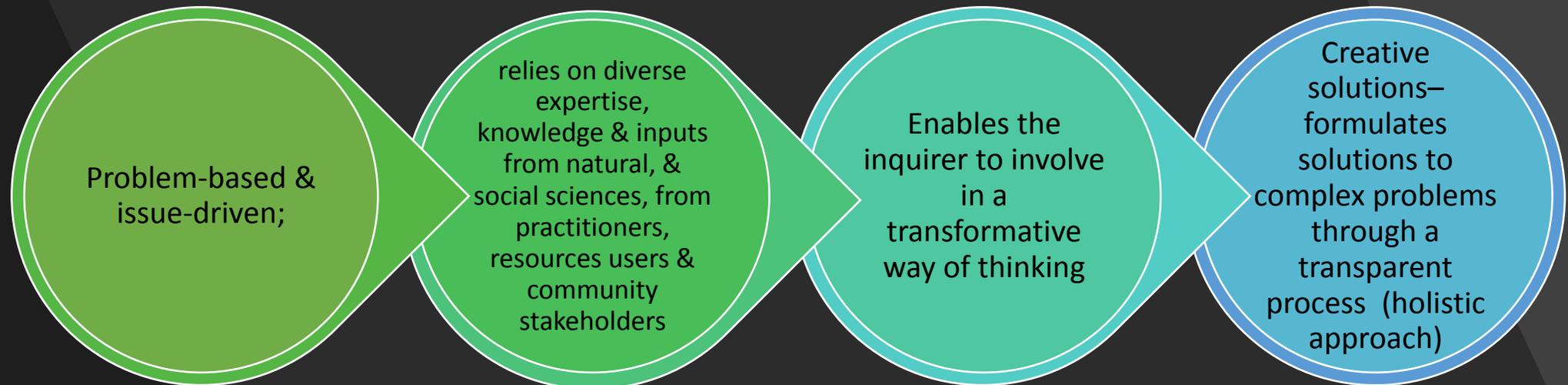


Collaborative/participatory process can produce better outcomes

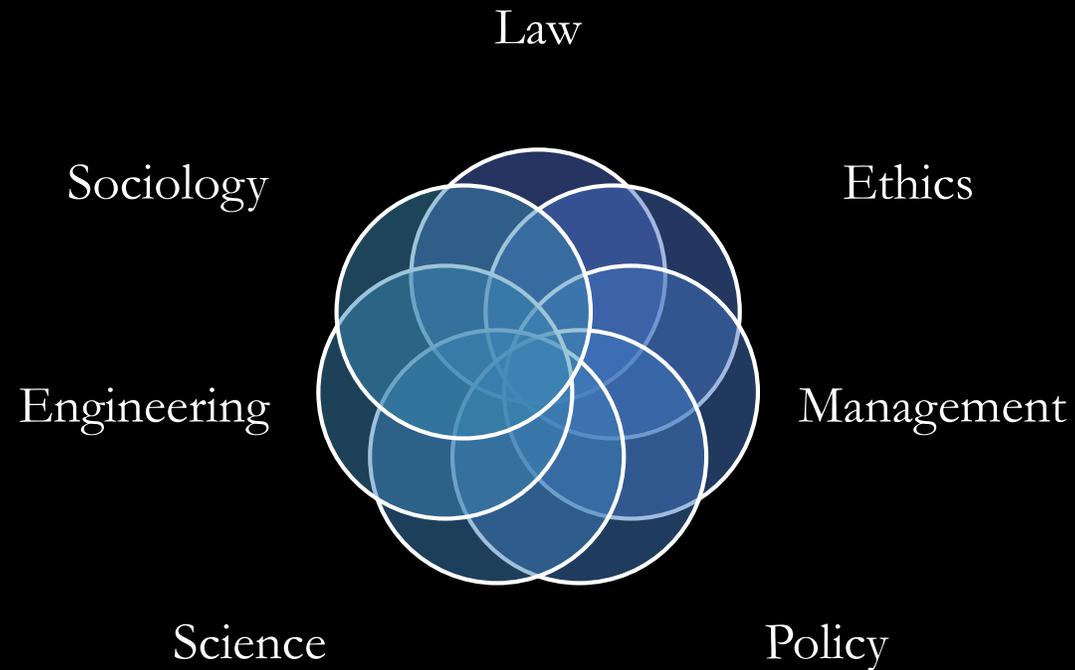


Transdisciplinary perspective is an approach & not the solution

Transdisciplinary Perspectives



Transdisciplinary Perspective in Ocean Governance



Locating Transdisciplinary Perspectives in UNCLOS (168 Parties)

A legal Doc.?

Management
Blue-print?

Is it all of these?

Policy
Prescriptions?

Scientific doc.?



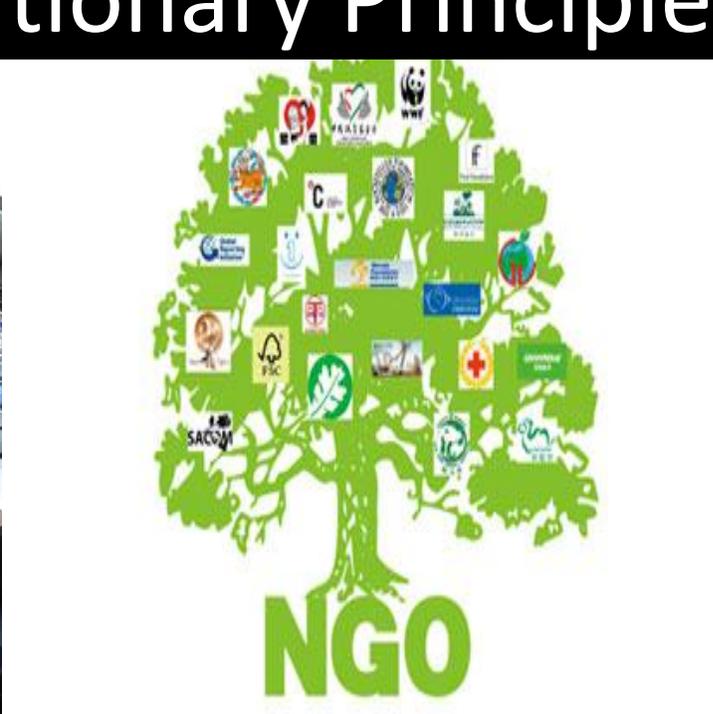
Transdisciplinary, the Precautionary Approach & Ocean Governance

- We know more about space, than about our oceans
- Insufficient information & uncertainty
- Difficulty in precisely defining ocean related problems
- Precautionary principle central to ocean governance
- PP – better to err on the side of caution
- Principle 15 Rio Declaration – “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”.

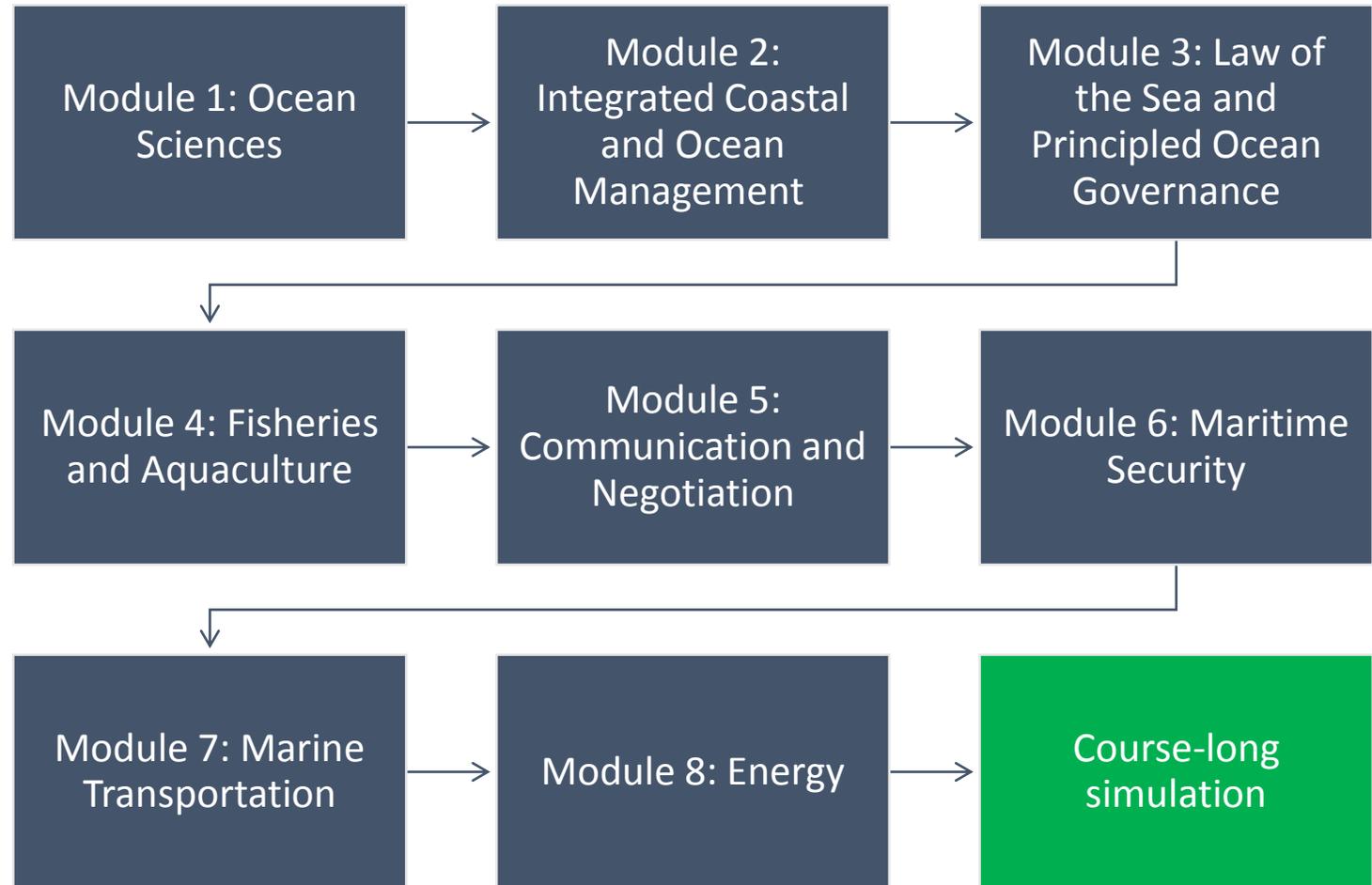




Precautionary Principle & Transdisciplinarity



Trans-disciplinary perspective as Pedagogy at IOI



V. Concluding Remarks

- One of the most challenging ecosystem to govern (unknown & unknowable)
- SD - Vague & imprecise in content
- GOG based on a Principled Approach is the need of the hour
- Transdisciplinary approaches are key (EBM, ICZM, MSP, PP. etc.)





Questions

