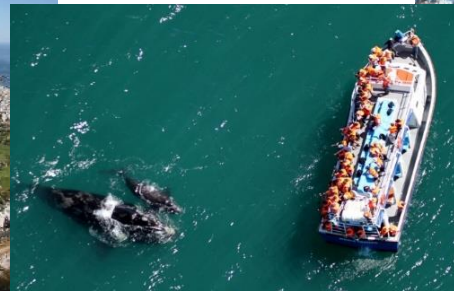


Ocean Economies, Blue Economies and Ocean Governance



Prof Ken Findlay
Research Chair: Oceans Economy
Cape Peninsula University of Technology
South Africa

Humans derive numerous “market” and “non-market” benefits from ocean systems through Oceans Economies.....

Ecosystem Services


Environmental Services

HUMAN ECONOMIES, INDUSTRY AND CONSUMPTION

PROVISIONING ECOSYSTEM SERVICE




REGULATORY ECOSYSTEM SERVICE



CULTURAL ECOSYSTEM SERVICE



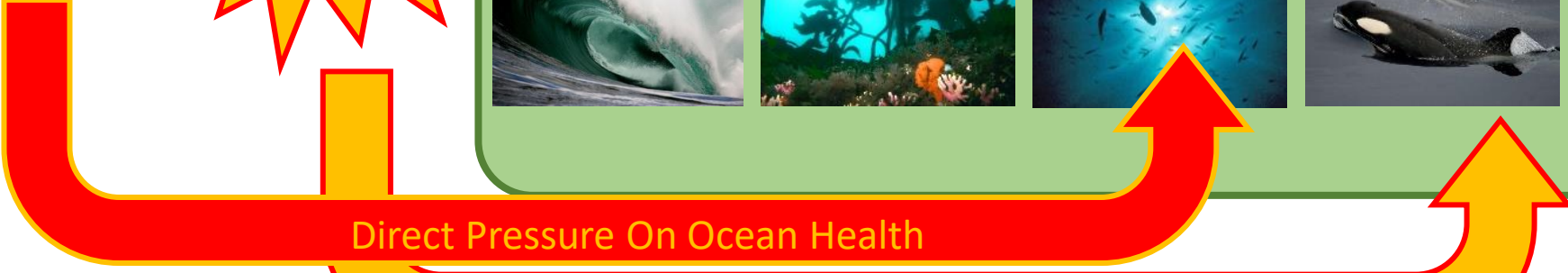
ENVIRONMENTAL SERVICE



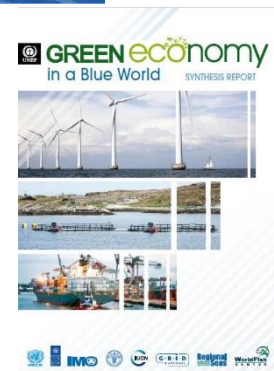
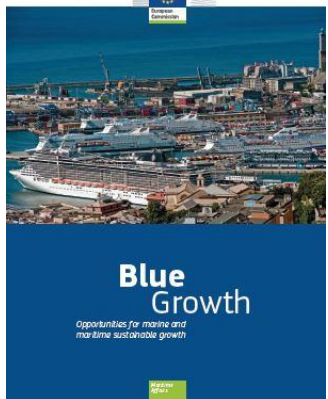
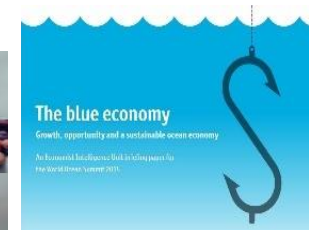
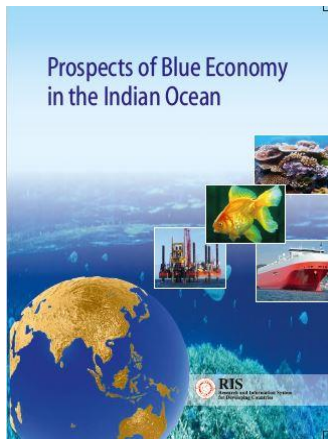
DIRECT IMPACTS

EXTERNALITIES
INDIRECT IMPACTS

SUPPORT SERVICES
= FUNCTIONAL ECOSYSTEMS
= OCEAN HEALTH



Global increase in Ocean Resource Use as nations or regions turn to new opportunities to foster economic growth and food and energy security



Differences between an ocean and a blue economy?

OCEANS ECONOMY

“that proportion of the economy which relies on the ocean as an input to the production process or which, by virtue of geographical location, taking place on or under the ocean”.

Colgan (2003)

The terminology, definition, classification standard and scope differ by country in terms of distribution of coastal resource use (how far inland does a coast extend?) and the extent of upstream and downstream activities (oil refining or fish processing?)

Park and Kildow (2014)

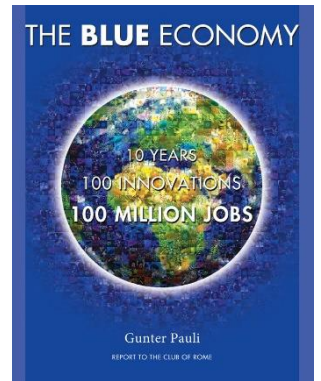
Resolution of conflict between economic use of resources and the conservation or preservation of such resources remains the dominant aspect of coastal and ocean management.

Colgan (2013, p. 334).

BLUE ECONOMY

1. Gunther Pauli's book - "The Blue Economy: 10 years - 100 innovations - 100 million jobs" – (Pauli, 2010)

Advocates innovative solutions to sustainable development, including the fostering of entrepreneurship to create sustainability . This concept is not specific to ocean resource-use.

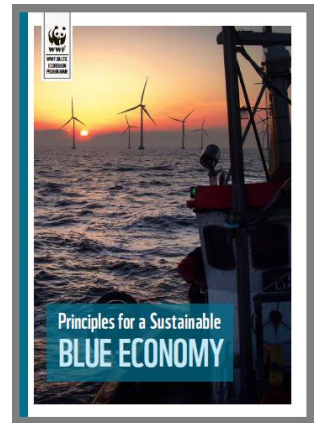


2. Ocean Resource Use

A. Any Economic activity in the maritime sector, whether sustainable or not.

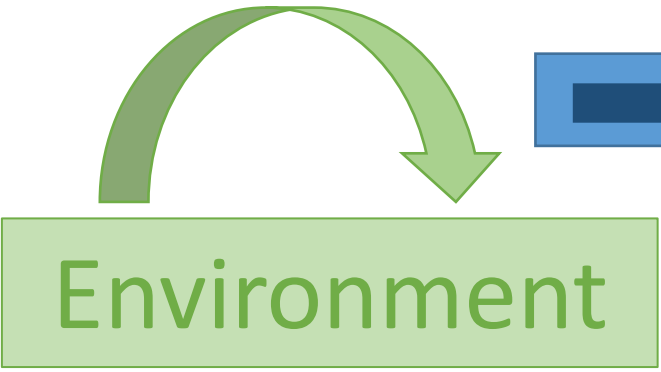
B. use of the sea and its resources for sustainable economic development as a parallel to the "green economy" concept

WWF – "Principles for a sustainable blue economy"

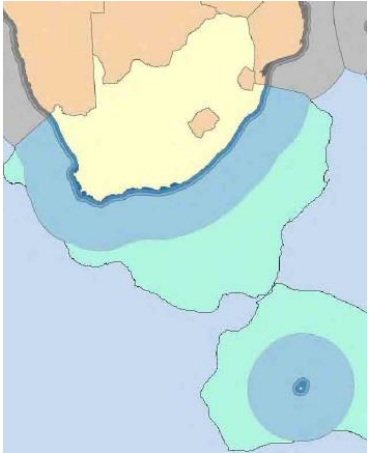


"marine-based, environmentally sustainable economic growth and social wellbeing..... the green economy applied to the oceans and the related coastal areas"

Kelleher 2015, WIOMSA



Support services drive ecosystem function and ocean integrity



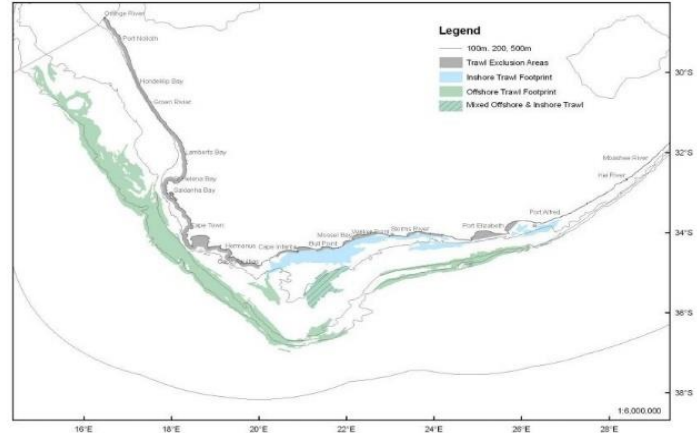
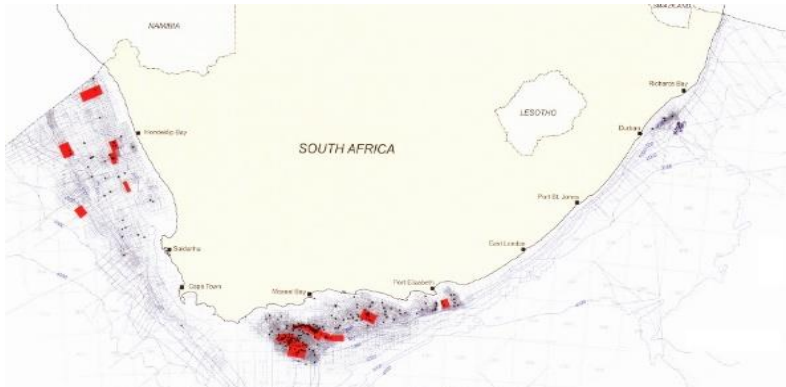
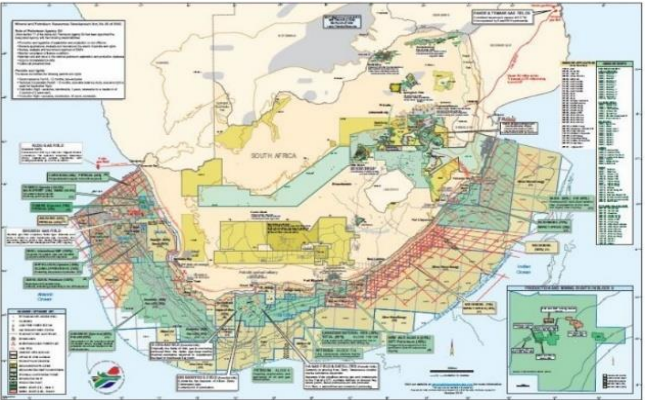
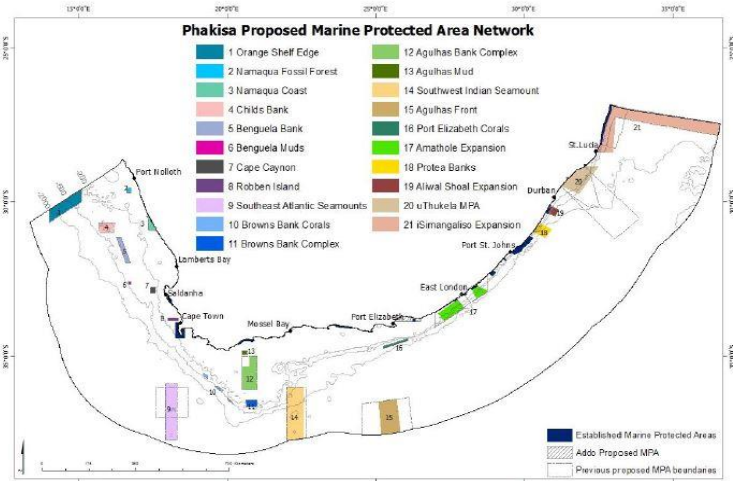
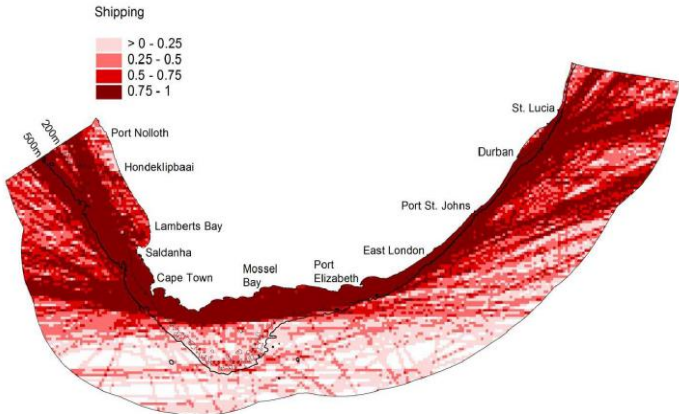
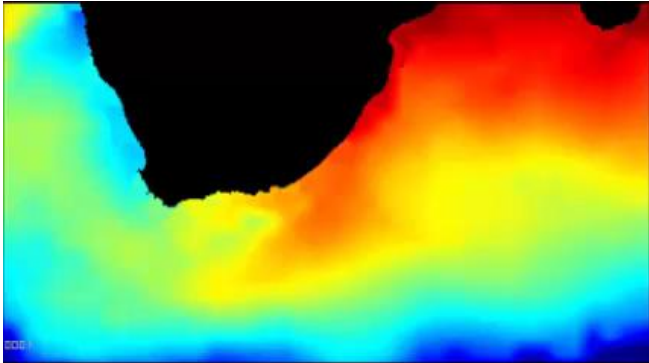
- VALUE**
- Fisheries
 - Tourism
 - Energy
 - Bioprospecting
 - Climate Regulation
 - Carbon Sink
 - Hydrological Cycle
 - Spiritual
 - Aesthetic
 - Bequest
 - Mining
 - Transport

POTENTIAL FOR CONFLICT

1. USER - USER
2. USER - ENVIRONMENT



User – User Conflicts across multi-sectors are self explanatory in the context of limited ocean space



Sector – Environmental Conflicts

Direct User – Environment Conflicts from Ocean Economy Industry

- Unsustainable extraction of marine resources,
- Pollution from marine sources (including acoustics),
- Impacts of alien invasive species, and
- Physical alteration and destruction of marine habitat

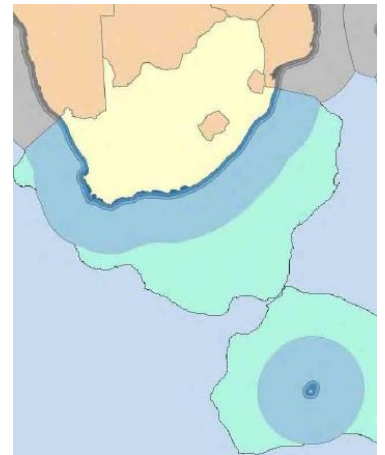
Indirect Externalities of Human Industry and Consumption

- Pollution from land-based sources (e.g. plastics)
- Ocean acidification and climate change impacts





Support services drive ecosystem function and ocean integrity



POTENTIAL FOR CONFLICT
 USER - USER
 USER - ENVIRONMENT

- VALUE**
- Fisheries
 - Tourism
 - Energy
 - Bioprospecting
 - Climate Regulation
 - Carbon Sink
 - Hydrological Cycle
 - Spiritual
 - Aesthetic
 - Bequest
 - Mining
 - Transport

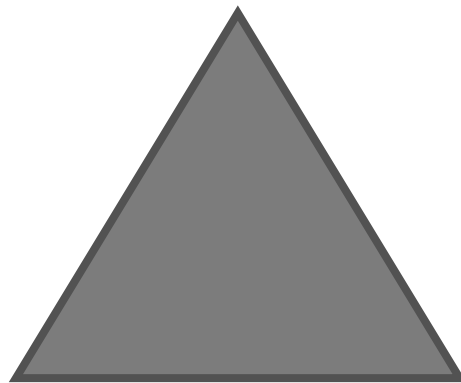


OCEAN
HEALTH

OCEAN
ECONOMIES ARE
DEPENDENT ON
FUNCTIONAL
OCEAN SYSTEMS
(OCEAN HEALTH)



HUMAN
BENEFITS
& WELL-BEING



Optimise Human Benefits and Well-Being without compromising Ocean Health

Ocean Governance To Balance Human Benefits and Ocean Health

Ecological governance - “a process of informed decision-making that enables trade-offs between competing resource users so as to balance environmental protection with beneficial use in such a way as to mitigate conflict, enhance equity, ensure sustainability and allow accountability”

Turton et al. 2007

GOVERNMENT

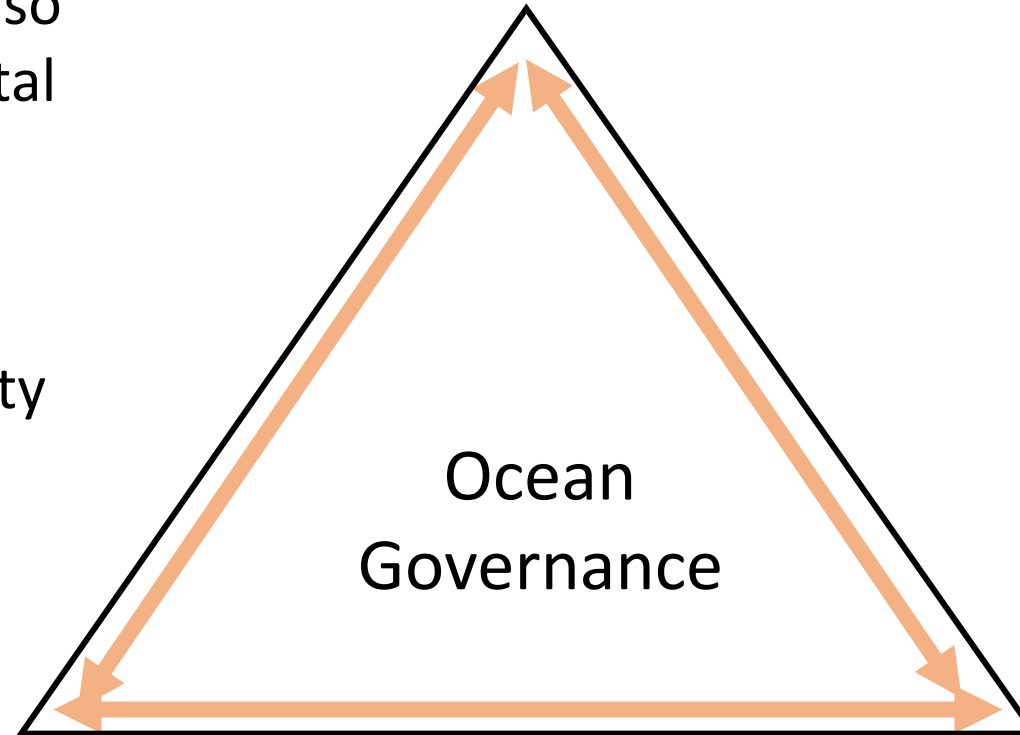
Rule Making
Rule Implementation
Rule Adjudication

SOCIETY

Economy
Social
Environment

Falkenmark’s Triologue
Model for Ecosystem
Governance: Government,
Society and Science

Hattingh et al. 2007;
Turton et al. 2007



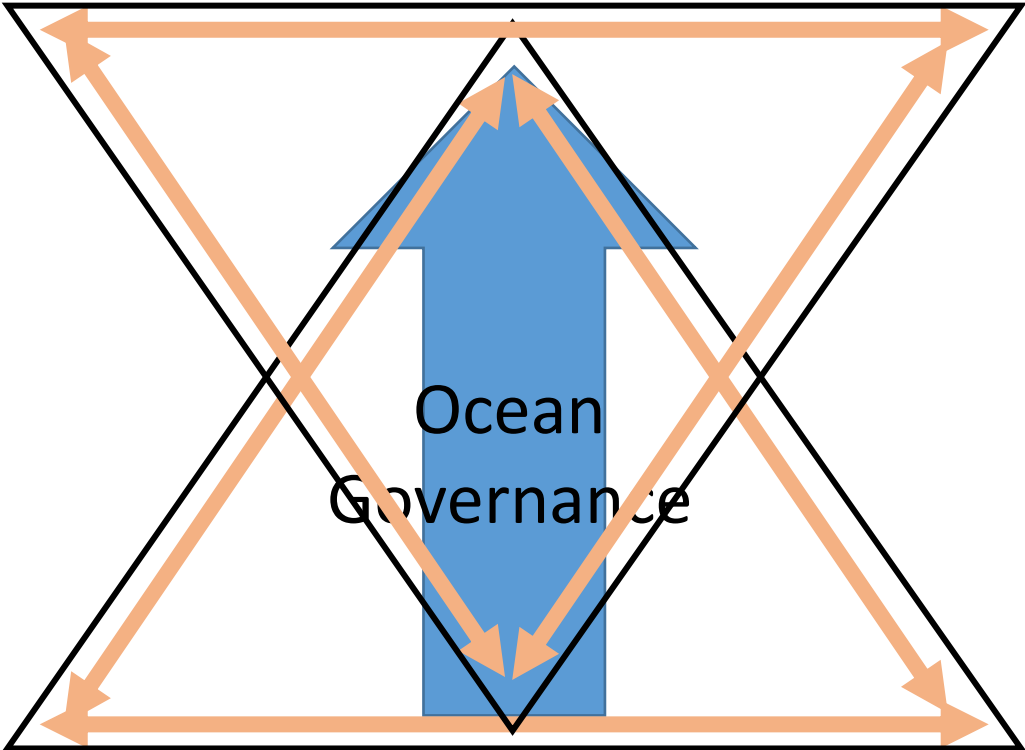
SCIENCE

Research,
Knowledge-bases
Capacity Development
Technology,
Innovation

Ocean Governance To Balance Human Benefits and Ocean Health

SOCIETY

Economy
Social
Environment



GOVERNMENT

Rule Making
Rule Implementation
Rule Adjudication

SCIENCE

Research,
Knowledge-bases
Capacity Development
Technology,
Innovation

Research and Ocean Governance Instruments

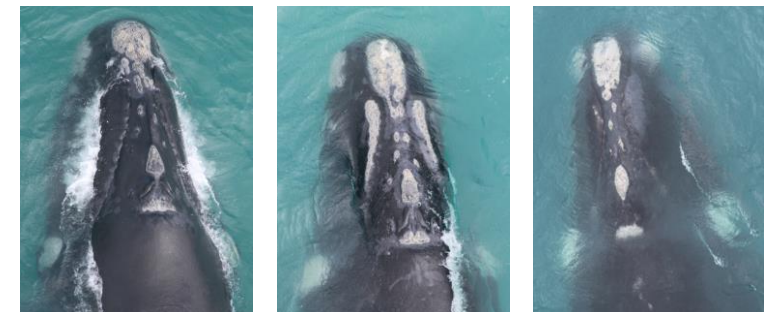
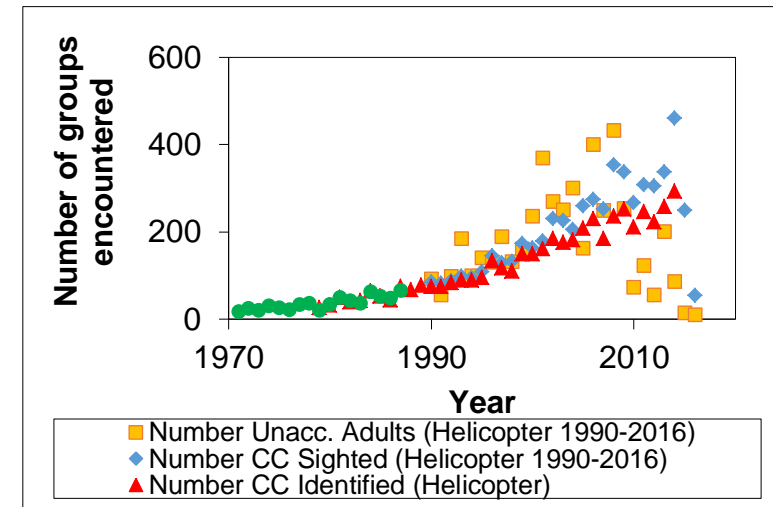
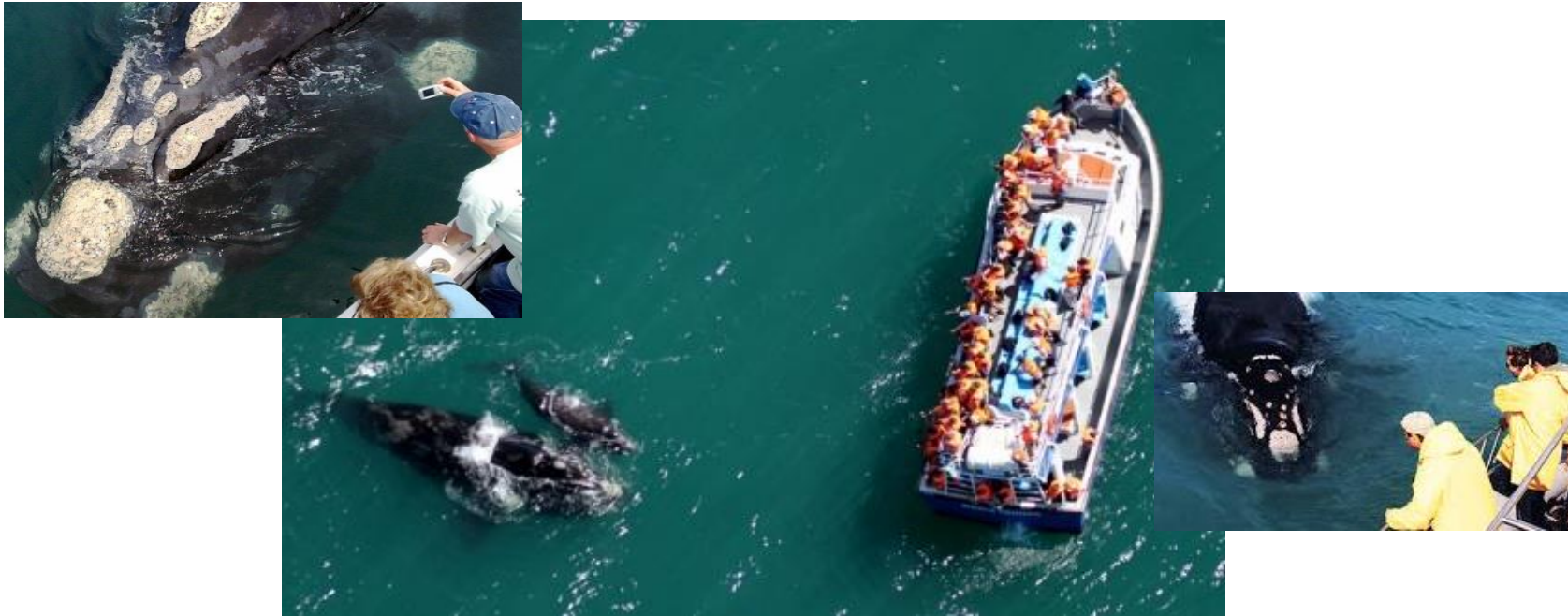
Governance as a **Process** or a **Product** goes beyond Legislation

1. Ocean System Monitoring and Research
2. Data Systems , Information and Knowledge
3. Knowledge and Standards Development
4. Strategic Environmental Assessment and Marine Spatial Planning (MSP)
5. Marine Protected Areas (MPAs) and other stewardship programmes
6. Legislation and Regulation
7. Regulation, Compliance Monitoring and Enforcement, including MDA



IMPORTANCE OF RESEARCH UNDERPINNING GOVERNANCE

For Example, Research in the management of the South African Whale Watch Industry



The South African Ocean Economy



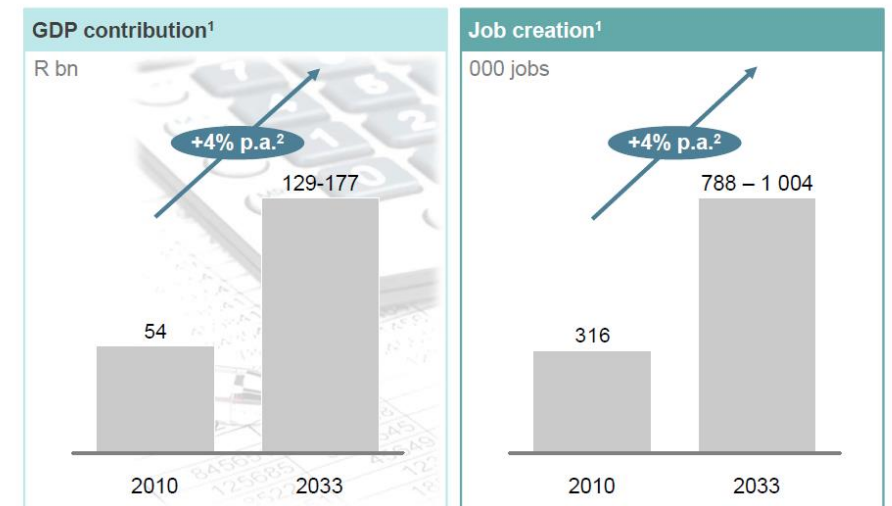
Operation Phakisa aims to accelerate execution of the National Development Plan
Poverty Eradication; Job creation; Redistribution and Access

“The first implementation of Operation Phakisa will focus on unlocking the economic potential of South Africa’s oceans, which are estimated to have the potential to contribute up to one hundred and seventy seven billion rand to GDP by 2033 compared to fifty four billion rand in 2010.”

Based on the Government of Malaysia's Big Fast Results Methodology

Phakisa - to hurry in Sesotho

South Africa’s ocean economic potential ranges between R129 and R177 bn by 2033, with between 800 000 to 1 million jobs created



¹ Only direct potential (i.e. multiplier effect ignored) from the Exclusive Economic Zone (EEZ) considered; ² Growth rate per annum (p.a.) is based on the projected base 2033 value



Integrated Ocean Governance and Protection

Integrated framework and governance



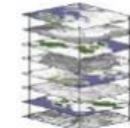
- 1 Ministerial Committee and Secretariat to govern activities
- 2 Enhancement of legislation for the Integrated Coastal and Oceans Management Act or Oceans Act
- 3 Review of ocean-related legislation
- 4 Accelerated capacity-building intervention in ocean governance

Ocean protection



- 5 Enhanced and coordinated enforcement programme
- 6 National ocean and coastal information system and extending earth observation capacity
- 7 National ocean and coastal water quality monitoring programme
- 8 Creation of a Marine Protected Area (MPA) representative network
- 9 MPA/MSP discovery, research and monitoring programme

Marine spatial planning (MSP)



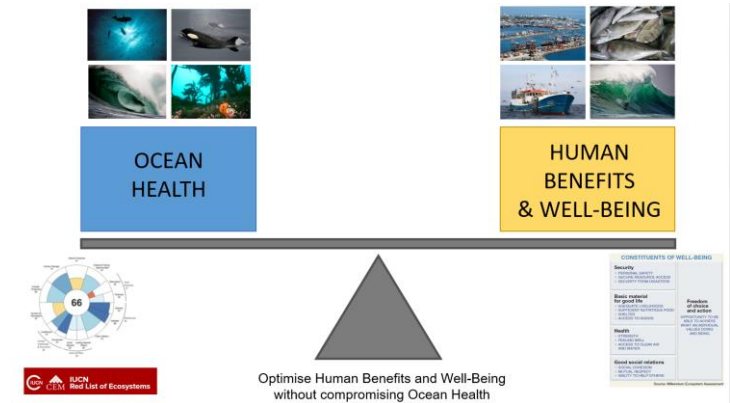
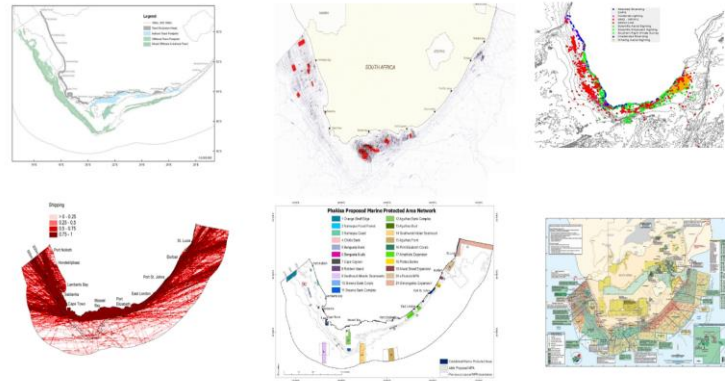
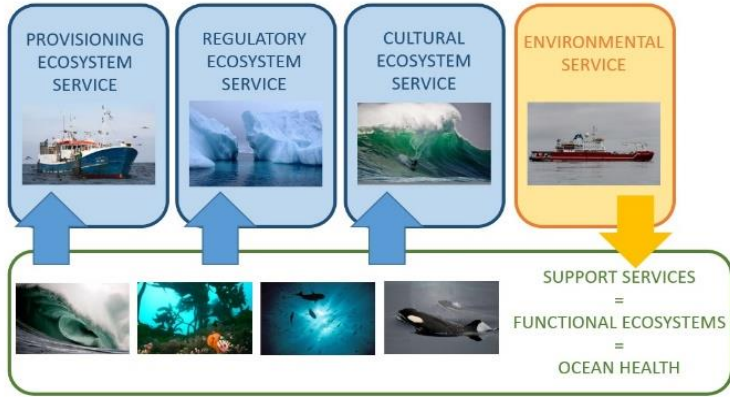
- 10 Marine Spatial Planning (MSP) process

Operation Phakisa to fast-track delivery of the NDP 2030 – Eradication of poverty, unemployment and inequality.

Governance to optimise Human Benefits and Well-being without compromising Ocean Health

The roles of Society, **Science** and Government in the Operation Phakisa Ocean Governance Framework

Trade-offs between competitive sectors or industries (including the environment) in Spatial Ocean Governance through Marine Spatial Planning



OCEANS ECONOMY EVALUATION

IN A SPATIALLY EXPLICIT FRAMEWORK

TO ALLOW THE BALANCE OF SUSTAINABLE OCEAN ECONOMIES AND OCEAN HEALTH

Recent Marine Spatial Planning Bill and Framework in South Africa

FISHERIES
Abalone
Hake Handline
Squid Handline
Traditional Handline
Oyster
Seaweed
White mussel
Hake Longline
Patagonian Tooth-fish Longline
Tuna and Swordfish longline
Horse Mackerel Midwater
False Bay Haarder Net
False Bay Yellowtail Net
West Coast Haarder Net
West Coast St Joseph Net
Tuna Pole
Anchovy Purse Seine
Horse Mackerel Purse Seine
Sardine Purse Seine
Octopus Trap
South Coast Rock Lobster Trap
West Coast Rock Lobster Inshore Trap
West Coast Rock Lobster Offshore Trap
Agulhas Sole Trawl
Demersal Shark Trawl
Hake Inshore Trawl
Hake Offshore Trawl
Prawn Trawl

TRANSPORT & INFRASTRUCTURE
Harbours
Shipping
Dredging
Lighthouse
Roads and Anchorages
Small harbour
Outfall

OIL & GAS
Disbanded Facility
Exclusion Zone
Exploration
Pipeline
Production Facility
Seismics

MINING
Diamond
Phosphate
Salt
Sand
Titanium

ENERGY
Energy Currents
Energy Tidal
Energy Wave
Energy Wind

RECREATIONAL
Beach sailing
Beach-going
Birding
Day walks
Dedicated Swim
Jetski
Kite surfing
Motor Cruising
Offshore and sail cruising
SCUBA
Snorkel
SUP
Surfing
Surfski and kayak

RECREATIONAL FISHING
Bait
East coast lobster
Estuary
Intertidal
Spearfishing
Surf and Rock
West coast lobster dive
West coast lobster trap
Boat

TOURISM
Seal diving
Shark diving
Whale watching
Aquariums
Ports and Harbours
Protected Area Use
SCUBA diving
Seal cruises
Boat cruises
Caravan and camping
Holiday home
Hotels
Overnight hikes

ENVIRONMENTAL
EBSA
Important Bird Area
Important Mammal Area
MPA
Species Significant Area
World Heritage Area
Special Protected Area
Ramsar Site

AQUACULTURE
Onshore Aquaculture
Abalone Ranching
Cage Aquaculture
Raft Aquaculture
Seaweed Aquaculture

CULTURAL
Aesthetic Site
Bequest Site
Cultural Site
National Monument
Historic Site
Spiritual Site

105 Activities - distil these to :

PELAGIC FISHERY SECTOR

MIDWATER FISHERY SECTOR

DEMERSAL FISHERY SECTOR

OIL & GAS SECTOR

TRANSPORT & INFRASTRUCTURE SECTOR

DESALINATION SECTOR

MINING SECTOR

RENEWABLE ENERGY SECTOR

RECREATIONAL SECTOR

TOURISM SECTOR

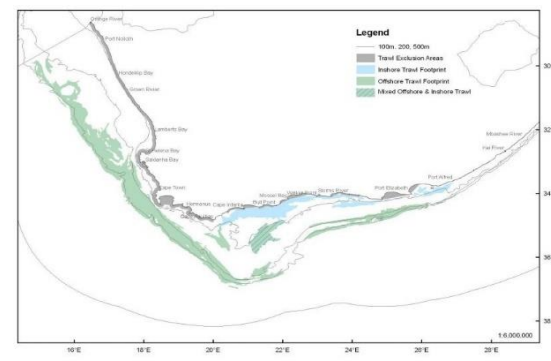
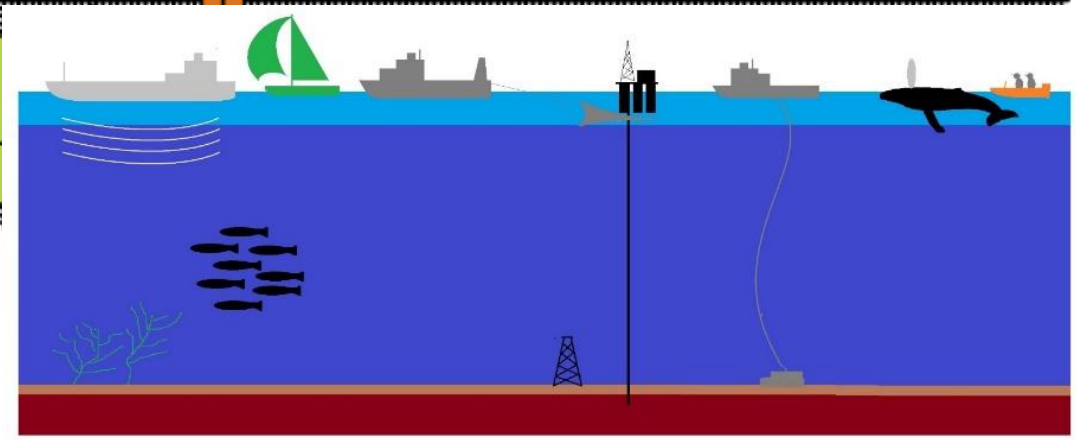
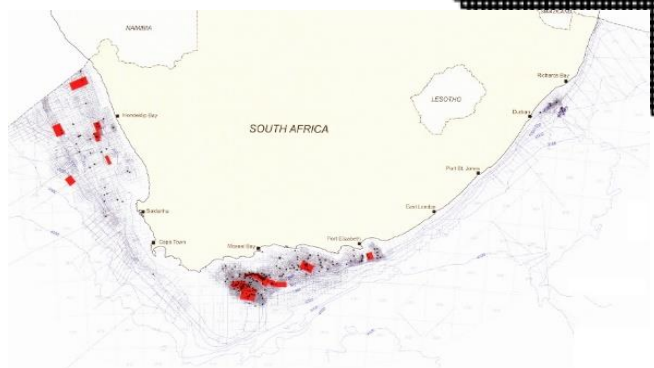
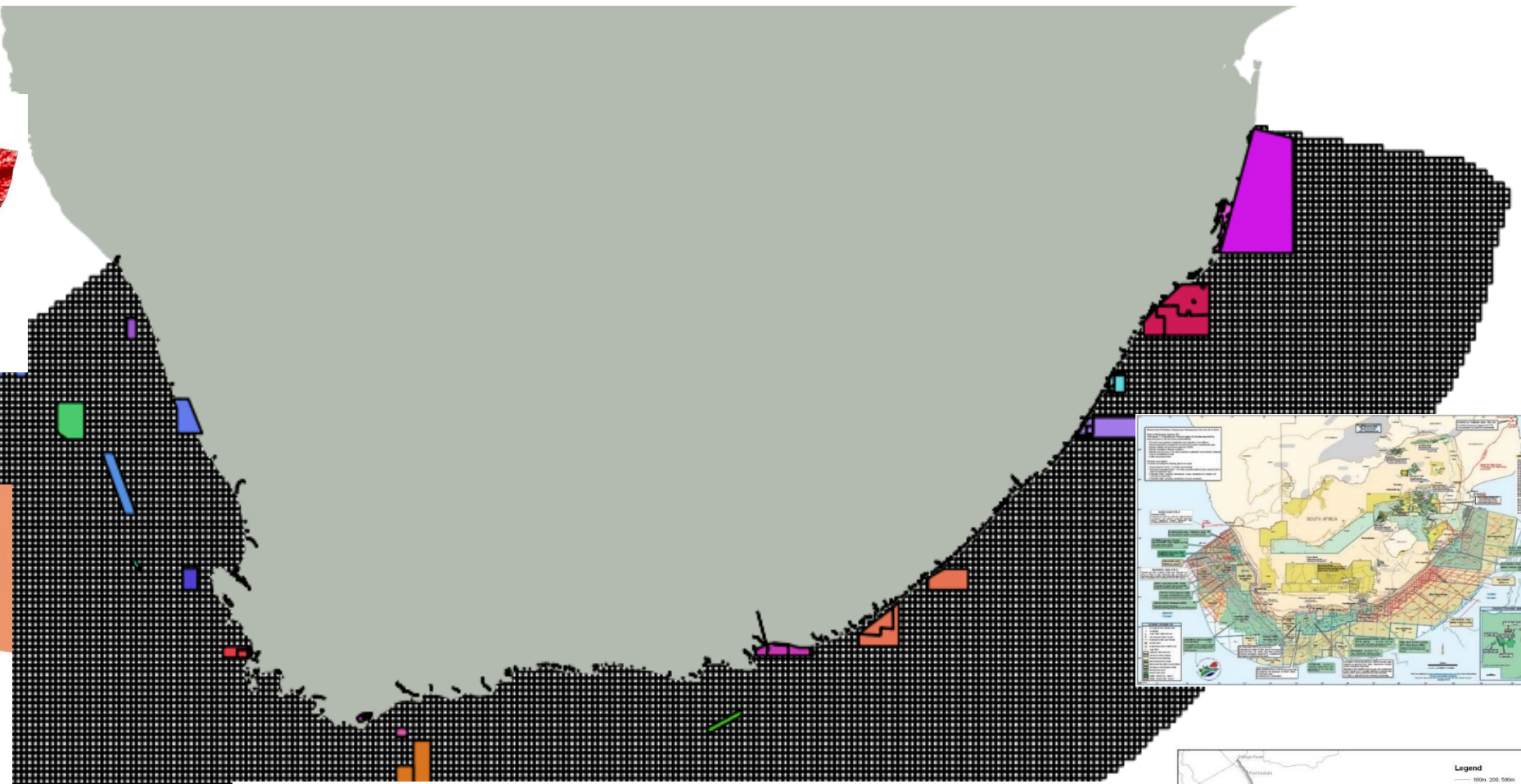
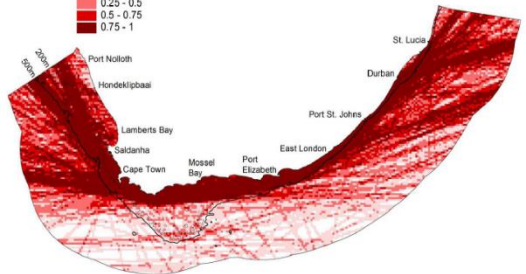
AQUACULTURE SECTOR

ENVIRONMENTAL SECTOR

CULTURAL SECTOR



Shipping





Thank you for your attention