The Blue Economy: Me or We?

Kelly Hoareau, Director
James Michel  Blue Economy Research Institute
University of Seychelles
Kelly@unisey.ac.sc

5th IOD Session III: Sustainable Development in the Indian Ocean Rim
<table>
<thead>
<tr>
<th>Year 1 Courses</th>
<th>Year 2 Courses</th>
<th>Year 3 Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth &amp; Atmospheric Science**</td>
<td>Earth System Science**</td>
<td>Independent Research project **</td>
</tr>
<tr>
<td>Biological Principles &amp; Interactions in Tropical</td>
<td>Introduction to Geoinformatics &amp; Field-studies in</td>
<td>Governance and Stakeholder Engagement*</td>
</tr>
<tr>
<td>Ecology**</td>
<td>Environmental Science**</td>
<td></td>
</tr>
<tr>
<td>Introduction to Marine Ecology*</td>
<td>Natural Resource</td>
<td></td>
</tr>
<tr>
<td>Concepts in Sustainable Development*</td>
<td>Development and Protection*</td>
<td>Fisheries Science and Aquaculture *</td>
</tr>
<tr>
<td>Introduction to Environmental Law &amp; MEAs*</td>
<td>Introduction to Natural Resource Economics*</td>
<td>Tropical Biodiversit and Conservation *</td>
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<td>Research Methods &amp; Skills in Environmental Science*</td>
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**Marine Science**

*Research Methods & Skills*

*Coastal Systems Dynamics*

*Marine Ecosystems and Sustainability*

*Climate Change Adaptation & Mitigation*

*Ecosystem-based Disaster Risk Reduction*

**Capstone Project**

****Research Project****
Land area is 454 km²
Exclusive Economic Zone (EEZ) of 1.4 million km² making Seychelles a Large Oceanic State.

Why the Blue Economy?

Republic of Seychelles

Mahe

Tanzania

Comoros

Mayotte

Mozambique

Juan De Nova I.

Madagascar

Glorioso Is.

Seychelles - Mauritius Joint Management Area (2012)

Joint Management Area (JMA) of 396,000 Km² between the Republic of Seychelles and the Republic of Mauritius. First and only JMA of the Extended Continental Shelf area in the World. Treaty signed in 2012.
Main Themes

• innovative thinking ocean & coastal space (terrestrial)

• consider the needs of a healthy and dynamic environment

• climate change, water, energy, food security, pollution

• initiatives embedded within the community
<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Ocean service</th>
<th>Established industries</th>
<th>Emerging industries</th>
<th>New industries</th>
<th>Drivers of future growth</th>
</tr>
</thead>
</table>
| Harvesting of living resources                       | Seafood       | Fisheries              | Sustainable fisheries | Aquaculture | Multi-species aquaculture | Food security
|                                                      | Marine bio-technology | Pharmaceuticals, chemicals |                      |                                                      | Demand for protein, R&D in healthcare and industry |
| Extraction of non-living resources, generation of new resources | Minerals | Seabed mining | Deep seabed mining | | | Demand for minerals |
| Energy                                               | Oil and gas    | Renewables             |                      |                                                      | Demand for alternative energy sources |
| Freshwater                                           | Desalination   |                       |                      |                                                      | Freshwater shortages |
| Commerce and trade in and around the ocean           | Transport and trade | Shipping                  |                      |                                                      | Growth in seaborne trade, International regulations |
|                                                      | Tourism and recreation | Tourism                  |                      |                                                      | Growth of global tourism, Coastal urbanisation |
|                                                      |                | Coastal development     |                      |                                                      | Domestic regulations |
| Response to ocean health challenges                  | Ocean monitoring and surveillance | Technology and R&D       |                      |                                                      | R&D in ocean technologies, Growth in coastal and ocean protection and conservation activities |
|                                                      | Carbon sequestration | Blue carbon (i.e. coastal vegetated habitats) | Blue Carbon Initiative | | | |
|                                                      | Coastal protection | Habitat protection, restoration | | | |
|                                                      | Waste disposal  | Assimilation of nutrients, solid waste | | | |
|                                                      | | | | | | Credit: EIU |
Beyond fish and ships, our oceans provide...

**Climate Regulation**
- 70%
  - Covering 70% of the earth's surface, the ocean transports heat from the equator to the poles, regulating our climate and weather.

**The Air We Breathe**
- >50%
  - The ocean produces over half of the world's oxygen and stores 50 times more carbon dioxide than our atmosphere.

**Blue Carbon**
- Mangroves, seagrass and salt marshes remove CO₂ from the atmosphere 10 times more than a tropical forest and store 3 to 5 times more carbon, thus decreasing the impacts of climate change.

*Estimated blue carbon value in the EAS Region:*
  - ~$111 B for mangroves
  - ~$77-95 B for seagrass

**Shoreline Protection**
- Mangroves, seagrass and coral reefs are natural barriers, saving money and reducing impacts of storm surge, erosion and flooding.
  - Coral reefs reduce 97% of wave energy.
  - Mangroves reduce 66% of wave height.

**Ocean Energy**
- The ocean can produce thermal energy from the sun's heat and mechanical energy from the tides and waves. It is estimated that 0.1% of the energy in ocean waves could be capable of supplying the entire world's energy requirements five times over.

**Offshore Wind Power**
- Higher wind speeds are available offshore compared to on land.

**Home**
- The East Asian Seas (EAS) region is home to 45% of the world's mangroves, 33% of seagrass beds, and 13% of the world's coral reefs, supporting diverse species of flora and fauna, and an array of ecosystem services.

**Food**
- 15% of animal protein comes from fish.
- Countries of the EAS region account for 63% of total global fisheries.

**Trade and Transportation**
- The East Asian Seas serve as conduit of 90% of world trade through shipping.

**Tourism and Recreation**
- >$200B
  - In tourism revenues. The EAS region account for 26% of worldwide tourist arrivals.
  - Swimming, boating, snorkelling, diving, dolphin and whale watching... the ocean provides us with so many unique amenities and activities.

**Oil and Gas**
- $34 B
  - There are around 1400 offshore oil and gas platforms in the EAS region... with production of 2 million barrels of oil per day.

**40% of world's capture fisheries = $35 B**

**80% of world's aquaculture = $100 B**

**Income and Jobs**
- The ocean economy contributes 3% - 28% of the GDP of five countries in the EAS region.

**Medicine**
- Many medicinal products come from the ocean, including ingredients that help fight infections, cancer, arthritis, heart disease, and Alzheimer's disease.

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Me: Seychelles

enabling wealth

sharing prosperity
Economic Exclusive Zones of the World
We: Collaboration

- Data gaps in the Indian Ocean?
- Business as usual? Innovation? Time to be different?
- Regional complex problems/challenges
- Data, monitoring and adaptive management
- Top-down or bottom-up? Sharing?
- Risk/investment security?
- SDGs?
The Blue Economy » Me and We!
“Do not look the other way; do not hesitate. Recognise that the world is hungry for action, not words. Act with courage and vision.”

- Nelson Mandela
Links: Seychelles Related Initiatives

- http://seymsp.com/
- https://seyccat.org/about-us/
- https://oceanconference.un.org/commitments/?id=16126
- http://fisheriestransparency.org/about-the-initiative