

Professor Alistair McIlgorm, ANCORs.
Outline

• Background to the APEC 2004 project
• The 2004-2010 period
• The Blue economy in East–Asia
  - PEMSEA State of Oceans and Coasts (SOC) reports
• APEC 2018-19 study
• Discussion
• Conclusions
Background to the APEC 2004 project: Defining the marine economy - Previous studies

- Ocean Sector Canada (1996); Canada’s Ocean Industries (DFO, 1998, 2000);
- The economic contribution of Australia’s Marine Industries (Allen, 2001, 2004); (Envir. Dept.);
- ...contribution of the coast and coastal ocean to the U.S Economy (Kildow et al, 2000);
- Ocean & coastal economy: National Ocean Economics Project, USA (Kildow et al, 2000 Colgan, 2003);
- Marine activities in UK economy (Pugh & Skinner, 2002)
APEC 2003-04 Measuring Marine Economies

- APEC Marine Resource Conservation Working group...following a gaps in Marine governance study.
- (I) ..develop a methodology and estimate the economic value of the marine sector 3 economies (Australia, NZ* and Canada);
- (II) ..use existing information to determine the economic value of the marine sector in another 5 APEC economies; [2004 Tsunami]

- “..define the term “marine economy”;
- identify the potential economic information required for measurement of economic value;
- ascertain the level of existing information available from relevant government departments and private industry in Australia, New Zealand* and Canada;
- [* became US]
APEC 2003-04 Measuring Marine Economies

• “The basic data to be identified will include:
  – capital and investment value,
  – direct and indirect revenues,
  – values at first sale, added values,
  – resource rents, employment,
  – expenditure, and regional multipliers

• It is envisaged that National Accounts data will be a key source of information and methodology (gross domestic product etc). The nature of marine resources and use of the oceans requires extension of the national accounting principles to cater for:
  – the measurement of the natural capital of marine resources;
  – regional and multiplier effects;
  – relevant non market elements (use of the sea as a waste sink; amenity values etc)” 

  – In retrospect, TOR was poorly informed and overly ambitious!
APEC Round Table workshop 2004 - Agenda

- Defining the “marine economy”;
- Discussion of challenges faced during the Canadian, Australian, UK and US projects;
- Discussion of other domestic projects in train on the economic value of marine sectors;
- Information on the marine economy as an aid for decision makers;
- Challenges of developing methodologies for data collection, reduction of data gaps, and the normalization of data;
- Future steps
APEC MRC Roundtable, Easter Is., list of agreed marine economy sectors 2004

From the review of existing studies presented at the APEC MRC working group the following list of sectors was identified:

i. Oil and Gas (ie. minerals)  
ii. Fisheries / Aquaculture (ie. living resources including sea plants)  
iii. Shipping (ie. transportation and shipbuilding)  
iv. Defence / Government (ie. government services)  
v. Marine Construction (eg. coastal defences and restoration)  
vi. Marine Tourism (ie. leisure services)  
vii. Manufacturing (ie. equipment, medicines, etc)  
viii. Marine Services (eg. mapping, surveying, consulting)  
ix. Marine Research and Education

This list was generated by the MRC Working Group Round Table Forum (APEC, 2004).
2009- PEMSEA

- Profile of 7 marine economies in East Asia.
- Significance of East Asia and island states emerged.
- Sowed seeds for future ME studies.
- Capacity development need identified...people!
GDP, employment and the Blue economy - Is SE Asia leading the way? (PEMSEA 2009)

Dependence on the ocean.....East Asia & islands important
Post 2009- Asian Blue economy (BE) development

- China had an annual Oceans Accounts since pre 2000. National Marine Data Information Service (NMDIS).
- Chinese SOA, 2011 BE Forum, Xiamen.
- PEMSEA had existing East Asian CZM networks.
- 2013-2015 PEMSEA interest in further developing OE initiatives & funding for bigger East Asian study.
- Recognition of the development in Environmental accounting - SEEA as parallel path to BE development.
- “Ocean in National Income Accounting 2015”: Monterey; BE Center.
- *Journal Ocean and Coastal Economics (JOCE).*
Conceptualising the **Ocean, Green and Blue Economies**

All the economic benefits that come from the sea

**Green economy**
- Marine Resource Stocks; their “capital” values, and sustainability

**Ocean economy**
- Industrial uses
- other uses
  - Production uses with national accounts data
  - Gaps - Can survey etc

**Blue economy**
- USE
- Non USE
  - Option, bequest and existence values

**Land, resource Stocks**
- Ecosystem service values

Three pillars
- Economic development
- Environmental sustainability
- Equity

Mcllgorm (2011, 2016) Xiamen Blue Economy Forum
Greening the Ocean => Blue economy

Industry sustainability & environment
- External costs of marine industries
- Dependence on healthy environment (Eg SIDS)

Growth in existing marine industries
- Stronger rates of growth than land based industries
- ‘Blue growth’

New Marine Industries and innovation
- Potential for new jobs and competitive advantage
Developing a BE framework:

- **Project: State of the Ocean and Coast Reports for the Blue economy** in East Asia –PEMSEA (2015-2018);
- Applying available value data to policy issues;
- A framework for Blue economy objectives;
SOC Report: Outline

Ocean economy and ocean health
- Role of oceans and LMEs
- The people and economy (demographic, socioeconomic)
- Coastal and marine ecosystems and biodiversity
- Ocean economy
- Ecosystem services
- Food security from coastal and marine resources
- Tourism, heritage and cultural sites
- Shipping and ports
- Risks and threats (environmental damage, climate change)

Blue economy development
- Drivers of change and sustainability
- Innovative and sustainable economic activities
- Best practices & innovations in environmental and resource mgt.

Innovations in blue economy governance and investment opportunities
- Enabling conditions, participation mechanisms, R&D, incentives
- LMEs: ecosystem-based mgmt; transboundary; co-mgmt
- Business and investment opportunities in blue economy
2.3 The ocean economy

Indicators:
- gross outputs
- gross value added
- contribution to GDP
- growth rate
- employment

<table>
<thead>
<tr>
<th>Fisheries &amp; Aquaculture</th>
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<tbody>
<tr>
<td>Oil and Gas</td>
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<td>Mining (Minerals)</td>
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<td>Energy/electric supply</td>
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<td>Manufacturing:</td>
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<td>seafood processing, marine biotechnology &amp; pharmaceuticals, salt, ship building and repair, marine transport equipment</td>
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<td>Shipping and Ports</td>
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<td>Marine tourism and recreation</td>
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<td>Marine Construction</td>
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<td><strong>Marine communications</strong> (submarine cables, etc.)</td>
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<tr>
<td>Public/Government</td>
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<td>Marine education and research</td>
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<tr>
<td>Marine services (mapping; monitoring; consulting; maritime insurance, law, finance; etc.)</td>
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</table>
### Philippines

**Source/Impact** | **Ecosystem** | **Total** | **%**
--- | --- | --- | ---
**Unsustainable Fisheries, etc.** | 207.97 | 1,036.33 | 1,335.01 | 2,579.31 | 45.40
  - Fisheries impacts from coastal development, pollution and climate change | 169.56 | - | 0.28 | 0.28 | 170.12 | 3.00
  - Fisheries impacts from overfishing (depletion) | 38.41 | n.e. | 1,036.06 | 1,074.46 | 2,409.19 | 42.40
**Coastal development** | 1,890.61 | 451.41 | 0.01 | **2,342.03** | 41.20
  - Conversion to fishponds | 1,886.19 | | | 1,886.19 | 33.20
  - Reclamation | 4.42 | 451.41 | 0.01 | 455.83 | 8.00
**Pollution** | 108.15 | 5.70 | 115.62 | 529.28 | **758.75** | 13.40
  - Human Morbidity/mortality | | | | 401.00 | 401.00 | 7.10
  - Oil spill (Guimaras) | 108.15 | 5.70 | 115.62 | 122.80 | 352.27 | 6.20
  - Harmful algal blooms | | | | 3.47 | 3.47 | 0.10
  - Fish kills | | | | 2.01 | 2.01 | <0.1
**Climate change** | **2.35** | | | **2.35** | <0.1
  - Coral bleaching | 2.35 | | | 2.35 | <0.1
**Total** | 2,206.73 | 1,605.71 | 1,864.05 | **5,683.08** | **100.00**
**%** | 38.83 | 28.25 | 32.82 | --- | ---
**Per unit area (Php/ha)** | 10,553.00 | 594.71 | 78.98 | --- | ---

APEC 2018-Ocean & Fisheries Working Group

- **Marine debris (MD) damage** - update in APEC region of 2009. Economic damage from MD report.

- **Marine economies (ME)** - update in value of marine economies in 2004 to 2015 period.

- **APEC** has 21 member economies.

- **ME data availability** – How has APEC ME changed since 2004?

- **Evidence of progress?**

- **APEC 2018 study** - uses 2015 data.
Data in APEC marine economies (2015)

AND LIMITATIONS

- currently available data highlighting gaps...some of which have been filled
### Data: Where does ME data come from?

<table>
<thead>
<tr>
<th>Economy</th>
<th>2004</th>
<th>2015</th>
<th>Source of marine economy data</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
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<td>X</td>
<td>Government data system (AIMS)</td>
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<td>Canada</td>
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<td>Government data system (DFO)</td>
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<td>China</td>
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<td>Government data system (NMDIS)</td>
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<td>Philippines</td>
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<td>PEMSEA (2018) - Philippines Gov't data system</td>
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<tr>
<td>United States</td>
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<td>Government data system (NOEP/NOAA)</td>
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<td>New Zealand</td>
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<td>Government data system (NZ Stats)</td>
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<td>Japan</td>
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<td>Independent study</td>
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<td>Indonesia</td>
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<td>PEMSEA (2018)</td>
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<td>Malaysia</td>
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<td>Singapore**</td>
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<td>Vietnam</td>
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<td>Chile**</td>
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<td>Hong Kong SAR, China</td>
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<td>Papua New Guinea**</td>
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<td>Chinese Taipei**</td>
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<td>Mexico*</td>
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<td><strong>Number out of 21</strong></td>
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</table>
APEC 2018-Ocean & Fisheries Working group

- 6 economies have government data systems, only 3 national accounts statistics departments (China, Philippines & NZ);
- 7 independent research – (6 PEMSEA...)
- 6 need direct request to governments – no specific ocean account data
  - 2 with no reply

Other issues with data on ME sectors...

<table>
<thead>
<tr>
<th>Sector of marine economy</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Oil and gas (Marine minerals)</td>
<td>Issues in separating land and sea sources</td>
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<tr>
<td>ii. Fisheries/Aquaculture (Living resources)</td>
<td>Available, but may include processing</td>
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<tr>
<td>iii. Shipping (Transport and shipbuilding)</td>
<td>Shipping valuation issues- Transport easier</td>
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<tr>
<td>iv. Defence/Government (Government services)</td>
<td>Included to remind not to include</td>
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<tr>
<td>v. Marine Construction (Coastal defences/restoration)</td>
<td>Definitional &amp; data availability issues</td>
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<td>vi. Marine tourism (Leisure services)</td>
<td>MT not defined in national tourism data</td>
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<td>vii. Manufacturing (Equipment, medicines etc).</td>
<td>Definitional &amp; data availability issues</td>
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<td>viii. Marine Services (Mapping, surveying, consulting)</td>
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<tr>
<td>ix. Marine research and education</td>
<td>Definitional &amp; data availability issues</td>
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### Marine Economies 2015

**PRELIMINARY RESULTS**

- Estimates use data **currently available**
- APEC ME is \( \sim \$2.1\text{trn} \) (2015) \( \sim 4.8\% *\) of GDP (>industrialised economies 1-2%)
- Estimates to be confirmed with national focal points

*preliminary estimate

<table>
<thead>
<tr>
<th>ME as % of GDP</th>
<th>Australia</th>
<th>Brunei Darussalam*</th>
<th>Canada</th>
<th>Chile**</th>
<th>China</th>
<th>Hong Kong SAR, China</th>
<th>Indonesia</th>
<th>Japan</th>
<th>Korea, Rep.</th>
<th>Malaysia</th>
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<th>Papua New Guinea**</th>
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<th>Philippines</th>
<th>Russian Federation*</th>
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<th>Chinese Taipei**</th>
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Challenges in developing marine accounts: governance and institutions.

• Why do government not prioritise obtaining ocean accounts data? – *Don’t see the need, Does not fit in NA system; “Its not our job”... Why does marine think they are special?*

• Departments, roles and institutions: *If not the national accounts/statistical office? Which government dept? Sector knowledge often with Marine Depts. or external academics- not inducing central government responsibility. Why environment Depts?*
Gaining marine accounting information - People……capacity development issues!

- Why do government not prioritise staff to develop ocean accounts? - *No designated staff to develop them*
  - Expertise and marine interest vested in “other departments” or external academics
  - Key marine industries contacts see benefit in data and understand marine industries (assist with “Partialss”)
Conclusions

Ocean accounts:

- Governance decisions require ME data;
- Limited adoption by national account systems;
- Industry V environmental requirement for data - the SNA risks being left behind in the race to SDG 2030?;
- Capacity development and awareness raising are a major international need;
- Data on the ME is needed by policy makers to regulate, plan for added value and protect sustainability.
Thank you.

 ESCAP-GOAP invitation;
 PEMSEA, Dr Maricor Ebarvia-Bautista and Mr Adrian Ross;
 and
 APEC, Ocean & Fisheries Working Group/ US State Dept.

Author contact: amcilgor@uow.edu.au
The big picture – the last 50 years

Economic benefits from marine resources
UN Law of the Sea convention supports national jurisdictions and development of the marine sector commences

Global sustainability
UN/Rio 20+ and greening of the oceans and the economy. Small island developing states vocal on marine resources

Innovation
Ecologically based innovation promoted and new marine industries and growth envisaged.

Blue economy ...an umbrella term
A process where LOS rights lead to economic development
SOC reports- (Part 3) Governance, Institutional arrangements and encouraging investment

• Governance (regulation, policies etc)
  – Sustainable development action plans
  – Supporting mechanisms (*R&D, Capacity development, incentives, financing & stakeholder participation*);

• Institutional arrangements – partnerships and PPP

• Private sector investment and financing
  – Facilitating business development through enabling conditions (eg. Rights) and financing mechanisms.
Examples of BE initiatives in SOC reports

• **Malaysia**- green ports/eco-ships, with a GP index, increase in green practices, protect & restore habitat;

• **Thailand**- conserve eco-tourism sites & rare & end. Spp. Financing mechanism for conservation;

• **Korea**- Ocean tidal, wave and OTEC energy with a range of tech. environmental and social issues;

• **China**- Marine natural products/ Bio-tech;

• **Indonesia** – Blue carbon, valuing, restore and develop livelihoods;

• **Philippines**- solid waste & water management.
Opportunities in the Blue economy?

- **Increase industry growth** within sustainable limits and contain any external costs;
- Develop **frame works** to promote innovation;
- **Reduce external costs** from activities e.g. pollution;
- **Reduce wasteful interactions**: (i) competition (e.g. reduce fishing effort) and (ii) sectoral inter-actions.
- If the environment or equity are losing...then it may not be blue economy development!
- We require **a new Blue economy MSU planning framework** to deliver plans and accountability;
- Current PEMSEA project....
The recommended “common approach”

- Defining industries in the marine economy;
- Identify those industries in the national accounts;
- Estimate the proportion of total activity that is marine related (have this transparent);
- Record the activity estimate;
- Compare with available industry sources~ i.e. survey data /information to confirm estimates.