

## ABAC SUSTAINABLE DEVELOPMENT WORKING GROUP MATRIX

Agenda Item		ABAC USA Action	
2.a Final version of the research on APEC open innovation platform		Monitor	
Issue			
Numerous barriers to cutting-edge technology dissemination and development still exist across the APEC region			
Deliverable/Objective		Status	
-Report out on the results of study, suggest ABAC recommendations		-ABAC Chinese Taipei has completed the second phase of research for its study aimed at investigating the feasibility of creating an APEC Open Innovation Platform to facilitate the spread of cutting-edge technology by addressing barriers related to IP development and protection. The second stage of their research consists of a survey of SMMEs and government stakeholders focused on barriers to open innovation policies.	
Supporting ABAC Economies	Dissenting ABAC Economies	USG Position (if known)	
Chinese Taipei			
ABAC USA Position/Talking Points/Recommendations			
USA should monitor for language on technology transfer and intellectual property rights that US industry may not support.			

Agenda Item		ABAC USA Action	
2.b. Report on APEC Policy Partnership on Science, Technology, and Innovation		Monitor	
Issue			
Deliverable/Objective		Status	
Supporting ABAC Economies	Dissenting ABAC Economies	USG Position (if known)	
Hong Kong USA Russia		The Department of State is supportive of increased private sector engagement in this forum.	
ABAC USA Position/Talking Points/Recommendations			

Agenda Item		ABAC USA Action	
3.a. PwC Study on infrastructure and investment in the Asia Pacific		Monitor	

<b>Issue</b>		
No document available at this time.		
<b>Deliverable/Objective</b>		<b>Status</b>
No document available at this time.		
<b>Supporting ABAC Economies</b>	<b>Dissenting ABAC Economies</b>	<b>USG Position (if known)</b>
<b>ABAC USA Position/Talking Points/Recommendations</b>		
No document available at this time.		

<b>Agenda Item</b>		<b>ABAC USA Action</b>
3.a. Infrastructure Investment Checklist and Report		<b>Presentation by Ed Rapp</b>
<b>Issue</b>		
Development of a checklist containing policies that enable infrastructure investment in the APEC region		
<b>Deliverable/Objective</b>		<b>Status</b>
Update the ABAC on the latest draft of the Checklist and Report outline, encourage feedback and lay groundwork for intersessional endorsement		ABAC USA has created a draft of the Checklist with input from experts and stakeholders. Currently additional feedback is needed from the ABAC
<b>Supporting ABAC Economies</b>	<b>Dissenting ABAC Economies</b>	<b>USG Position (if known)</b>
ABAC Japan, ABAC Hong Kong		The USG supports Indonesia's APEC 2013 theme of regional connectivity and efforts to build capacity in this area.
<b>ABAC USA Position/Talking Points/Recommendations</b>		
<ul style="list-style-type: none"> <li>- A Checklist that brings together ABAC's different work streams on investment and infrastructure development can potentially serve as a useful tool for APEC economies. It will enable us to further leverage ABAC's existing recommendations and provide business input into APEC's developing multiyear infrastructure policy discussion.</li> </ul>		

<b>Agenda Item</b>		<b>ABAC USA Action</b>
3.b. Next Generation Water Network System		Monitor
<b>Issue</b>		
<b>Deliverable/Objective</b>		<b>Status</b>
		Originally discussed in 2012. Japan conducted a water use study in the US in late 2012 and will present Japanese water saving initiatives.
<b>Supporting ABAC Economies</b>	<b>Dissenting ABAC Economies</b>	<b>USG Position (if known)</b>

Japan	None	APEC does not have a venue for the discussion of water security.
<b>ABAC USA Position/Talking Points/Recommendations</b>		
An initial objective of this effort should be to get APEC to agree to discuss this issue.		

<b>Agenda Item</b>		<b>ABAC USA Action</b>	
4.a. Update on APEC Policy Partnership on Food Security		Presentation by Barbara Hazzard(NCAPEC)	
<b>Issue</b>			
The PPFS needs the private sector's engagement to develop the "business plan" component of the roadmap.			
<b>Deliverable/Objective</b>		<b>Status</b>	
<ul style="list-style-type: none"> <li>ABAC should provide PPFS with its view of the roadmap and provide concrete suggestions for the "business plan" for the stated goals</li> <li>ABAC recommends a private sector PPFS meeting during the China year to energized and consolidate private sector participation in the PPFS</li> </ul>		APEC created the Policy Partnership on Food Security in 2011 to institutionalize private sector engagement on the important issue of establishing food security in the region by 2020. The PPFS held its third plenary June 22-24 in Medan, Indonesia where it adopted a strategic "Road Map to 2020 (version 2013)" that lists 81 areas that need to be addressed to reach the PPFS goal of "a food system structure by 2020 sufficient to provide lasting food security to the APEC member economies. "ABAC has been pushing to ensure that the road map will be written with business principals in mind.	
<b>Supporting ABAC Economies</b>		<b>Dissenting ABAC Economies</b>	<b>USG Position (if known)</b>
China, Japan, USA, NZ, broad support		None	Very supportive
<b>ABAC USA Position/Talking Points/Recommendations</b>			
ABAC US supports strong recommendations that the road map must engage the private sector both in its creation and proposed solutions. A private sector meeting in China would help to re-energize the private sector's interest in the PPFS.			

<b>Agenda Item</b>		<b>ABAC USA Action</b>	
5.a. The Blue Economy: Marine Challenges Facing Australia/Implications for APEC		Monitor	
<b>Issue</b>			
The role of aquaculture in the Blue Economy: innovation to enhance the economic benefits to small scale farmers whilst conserving marine ecosystems of the region			
<b>Deliverable/Objective</b>		<b>Status</b>	
<b>Supporting ABAC Economies</b>		<b>Dissenting ABAC Economies</b>	<b>USG Position (if known)</b>
<b>ABAC USA Position/Talking Points/Recommendations</b>			

Agenda Item		ABAC USA Action	
6.a. Update on APEC's Connectivity Agenda/Promote Energy Market Integration (EMI)		Monitor	
Issue			
Leveraging Indonesia's connectivity agenda to promote improving connectivity in the energy sector with an aim towards promoting energy market integration.			
Deliverable/Objective		Status	
<ul style="list-style-type: none"> <li>Develop a framework to consider relevant issues from EMI perspective instead of creating new work streams</li> <li>Develop a mechanism to track APEC economies' progress toward EMI</li> <li>Promote capacity building and technical cooperation in area of clean energy</li> </ul>		Originally discussed at ABAC II	
Supporting ABAC Economies	Dissenting ABAC Economies	USG Position (if known)	
		USG is actively engaged in an ASEAN-EAS energy partnership and is looking for way to promote increased integration.	
ABAC USA Position/Talking Points/Recommendations			
ABAC Indonesia is recommending leveraging the APEC Energy Working Group to take the lead on this initiative. The EWG no longer has a mechanism for private sector engagement. ABAC should be cautious about relying too heavily on the EWG without a role for private sector input.			

Agenda Item		ABAC USA Action	
6.b. Smart Grid Case Study		Monitor	
Issue			
Continuation of ABAC efforts to identify how to promote emerging technologies that can promote green growth.			
Deliverable/Objective		Status	
<ul style="list-style-type: none"> <li>Expand APEC discussion of smart grids to include micro-grids</li> <li>Create a research center or program for smart grids at the Asia Pacific Energy Research Center</li> </ul>		Smart Grid has been discussed in several APEC fora, micro-grids have not yet been discussed	
Supporting ABAC Economies	Dissenting ABAC Economies	USG Position (if known)	
Broad Support	None		
ABAC USA Position/Talking Points/Recommendations			
US ABAC is supportive of efforts to harmonize standards and testing certifications to increase interoperability.			

Agenda Item		ABAC USA Action	
7. Other Business			
Issue			
No documents available at this time.			
Deliverable/Objective		Status	
No documents available at this time.			
Supporting ABAC Economies	Dissenting ABAC Economies	USG Position (if known)	
ABAC USA Position/Talking Points/Recommendations			
No documents available at this time.			

**Sustainable Development Working Group  
 1400-1630, Tuesday 9th July 2013  
 Venue: Level 4 GYOUN, Kyoto Hotel Okura**

**Agenda**

<b>Agenda Item No.</b>	<b>Issue</b>	<b>Lead Economy/ Speaker</b>	<b>Doc. No.</b>
<b>1</b>	<b>Opening Remarks</b> - Welcome, introductory remarks - Approval of the ABAC II 2013 SDWG meeting minutes - Approval of the Agenda-5mins	Chair/Frank Gaoning Ning	SDWG 33-024  SDWG 33-025
<b>2</b>	<b>Technology Dissemination</b>		
<b>2a</b>	Final version of the research on APEC open innovation platform-15mins	ABAC Chinese Taipei/Dr. Steven Lee	
<b>2b</b>	Report on outcomes of the APEC PPSTI Forum-15mins	ABAC China Hong Kong/ PPSTI Principal Advisor/ Nick Brooke	
<b>3</b>	<b>Infrastructure Development</b>		
<b>3a</b>	PwC study on infrastructure and investment in the Asia Pacific-15mins	ABAC Indonesia/ Guest speaker: Mark Rathbone/PwC Asia Pacific Infrastructure and Capital Projects Leader	
<b>3b</b>	Final version of enablers of infrastructure investment checklist-15mins	ABAC USA/Ed Rapp	
<b>3c</b>	Smart water solution-15mins	ABAC Japan/Yoshinori Komamura Guest speaker: Minoru Takeuchi/ Toshiba Corporation	SDWG 33-028 SDWG 33-028A
<b>4</b>	<b>Food Security</b>		
<b>4a</b>	Update on PPFS-15mins	ABAC USA/Barbara Hazzard	
<b>5</b>	<b>Blue Economy</b>		
<b>5a</b>	The Blue Economy: What are the grand marine challenges facing Australia and the implications for the APEC Region?-20mins	ABAC Australia/Anna Buduls Guest speaker: Dr Nigel Preston/CSIRO Food Futures Flagship	SDWG 33-026
<b>6</b>	<b>Green Growth</b>		
<b>6a</b>	Update on leverage APEC's connectivity agenda to promote energy market integration in the Asia-Pacific-15mins	ABAC Indonesia/ Ibu Karen Agustiawan	SDWG 33-027

6b	Smart grid case study-15mins	ABAC Korea/ Guest speaker:	
7	<b>Other Issues</b> -5mins - Other Business - Closing Remarks	Chair/Frank Gaoning Ning	

**Document Title:**

ABAC Enablers of Infrastructure Investment Checklist

**Purpose:**

For endorsement

**Issue:**

Development of a policy checklist to leverage ABAC's recommendations and enable APEC economies to self-assess the extent to which their regulatory environment facilitates FDI in infrastructure.

**Background:**

In 2012 ABAC developed the report "Policy Recommendations to Strengthen the Role of the Private Sector in Infrastructure Development." This document highlighted policies that APEC economies should implement to promote the participation of the private sector in meeting the infrastructure needs of APEC economies.

To further leverage existing work and ABACs' recommendations, at ABAC I in Manila ABAC USA proposed that ABAC, in collaboration with APEC economies, create an "Enablers of Infrastructure Investment Checklist" at ABAC I in Manila. The Checklist would serve as a self-evaluation tool that economies could use to assess the extent to which existing policies promote the participation of the private sector in infrastructure investment. The content of the Checklist is based on existing infrastructure recommendations as well as input from other experts and references existing work in institutions like the World Bank.

▪ Currently the Checklist contains assessment questions and key performance indicators under 4 overarching categories:

- Augmenting Government Project Planning and Coordination Mechanisms
- Building a Strong Financial and Financing Environment
- Developing Robust PPP Mechanisms and Frameworks
- Creating and Maintaining a Strong Investment Environment to Attract Foreign Direct Investment (FDI)

After gathering additional feedback from the ABAC, ABAC USA intends to finalize the Checklist and accompanying policy report by the end of July, at which point it will be circulated for intersessional endorsement and subsequently sent to APEC Senior Officials.

**Proposal /Recommendations:**

- Gather final input from the ABAC on the content of the Checklist, endorse intersessionally in late July

**Decision Points:**

- Endorse the recommendations outlined above.

## **DRAFT - ABAC Enablers of Infrastructure Investment Checklist**

Infrastructure investment is a critical component to meet the demands of the dynamic Asia-Pacific (APEC) region and to promote sustained economic growth throughout the APEC economies. With a rapidly growing population and middle class, the APEC region is expected to need about US\$8 trillion in infrastructure investment to meet demands in such areas as energy, transportation, water and sanitation. However, infrastructure investment in the APEC region is not keeping pace with the current demand. To reverse this trend and create a more competitive environment that will foster the needed growth in infrastructure investment, APEC economies – individually and as a region – must work harder to attract investment and to plan, finance and execute large scale investments in long term projects. The private sector can provide funding and expertise, but partnering with investors and utilizing financing mechanisms, including Public Private Partnerships (PPPs) requires deep institutional capacity and effective coordination across government agencies to ensure a positive outcome.

To help prepare the APEC economies for this multi-disciplinary challenge, the APEC Business Advisory Council has created an “Enablers of Infrastructure Investment Checklist”. The Checklist is designed to serve as a self-evaluation tool that governments can use to assess the extent to which existing policies promote the participation of the private sector in infrastructure investment. Governments will be encouraged to conduct a self-assessment, to determine the extent to which their own policies promote or hinder participation of the private sector in infrastructure development. Subsequently they will be encouraged to report their findings back to APEC stakeholders as a means of sharing learning among economies.

In addition to serving to identify and prioritize for economies those policies that impact the policy environment for infrastructure investment, the Checklist is designed in a manner that requires inter-agency communication in order to complete the self-assessment. Policies affecting infrastructure investment necessarily transcend the jurisdiction of any single government agency. By completing the Checklist officials from relevant agencies will be able to identify areas where policies (related to infrastructure investment) in one regulatory agency may not be aligned with policies in another agency.

This Checklist is structured under four overarching policy categories, identified by the APEC Business Advisory Council:

- Augmenting Government Project Planning and Coordination Mechanisms
- Building a Strong Financial and Financing Environment
- Developing Robust PPP Mechanisms and Frameworks
- Creating and Maintaining a Strong Investment Environment to Attract Foreign Direct Investment (FDI)

Each sub-section consists of a series of evaluation criteria, presented as questions; followed by a list of metrics that can be used to assess how governments are performing on the questions posed.

The second part of each sub-section provides a set of Key Performance Indicators, which provides useful metrics for assessing the extent to which a government satisfies each checklist question. This includes objective metrics available through public data sources such as the World Bank’s *Doing Business* report and *Investing Across Borders* project, as well as the World Economic Forum’s *Global Competitiveness Report*.

<b>I. Augmenting Government Project Planning and Coordination Mechanisms</b>	
<b>Assessment Question</b>	<b>Comment</b>
Does the government consistently offer projects that are part of an integrated infrastructure master plan ?	
Does the government consistently offer projects with strong political and stakeholder support?	
Is seeking permits and regulatory approvals (for construction, operation, and so on) straightforward and predictable?	
Does the government consistently offer projects that are economically viable?	
Does the government consistently offer projects that provide value for money?	
Does the government consistently offer projects that are financially viable and creditworthy?	
Is seeking permits and regulatory approvals (for construction and operation) timely and predictable?	
Is the process for acquiring land timely and predictable?	
<b>Key Performance Indicator</b>	
Were the largest five infrastructure projects commissioned in the last five years part of a multi-year integrated infrastructure master plan?	
Does the project approval process include consultation with stakeholders such as the beneficiaries of the project and relevant sector agencies?	
Does the project approval process consider, as a decision criterion, whether the project is economically viable?	
Does the approval process for PPPs require the use of a public sector comparator?	
What percentage of projects that were bid out by the government over the last five years, achieved financial closure?	
What is the economy's ranking on the <i>Dealing with Construction Permits</i> indicator in the World Bank's <i>Doing Business</i> Report?	
What is the average number of months it has taken, from when funding for the infrastructure project is secured to when land is fully acquired for the project?	
The economy's ranking on the <i>Assessing Industrial Land</i> indicator in the World Bank's <i>Investing Across Borders</i> Report?	
Are government officials and private sector training to utilize anti-corruption codes, such as the APEC Hanoi Principles?	
Are regional officials engaging in consultations with the private sector, such as the Asia Pacific Infrastructure Partnership (APIP)?	

<b>II. Building a Strong Financial and Financing Environment</b>	
<b>Assessment Question</b>	<b>Comment</b>
<p>Is the local currency suitable for foreign investment?</p> <ul style="list-style-type: none"> <li>- Is the local currency stable?</li> <li>- Is the local currency convertible?</li> <li>- Are there capital flow controls or constraints?</li> </ul>	
<p>Can investors raise debt to finance infrastructure projects?</p> <ul style="list-style-type: none"> <li>- Is debt available in local currencies?</li> <li>- Is debt available for long tenors?</li> <li>- Is debt available in the amount needed?</li> <li>- Does the local cost of capital command a risk premium that drives rates to untenable levels for project debt?</li> </ul>	
<p>Are there local equity investors willing and able to invest for long-term returns?</p>	
<b>Key Performance Indicator</b>	<b>Comments</b>
<p>Has the economy experienced any major shocks in the exchange rate over the past ten years?</p>	
<p>Is there a liquid, local-currency denominated fixed-rate medium-term (greater than five years) bond market for debt, which is traded freely?</p>	
<p>Ranking on the <i>Getting Credit</i> indicator from the World Bank's Doing Business Report.</p>	
<p>Ranking on the <i>Ease of Access to Loans</i> indicator in the World Economic Forum's Global Competitiveness Report.</p>	
<p>What is the economy's ranking on the <i>Financing Through Local Equity Market</i> indicator in the World Economic Forum's Global Competitiveness Report?</p>	

<b>III. Developing Robust PPP Mechanisms and Frameworks</b>	
<b>Assessment Question</b>	<b>Comments</b>
<p>Do PPP structures match project financing norms?</p>	
<p>Are project risks assessed relative to appropriate risk benchmarks for similar projects?</p>	
<p>Is there a well-defined project preparation and procurement process, and are project evaluation criteria clear?</p>	

Do PPP contracting documents follow international best practices?	
Is there a credible plan to fulfill the government's commitment on PPP projects?	
Are there mechanisms to coordinate and gather input from ministries and other stakeholders during project preparation process?	
Do government officials know how to plan and execute PPP projects? For instance, are they competent and skilled in: <ul style="list-style-type: none"> <li>- Financial modeling</li> <li>- Negotiating contracts</li> <li>- Contract management</li> <li>- Risk management</li> </ul>	
Is there a clear pipeline of PPP projects and a timetable for executing them?	
<b>Key Performance Indicator</b>	
What percentage of projects that have been bid out by the government over the past five years, secured project finance debt?	
Does the economy have a PPP process manual that explains the transaction preparation process?	
Does the economy have a PPP policy or law that provides guidance for PPP procurement?	
Do PPP contracts from prior transactions contain sections that state key PPP parameters such as the rights and responsibilities of the parties involved, and the performance metrics against which the project will be evaluated?	
Has the government made, in the past, allocations in the budget for required financial support for projects? Has the government historically honored these commitments?	
Is there an inter-ministerial body that approves PPP projects in the economy?	
Has the government successfully completed PPP transactions, where government officials conducted financial analysis, negotiated and managed contracts, and analyzed and managed project risks?	
Does the government have a clear pipeline of PPP projects and a timetable for executing them?	

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<b>IV. Creating and Maintaining a Strong Investment Environment to Attract Sufficient FDI</b>	
<b>Assessment Question</b>	<b>Comments</b>
Are there protections against arbitrary changes in policies or regulations?	
Are there laws and regulations that deter corruption?	
Are taxes fair and consistently applied?	
Does the government comply with international treaties and conventions on arbitration?	
Are property rights well-defined and consistently protected?	
Are foreign assets protected from expropriation without fair compensation?	
<b>Key Performance Indicator</b>	
What is the economy's ranking on the <i>Efficiency of the Legal Framework in Challenging Regulations</i> indicator in the World Economic Forum's Global Competitiveness Report?	
What is the economy's ranking on the Transparency International's <i>Corruptions Perception</i> Index?	
The economy's ranking on the <i>Diversion of Public Funds and Irregular Payments and Bribes</i> indicators in the World Economic Forum's Global Competitiveness Report.	
What is the economy's ranking on the <i>Extent and Effect of Taxation</i> indicator in the World Economic Forum's <i>Global Competitiveness Report</i> ?	
The number of double taxation treaties in force.	
Has the economy signed, and does it implement, the New York Convention on the Enforcement of Arbitral Awards, or comparable provisions?	
The economy's ranking on the <i>Arbitrating Commercial Disputes</i> indicator in the World Bank's Investing Across Borders Report.	
What is the economy's ranking on the <i>Enforcing Contracts</i> indicator in the World Bank's Doing Business Report, and on the <i>Property Rights and Intellectual Property Protection</i> indicators in the World Economic Forum's Global Competitiveness Report?	

What is the economy's ranking on the <i>Protecting Investors</i> indicator in the World Bank's Doing Business Report and <i>Strength of Investor Protection</i> indicators in the World Economic Forum's Global Competitiveness Report?	

# ABAC Enablers of Infrastructure Investment Checklist

ABAC USA

## Background

- **Diverse ABAC/APEC infrastructure work and recommendations**
  - APEC Finance Ministers Process
  - ABAC Measures to Promote FDI
  - Asia Pacific Infrastructure Partnership (APIP)
- **ABAC I – Manila: Endorsed the creation of “Enablers of Infrastructure Investment Checklist” and a companion report**
- **Both the Checklist and Report will leverage work in the APIP and other ABAC work tied to infrastructure and investment**

## Checklist Overview

- **Issues divided into a series of overarching categories:**
  - Augmenting Government Project Planning and Coordination Mechanisms
  - Building a Strong Financial and Financing Environment
  - Developing Robust PPP Mechanisms and Frameworks
  - Creating and Maintaining a Strong Investment Environment to Attract FDI
  
- **Key Performance Indicators (KPI) for each category to measure progress**

## Checklist Category Example:

### **Augmenting Government Project Planning and Coordination Mechanisms**

Examples of Assessment Questions:

- Does the government consistently offer projects that are part of an integrated infrastructure or management plan?
- Is the process for acquiring land timely and predictable?

Examples of KPIs

- Percentage of projects that were bid out by the government over the last five years that have achieved financial closure.
- The economy's ranking on the *Dealing with Construction Permits* indicator in the World Bank's *Doing Business* Report.

## Infrastructure Investment Report

- The Checklist's recommendations will be reinforced by a detailed report similar to *Investing for Growth* (developed by ABAC in 2011)
- The report is currently under development and will include individual submissions from a number of experts
- A draft will be circulated for review and endorsement shortly after ABAC 3 in mid July

## APEC's Work on Infrastructure

- APEC 2013 Trade Ministers Statement
  - Affirmed importance of improving investment climate in region, including through addressing impediments to private financing of infrastructure and leveraging PPPs
  - Instructed APEC Senior Officials to develop a unifying, forward-looking, and ambitious APEC Framework on Connectivity
  - Called for the creation of a multi-year plan to develop a coordinated approach to infrastructure investment and development, improve connectivity in region

## Implementation

- Inform and drive APEC's multiyear Infrastructure Investment and Development initiative
- Provide focused business input across APEC working groups
- Assist and further encourage assessments and measurement of progress

**Securing APEC's official support for the Checklist will be instrumental in helping us achieve these objectives**

## Advocacy efforts

- Coordination with Indonesian government
- SOM 2: Presentation to Senior Officials
- SOM 3: Presentation to APEC Investment Experts Group (IEG)
- Advocacy at upcoming APEC meetings:
  - APEC Transportation Ministers Meeting (Tokyo, Sept 4-6)
  - APEC Finance Ministers Meeting (Bali, Sept 20)

## Next Steps

- ABAC 3: Review Checklist, provide input and edits
- Endorse final drafts intersessionally (target date – July 29, 2013)
- Send Checklist to Senior Officials in advance of Bali Meetings

Please send your feedback on the Checklist and Report to ABAC USA ([dboman@ncapec.org](mailto:dboman@ncapec.org)) by July 29.

## Meeting Document Summary Sheet Template

<b>Document Title:</b>  Smart Water Solution
<b>Purpose:</b>  For consideration
<b>Issue:</b>  <b>Water Security:</b> Ideas for solving water issues through smart communities
<b>Background:</b>  <p>At the 2012 ABAC4 in Vladivostok, ABAC Japan presented the 2013 scenario for water security (re: Figure 1). We described the need to consider water as a component of water-food-energy nexus, not as a stand-alone issue.</p> <p>Our presentation will focus on the solution of water issues through the use of smart communities, learning from the examples of Toshiba.</p> <ul style="list-style-type: none"><li>• Global population is expected to grow from the current 7 billion to 8 billion by 2025, and to 9 billion by 2050. It is also a known fact that water demand will increase at a rate exceeding that of the population growth.</li><li>• According to Morgan Stanley, water accounts for 55% of the \$41trillion needed for infrastructure by 2030. Filling in this need is not only a socially responsible undertaking but also a great business potential.</li><li>• Toshiba recognizes Smart Community as a balance between the comfort of individuals and the creation of a sustainable community. It is understood that there is a huge business potential in developed as well as developing economies.</li><li>• ABAC Japan believes that combining simulation technology and operation know-how with ICT-based technology such as those held by Toshiba will facilitate the creation of a sustainable hydrological circulation system.</li></ul>
<b>Proposal / Recommendations:</b>  <b>Recommendations for effective use of water resources:</b> <With the recognition that conservation is the least expensive source of sustainable water> a) Conservation-enhancing tariff scheme - From flat rate to volume-based rate (esp. agricultural use)

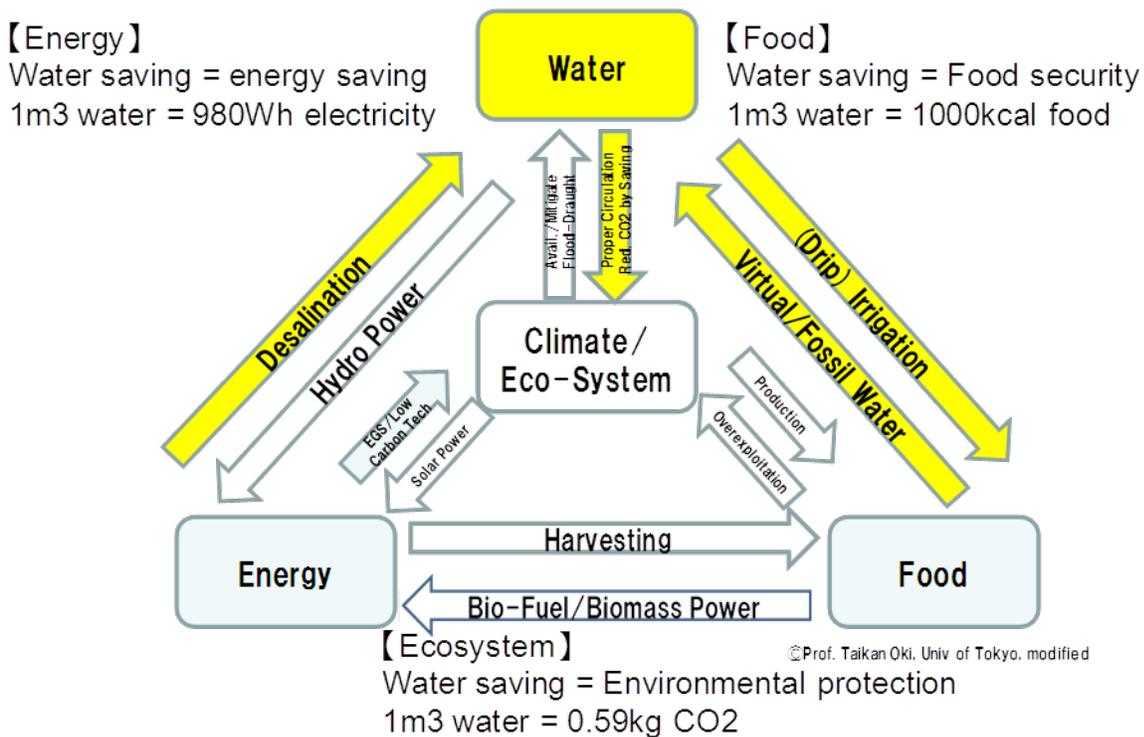
- Progressive rates and punitive rates to discourage excessive use (esp. municipal use)
- b) Introduction of water conservation incentives
- c) Promotion of the use of water-saving equipment and **ICT for efficient water resource management** and trade facilitation of such equipment
- d) Use of recycled water
- e) Improving and promoting leakage prevention technology

**Decision Points:**

To endorse the Recommendations to APEC Economic Leaders

(Figure 1)

Nexus of Water-Food-Energy-Ecosystem



- Discuss efficient use of water in a broader picture (incl. energy, food etc.)

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# Smart Water Solution

1. The Need for Global Water Infrastructure
2. Recommendations to APEC Economic Leaders
3. What is a Smart Community ?
4. Smart Water Solutions
  - ICT Realizes the Sustainable Water Cycle -

**ABAC Japan**

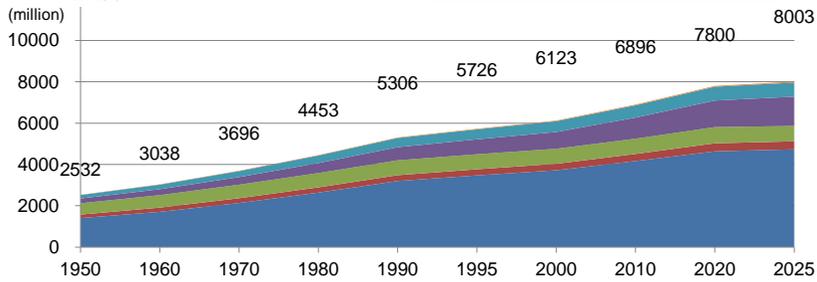
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1. The Need for Global Water Infrastructure

## Population Growth

- Australia and Oceania
- Latin America and The Caribbean
- Africa
- Europe
- North America
- Asia

By 2025:

- Global population will reach 8 billion
- Growth will be largest in Asia which will have over 4.7 billion



(in Million)	2010	2025	vs2010
Asia	4,164	4,736	1,136
North America	345	388	1,128
Europe	738	744	1,008
Africa	1,022	1,417	1,386
Latin America and the Caribbean	590	679	1,150
Australia and Oceania	37	45	1,220
Total	6,896	8,003	1,161

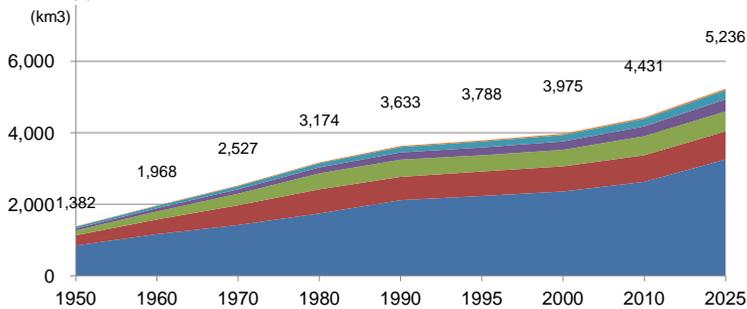
(Source: UN)

3

## Growing Demand for Water

- Australia and Oceania
- Latin America and The Caribbean
- Africa
- Europe
- North America
- Asia

- Marked growth in Asia and Latin America
- Conflicts over water may intensify

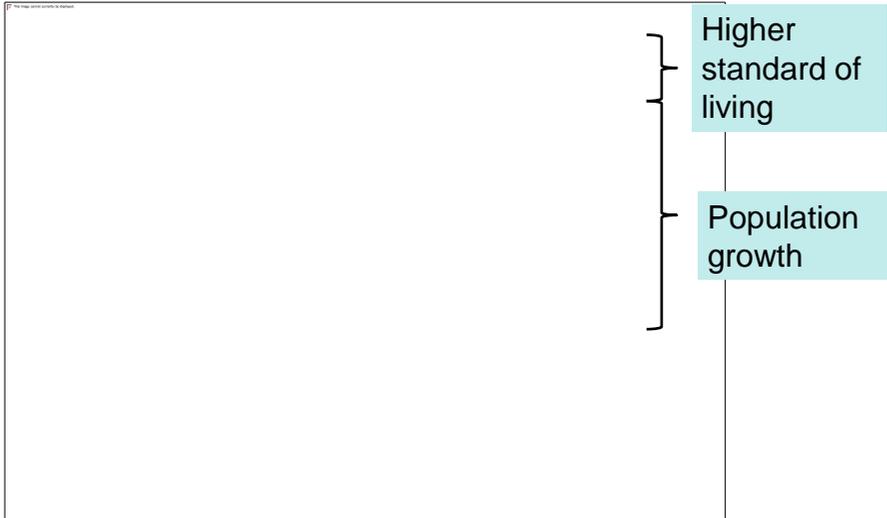


(in km³)	2010	2025	2010±
Asia	2,628	3,254	1,238
North America	744	786	1,056
Europe	535	559	1,045
Africa	275	337	1,225
Latin America and the Caribbean	213	260	1,221
Australia and Oceania	36	40	1,106
Total	4,431	5,236	1,182

(Source: UNESCO)

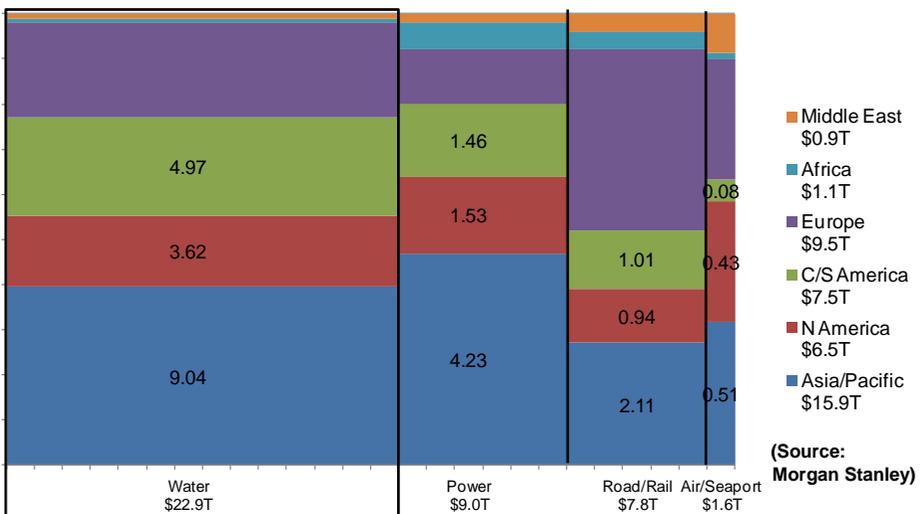
4

## Growth Rate of Water exceeds that of Population (Water shortage)



5

## Water is the Largest Infrastructure Business



- Total infrastructure needs: \$41.3T (2005-2030)
- Water accounts for 55%, or \$22.9T
- Need is greatest in Asia and Pacific region

6

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## 2. Recommendations to APEC Economic Leaders

7

### **Recommendations on Efficient Use of Water resource**

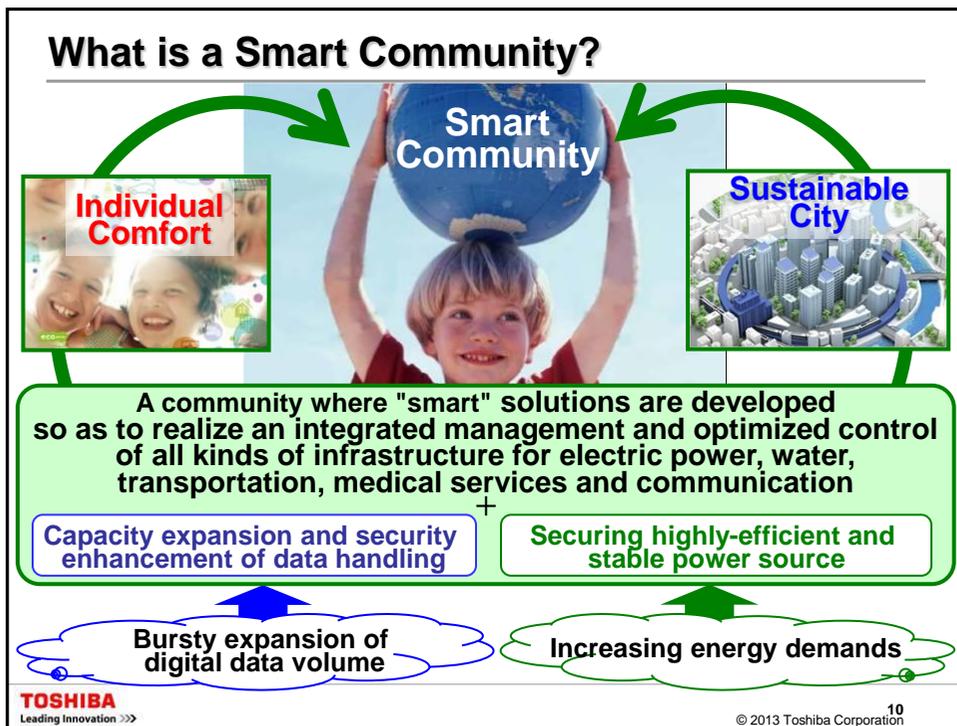
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<With the recognition that conservation is the least  
expensive source of sustainable water>

- a. Conservation-enhancing tariff scheme
  - From flat rate to volume-based rate (esp. agricultural use)
  - Progressive rates and punitive rates to discourage excessive use (esp. municipal use)
- b. Introduction of water conservation incentives
- c. Promotion of the use of water-saving equipment and **ICT for efficient water resource management**, and trade facilitation of such equipment
- d. Use of recycled water
- e. Improving and promoting leakage prevention technologies

8

### 3. What is a Smart Community ?



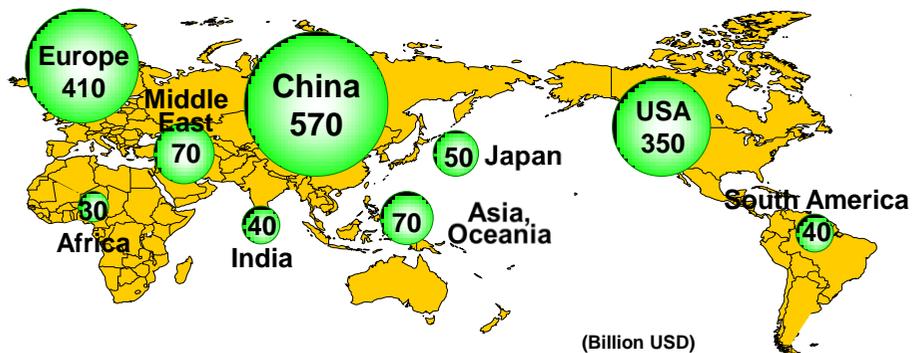
# Overview of TOSHIBA Smart Community Projects

Developing Smart Community projects that reflect local prioritized needs



## Global Smart Community Market

The market size in 2015 is estimated 1,630 billion USD

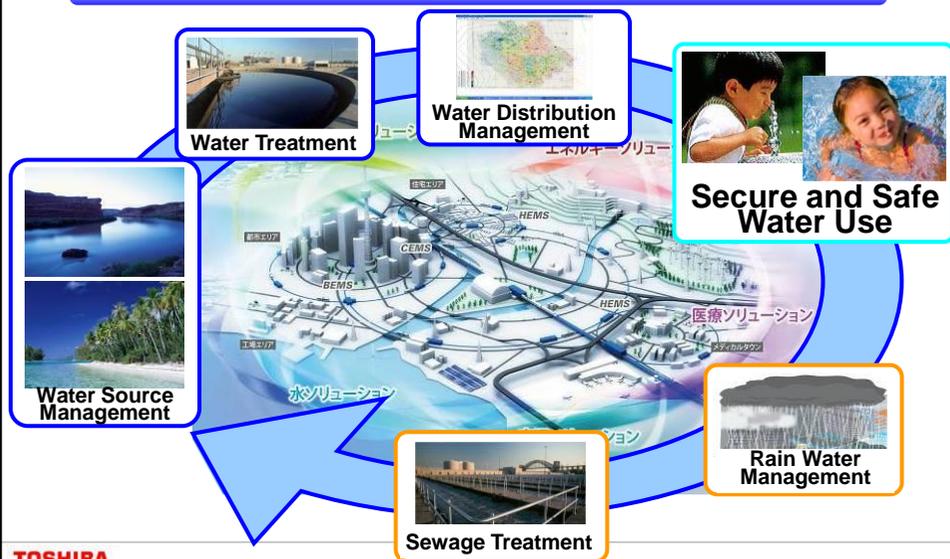


Note) The circle size indicates market size of each region. The number includes renewable energy, redevelopment of community and new development of community.

# 4. Smart Water Solutions - ICT Realizes the Sustainable Water Cycle -

## Toshiba's Smart Water Solutions

### ICT Realizes the Efficient Water Cycle



## An Example Project in Japan



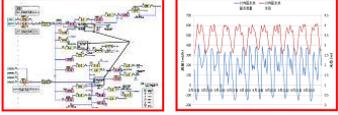
**Area**  
About **50** h a  
**Population**  
Approx. **100,000**

**> Subject**  
Securing water source  
by non-revenue water  
reduction



**> Point of solution**  
Fine water management by ICT

- Water distribution management
- Water supply & demand simulation



+

- Operation know-how  
(Efficient pump operation)



**> Result**

	- Before -		- After -
Non-revenue water rate	16.0%	▶	14.0% <small>( Estimation in the best case )</small>
The amount of the chlorine used for disinfection	13L/1000m <sup>3</sup>	▶	10L/1000m <sup>3</sup> <small>( Estimation in a summer case )</small>

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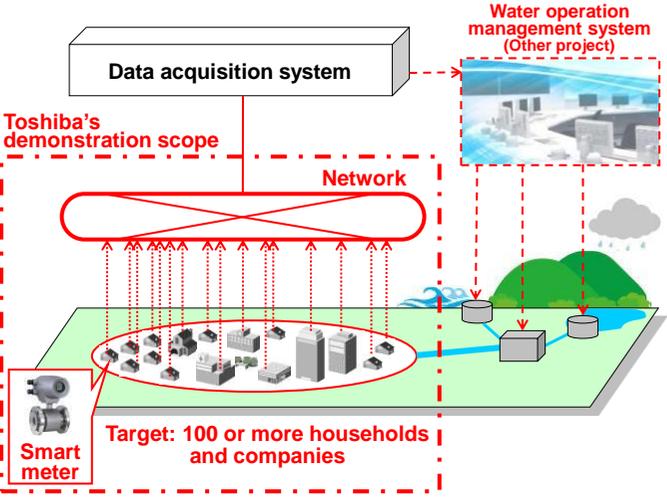
## Example Projects in EU



**Italy**  
**Milan**  
**Romania**  
**Timisoara**

**> Subject**  
Running cost cut  
by reduction of  
non-revenue water  
and energy  
consumption

**> Point of solution**  
Fine water real-time control by ICT



Target: 100 or more households and companies

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Leading Innovation >>>

**Meeting Document SDWG– ABAC III 2013, Kyoto**

**Document Title:**

Report to ABAC – “Readout from Medan PPFS Plenary Meeting”

**Purpose:**

For review and comments

**Issue:**

The PPFS needs the private sector’s engagement to develop the “business plan” component of the roadmap.

**Background:**

The APEC Policy Partnership on Food Security (PPFS) held its third plenary June 22-24 in Medan, Indonesia. PPFS adopted a strategic "Road Map to 2020 (version 2013)" that lists 81 areas that need to be addressed to reach the PPFS goal of "a food system structure by 2020 sufficient to provide lasting food security to the APEC member economies."

With the strategic goals in place, PPFS agreed to develop a "business plan" that would prioritize and time-phase the 81 areas and delineate specifically who will do what, when, where and how -- and how those will be financed.

Additionally, PPFS has done a stock-take of what entities, both within and outside of APEC, are already engaged on food security-related issues and it was agreed that PPFS would reach out to those entities to coordinate with, and assist, them.

**Proposal / Recommendations:**

- ABAC should provide PPFS with its view of the roadmap and provide concrete suggestions for the “business plan” for the stated goals
- ABAC recommends a private sector PPFS meeting during the China year to energized and consolidate private sector participation in the PPFS

**Decision Points:**

- Endorse the recommendations outlined above.

## Meeting Document SDWG Kyoto

**Document Title:**

Presentation to ABAC SDWG:

**The Blue Economy: What are the grand marine challenges facing Australia and the implications for the APEC Region?**

**Purpose:**

For consideration

**Issue:**

The need to collaborate on marine data gathering and dissemination in order to ensure the various aspects of the blue economy are safeguarded and maximised.

**Background:**

This presentation is based on a report prepared by the Australian Oceans Policy Science Advisory Group (OPSAG) “Marine Nation 2025: Marine Science to Support Australia’s Blue Economy”. The full report can be accessed via the internet at: <http://www.aims.gov.au/opsag>.

Australia claims the third largest marine jurisdiction of any nation on earth; 13.86 million km<sup>2</sup> more than double the size of its land mass. By 2025, the combined value of Australian marine industries is estimated to be more than \$100 billion per annum. The sustainable use and management of the marine environment, via the development of a Blue Economy, is a critical challenge that Australia shares with all APEC members.

The key to meeting this challenge is to ensure that our ocean ecosystems bring economic and social benefits that are efficient, equitable and sustainable. In this context, the OPSAG report identified six interconnected grand marine challenges facing Australia:

1. Sovereignty, security and natural hazards
2. Dealing with changing climate
3. Energy security
4. Food security
5. Biodiversity conservation and ecosystem health
6. Optimal resource allocation

Australia’s economic reliance on the oceans for transport, trade, energy, international communication and food provides a strong incentive to enhance our ability to observe and respond to every aspect of change in the physical, chemical and biological parameters of our oceans. This includes security threats, marine pollution and extreme events, such as tsunamis and cyclones.

The ability to collect and process marine data at finer scales in real time will enhance our ability to: rapidly detect change, predict the future and optimise management strategies. For example, the rapid expansion of offshore oil and gas, Australia’s most valuable marine industries,

significantly increases the risks of marine pollution. There is an urgent need for Australia and the APEC region to co-develop the knowledge and technology to enable us to minimise this risk. Optimising the use of wild harvest fisheries and the sustainable development of marine aquaculture will play an increasingly important role in the food security of the APEC region. A collaborative approach meeting this challenge will be of significant economic benefit to the whole region.

Likewise, sharing new approaches to detecting marine biodiversity hot-spots across the region will enhance our collective ability to protect these hot-spots. This challenge spans the entire biotic community including the marine microbes that play such a vital role in the global carbon cycle and the biogeochemical processes of the world's oceans.

This presentation will illustrate some examples of collaborative opportunities and strategies to optimise the Blue Economy of the APEC region.

**Proposal /Recommendations:**

**Decision Points:**

- Endorse APEC economies commence and further participation in marine data gathering and sharing with close involvement of the private sector, particularly as regards food security issues.

# The Blue Economy: What are the grand marine challenges facing Australia and the implications for the APEC region ?



FOOD FUTURES FLAGSHIP

[www.csiro.au](http://www.csiro.au)

**Nigel Preston**

Acting Director, CSIRO Food Futures Flagship



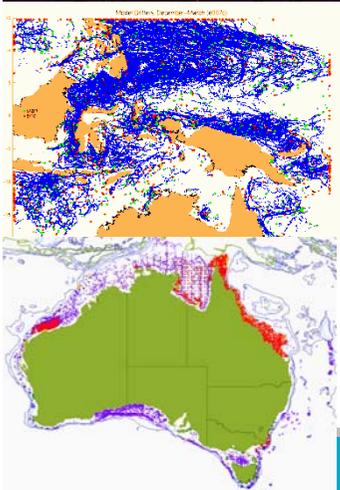
# Australia's Maritime Jurisdiction



**Australia's total  
area of marine  
responsibility  
covers 14 % of the  
world's oceans.**

# The six interconnected grand challenges

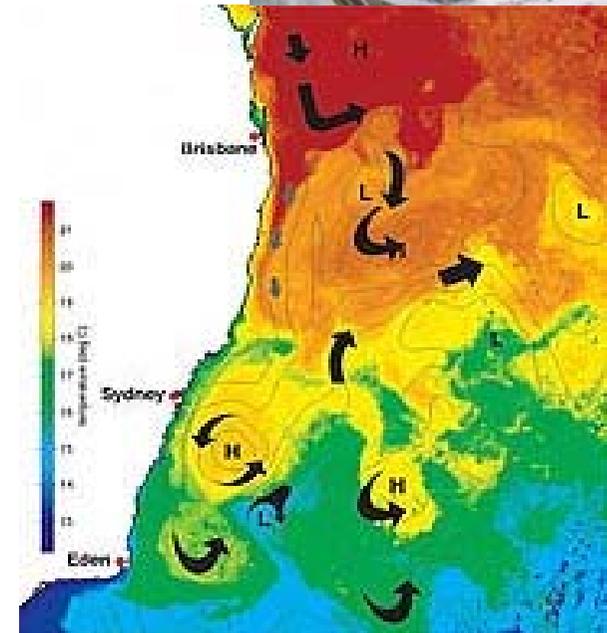
1. Sovereignty, security, natural hazards
2. Dealing with climate change
3. Energy security
4. Food security
5. Biodiversity conservation and ecosystem health
6. Optimal resource allocation



# Sovereignty, security, natural hazards & climate change

## Critical need for data at finer scales and real time:

- Transport, trade, energy, international communication and food
- Maritime security threats
- Biosecurity and marine pollution
- Growth in oil and gas developments and shipping
- Risk of oil spills impacts of biodiversity
- Adapting to changing climate & natural hazards
- From tropical seas to the Southern Ocean

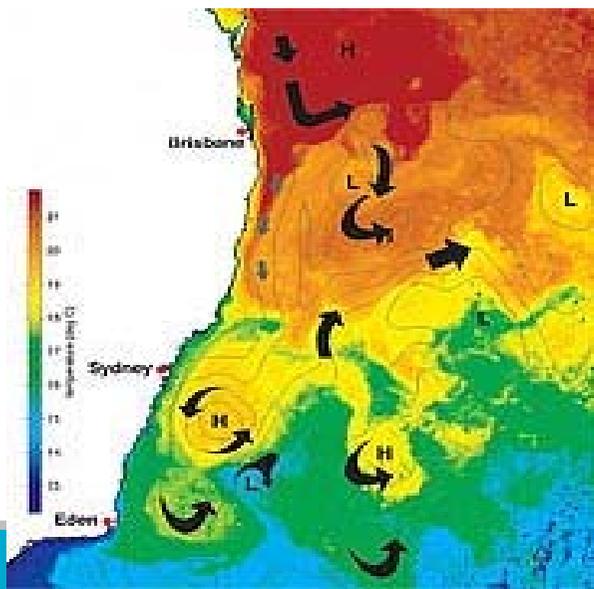


# New tools for collecting and modelling data

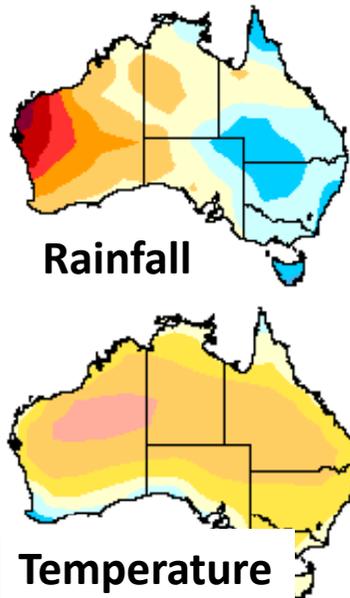
**BLUElink:** A \$33 million initiative to develop an ocean modelling and analysis capability to produce accurate forecasts of ocean conditions in the Australian region for the first time

**OzClim:** generates climate change scenarios using the pattern of change for the whole 21st century, individually from each of 23 global climate models

**Ocean currents**



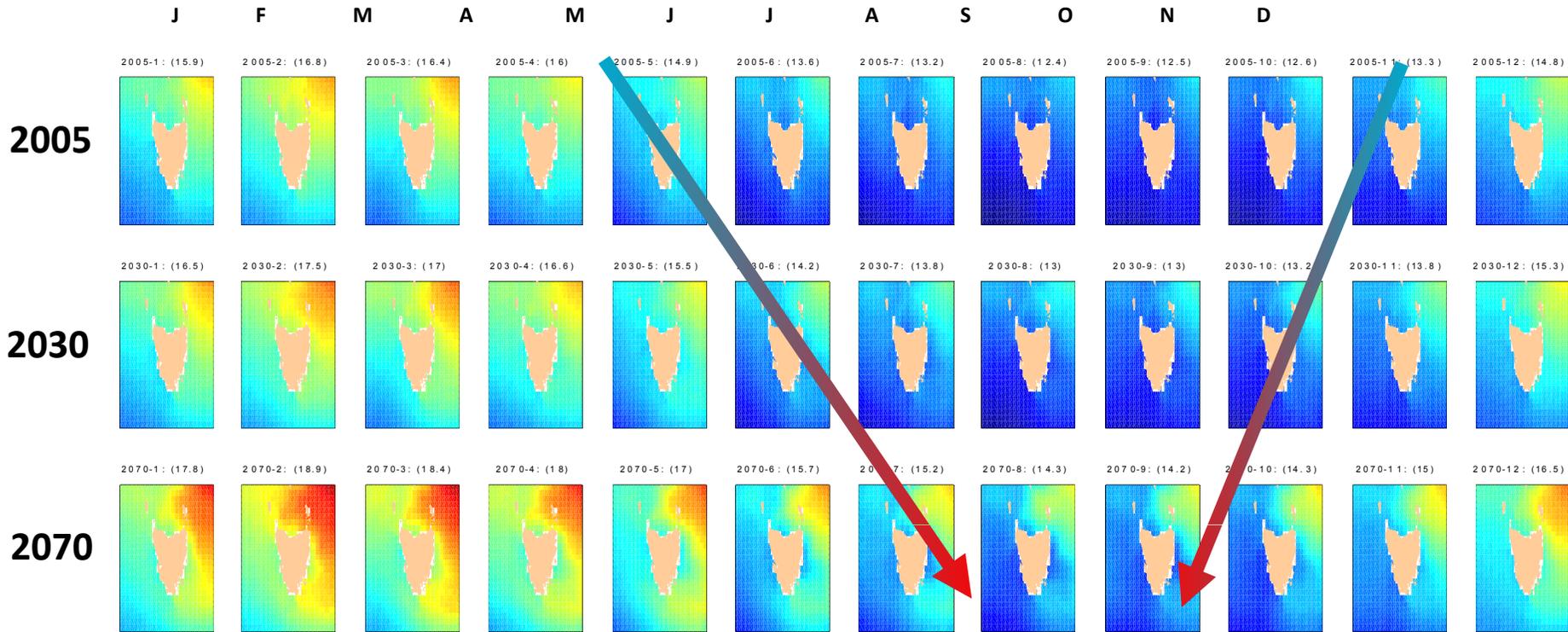
**Climate change**



**Coastal impacts**



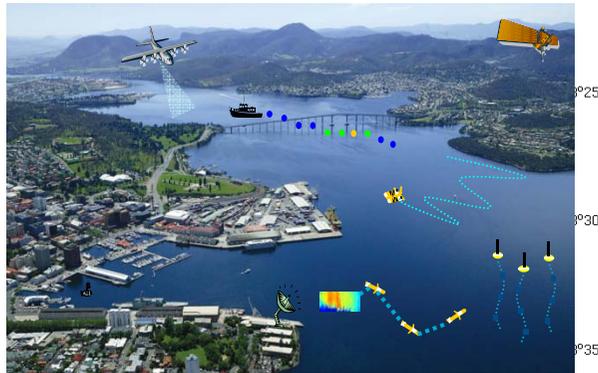
# Using these tools to predict the future



Warming of Tasmania

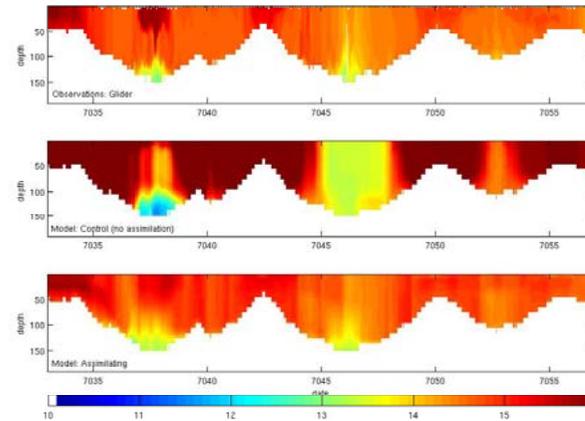
# Linking observation, models and strategy

## Automated data collection



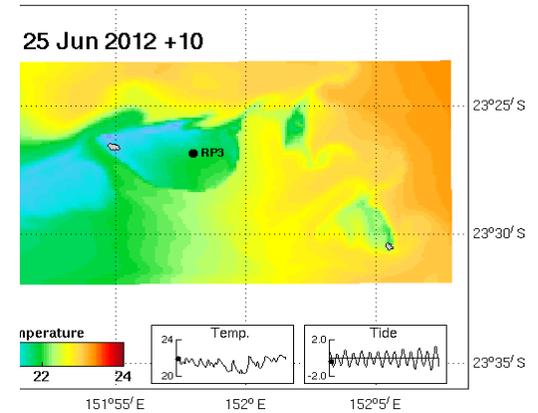
## Data assembly

Glider and model comparison: temperature profiles

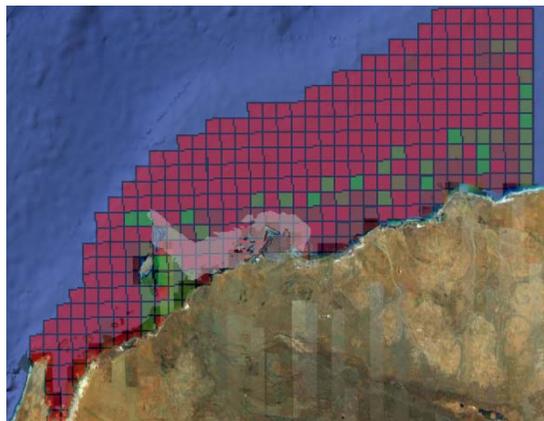


## Physical models

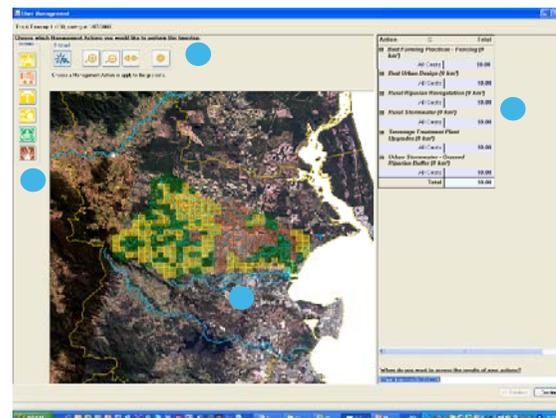
Tide and Temperature



## Data access

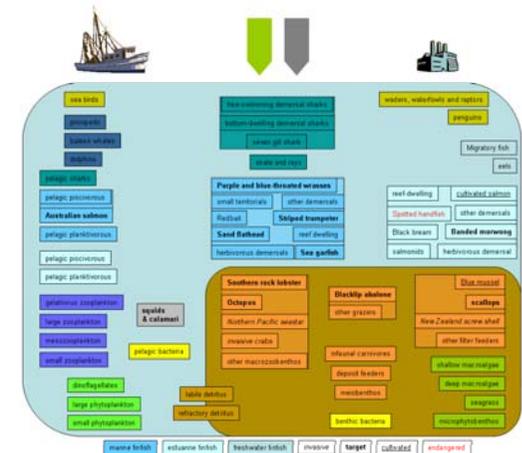


## Management strategy



## Ecosystem models

Last updated: 01/06/2012 16:27:00



# Australia's marine industries

Marine industry value		\$44 billion
Offshore oil & gas exploration and extraction	\$24.2bn	
Marine tourism & recreational activities	\$11.1bn	
Ship building, repair, maintenance services & infrastructure	\$6.4bn	
Fishing & aquaculture	\$2.3bn	

# Energy security

- **Developing Australia's critical energy resources: 95% of Australia's petroleum from offshore sedimentary basins**
- **Accelerating Australia's clean energy transformation**

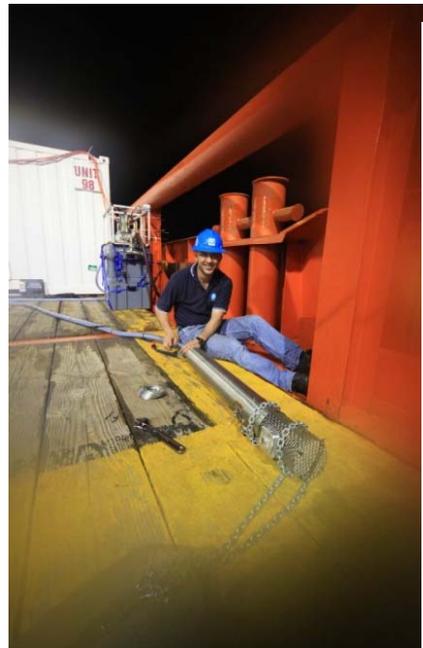
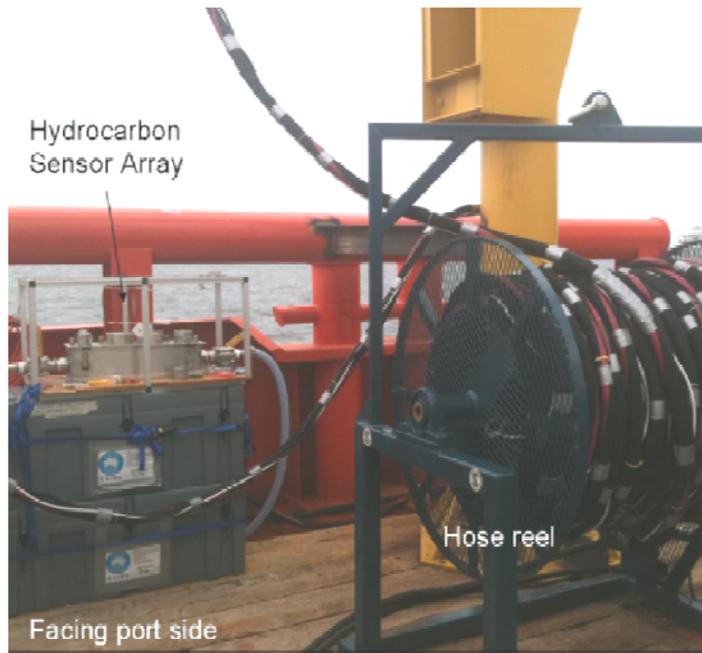


# 10 fold increase in shipping traffic by 2030

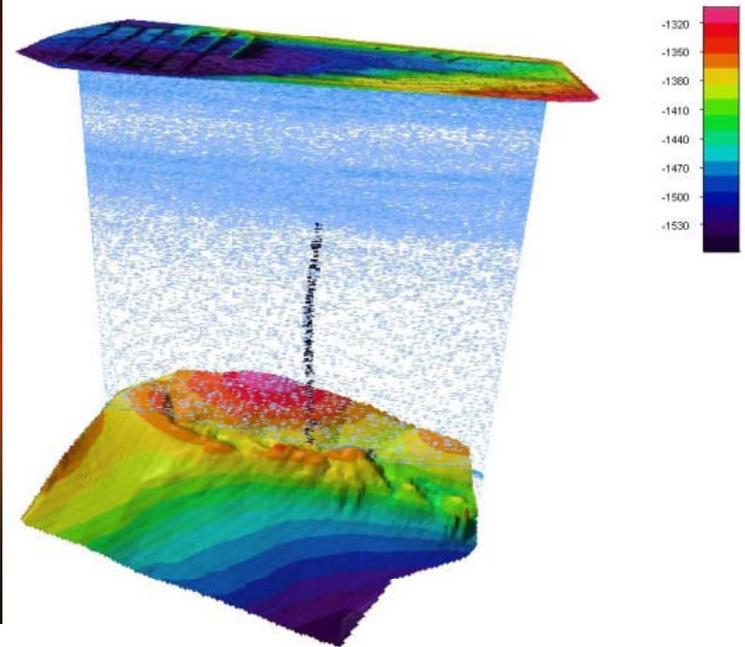


# Increased oil rigs and shipping will increase the risks of oil spills – we need to be prepared

## Detecting and tracking hydrocarbons



## Modelling dispersion



# Food security

- Rebuild Australia's wild harvest fisheries to increase their value and profitability as stocks recover
- Enable the Australian industry to achieve its full potential for sustainable growth and respond to global demand for seafood



# Advancing from single species fisheries models to whole of system models and management

## SINGLE SYSTEM

### MANAGEMENT



### INDUSTRY



### TARGET SPECIES



### MANAGEMENT



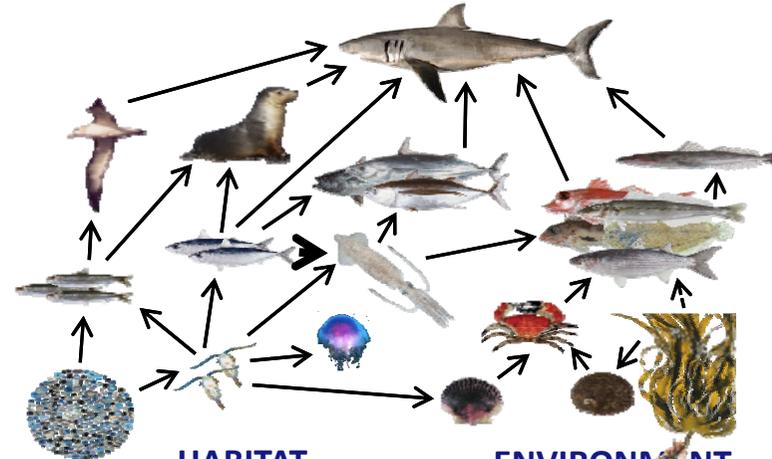
### INDUSTRY



### SOCIOECONOMIC



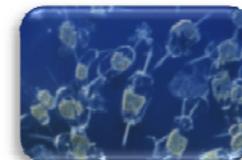
### FOOD WEB



### HABITAT

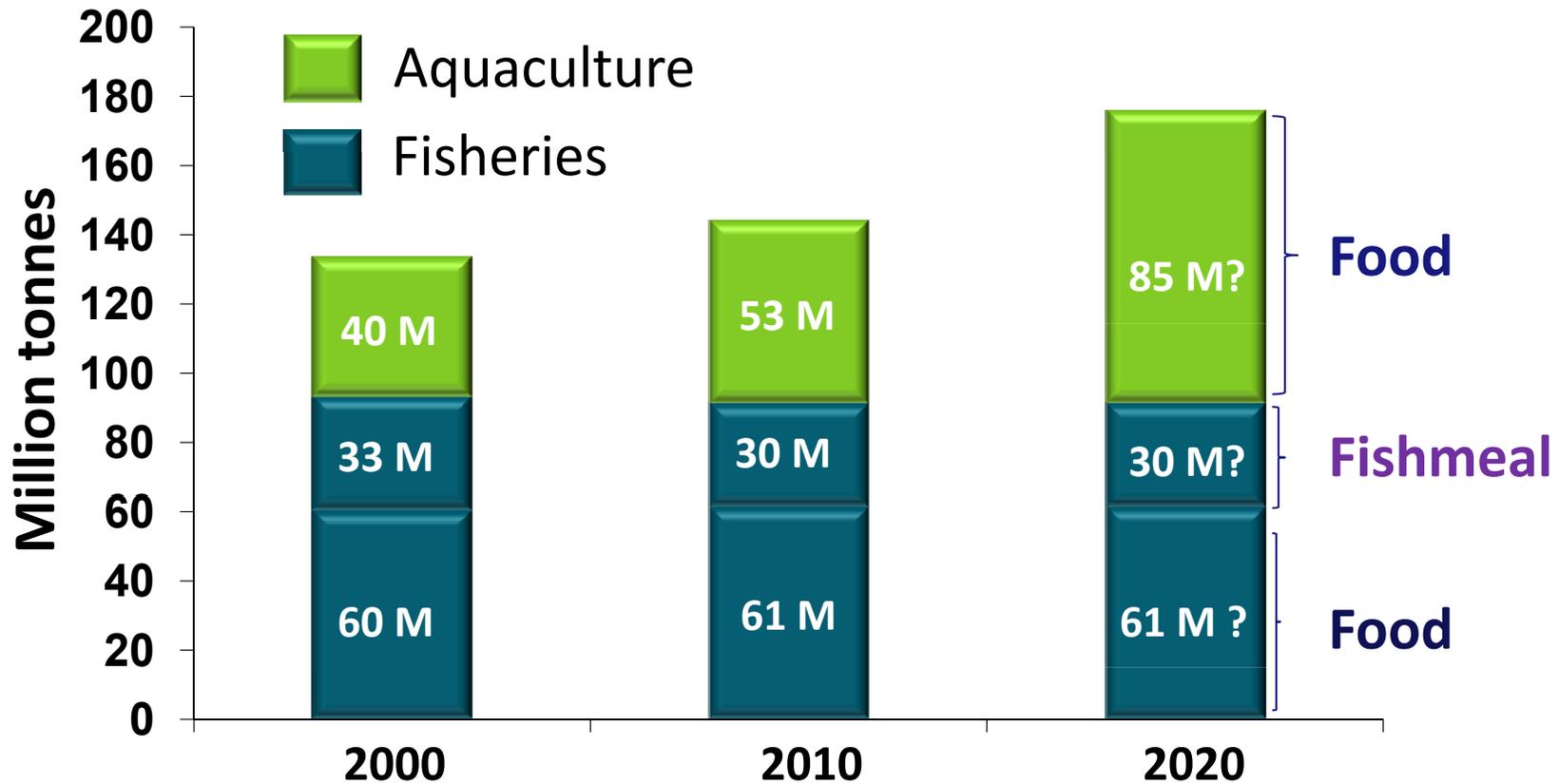


### ENVIRONMENT

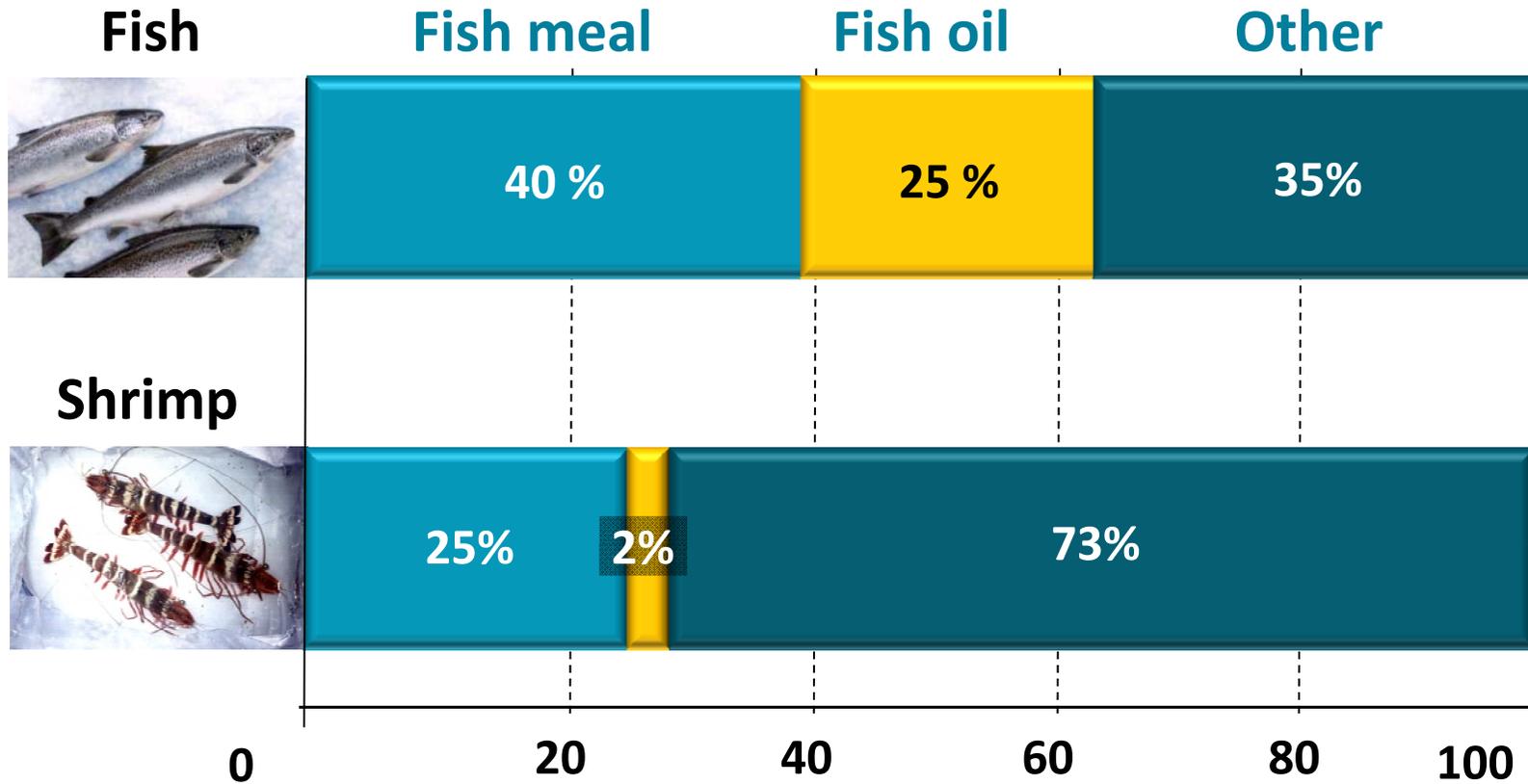


# Global seafood production

1 in every 2 fish eaten is farmed

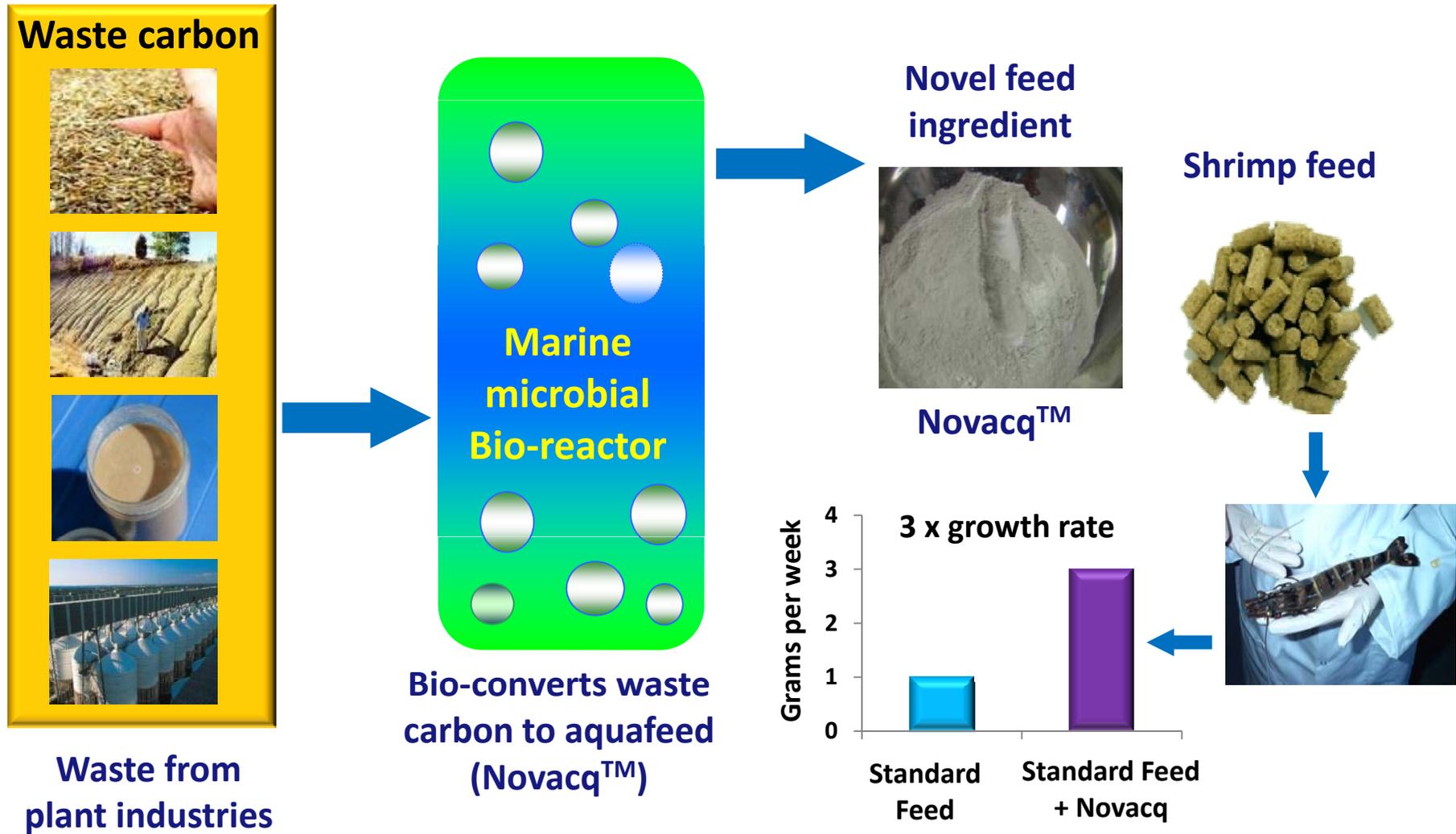


# Current reliance on ocean sources of fishmeal and oil

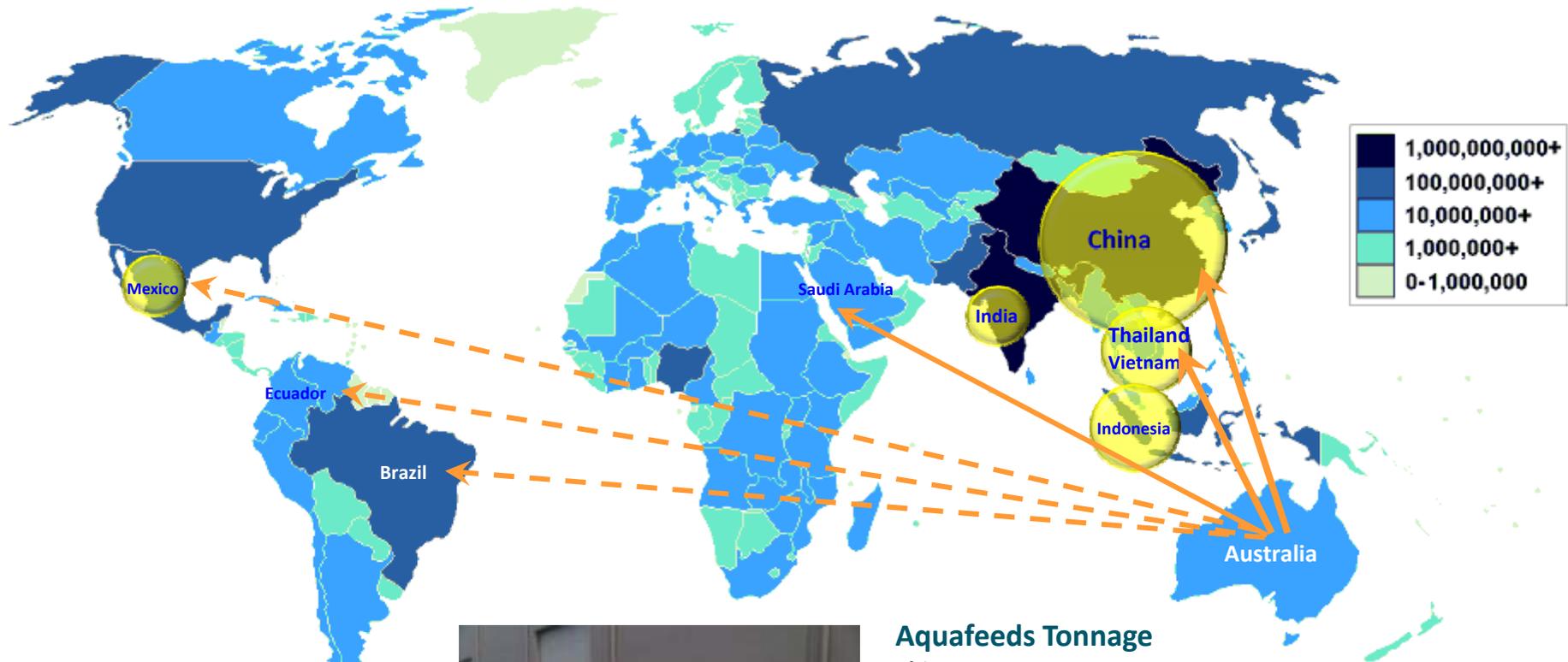


Source FAO & A. Tacon

# CSIRO technology converts waste carbon to aquafeed



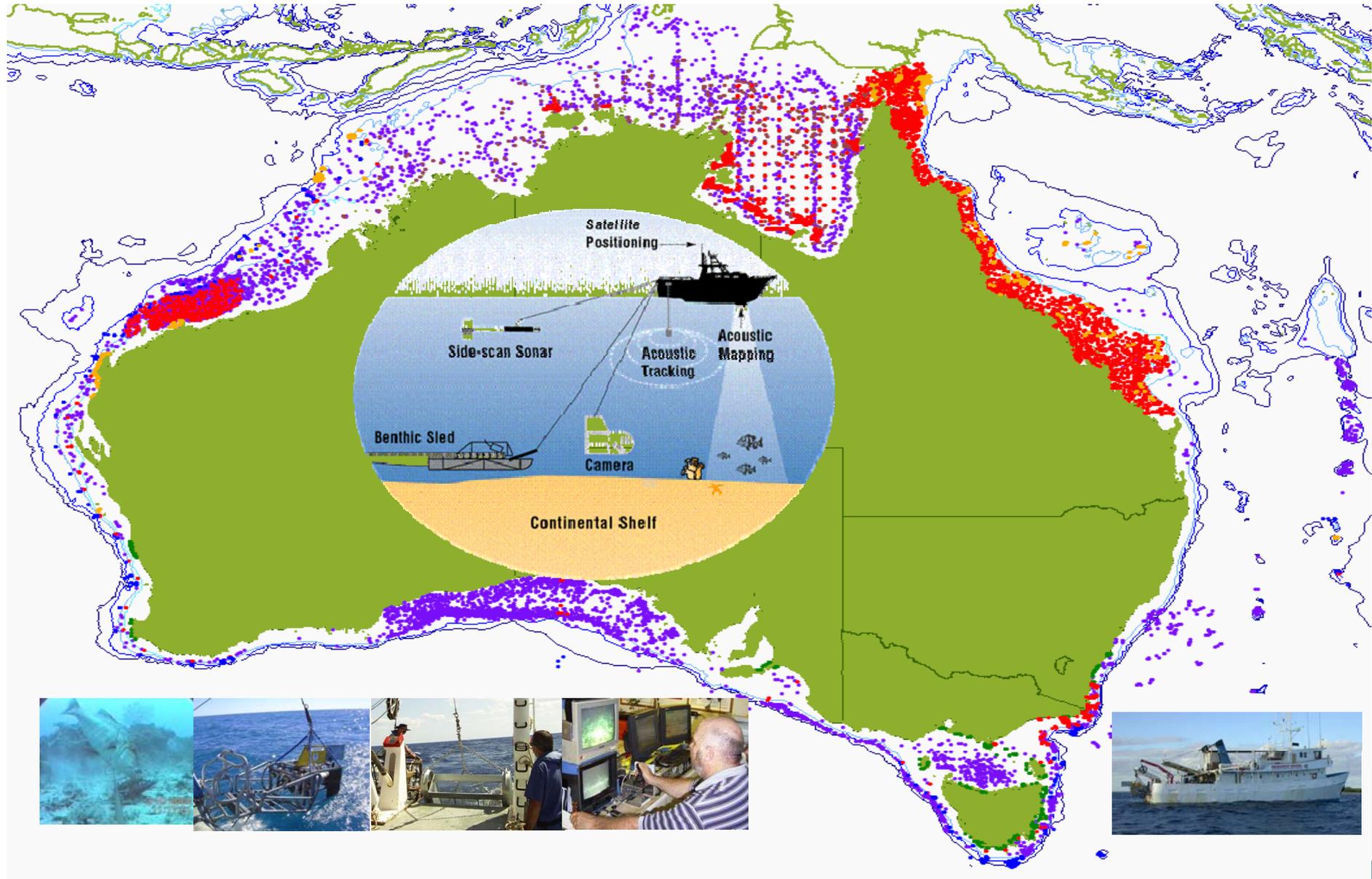
# Global commercialisation of Novacq™



## Aquafeeds Tonnage

China	1,985,600
Thailand	800,000
Vietnam	720,000
Indonesia	480,000
Mexico	200,000
India	197,880
Ecuador	136,000
Brazil	73,600
Australia	6,400

# Use of multiple sampling devices to detect and protect marine biodiversity hot spots in the APEC region



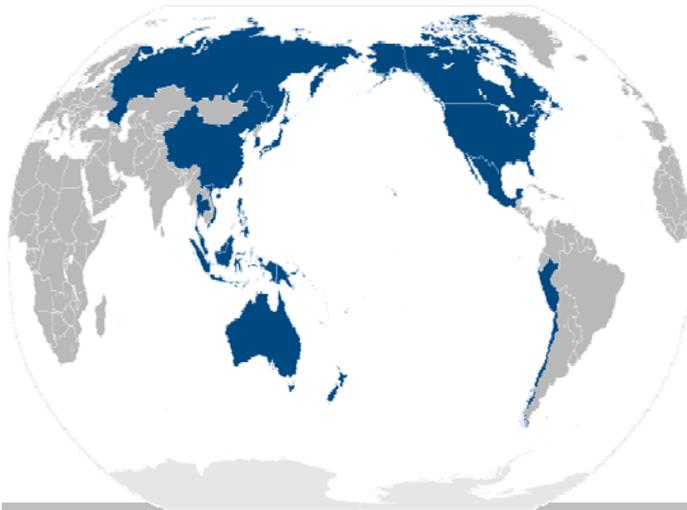
**For example >7,000 taxa identified, many new species found in Australian waters**



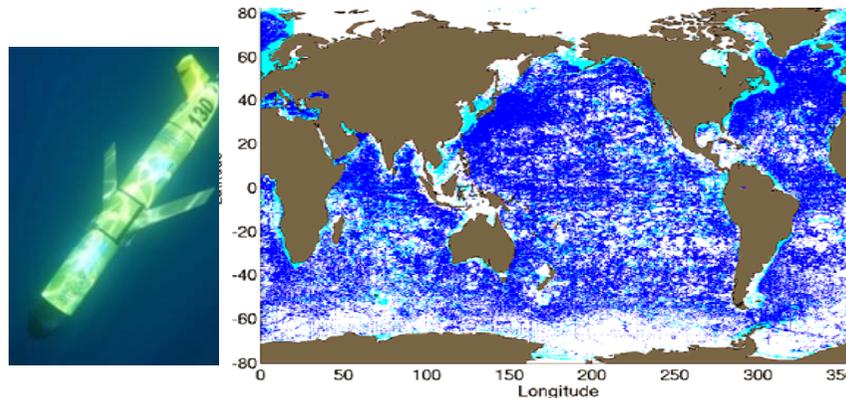
# The critical role of marine microbes

- Marine microbial biomass is greater than biomass of all plants and animals
- Microbial carbon biomass = 50% of the carbon in the atmosphere
- Vital to the global carbon cycle
- Need to optimise collaborative effort to understand marine microbial communities and their functional roles

## Filling in the gaps

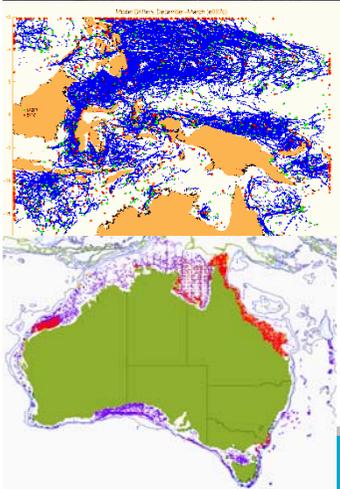


## Improving our understanding of microbial oceanography



# Optimise APEC collaboration to meet the grand challenges

1. Sovereignty, security, natural hazards
2. Dealing with climate change
3. Energy security
4. Food security
5. Biodiversity conservation and ecosystem health
6. Optimal resource allocation



## Leveraging APEC's Connectivity Agenda to Promote Energy Market Integration

Recognizing the importance of cross-border trade and investment in the energy sector, at the APEC Business Advisory Council meeting in Singapore, ABAC Indonesia presented a paper that outlined some of the benefits of energy market integration (EMI) and some areas where APEC's organizational strengths and expertise could be leveraged to overcome barriers to EMI efforts. In particular ABAC Indonesia is looking at how the concept of "connectivity," a theme for APEC 2013, can be applied to promote EMI among APEC economies. To identify the broadest range of means for APEC to contribute to this effort we have considered a wide scope of issues that impact cross border trade in energy markets in the development of this proposal.

### **Benefits of EMI**

A number of key figures illustrate the need for further energy market integration among APEC economies. For example, according to the International Energy Agency's World Energy Outlook 2012 report, Asia is expected to account for 90 per cent of the Middle East's oil exports in future. EMI can help mitigate Asian economies exposure to significant risk of supply disruption due to overdependence on oil from this volatile region by facilitating energy supply and source diversity. EMI can also help economies reduce carbon emissions by increasing the role of gas in the energy mix. A study conducted by the Asia Pacific Energy Research Center (APEREC) found that the increased use of natural gas in place of coal, in what is called a "high gas scenario" could yield a 22% reduction in CO<sub>2</sub> emissions for APEC economies by 2035. Finally, EMI has been shown to yield overall economic benefits to economies. In a December 2011 study by the Economic Research Institute for ASEAN and East Asia (ERIA) researchers found that adopting an integrated and competitive natural gas market in the region, overall welfare of countries involved in natural gas trade in the region improves by 5.5%.

While not noted in the Singapore paper, it is important to note that APEC also has the potential to contribute to the facilitation of **transpacific energy trade**. The Pacific Economic Cooperation Council's (PECC) 2011 report entitled *Prospects for Transpacific Energy Trade* noted "the prospect of transpacific energy trade would be good news for Asia-Pacific regional integration, since it would lead to a more competitive energy market and more transparent pricing of energy products, likely resulting in a reduction in price differentials between Asia and North America."

In 2011, transpacific trade in oil, gas, and coal accounted for only 1.4 percent of global trade in those products. The work on EMI conducted under the auspices of the East Asia Summit (EAS) is highly valuable, however given the potential for transpacific energy trade to impact energy markets in Asia, there is clearly a need for EMI to be considered from an "APEC view" that incorporates markets on both sides of the Pacific Ocean.

The convening power of APEC is another strength that can be leveraged to promote cooperative efforts in support of EMI. The Conference on Clean, Renewable Energy, and Sustainability in APEC Region being held in Bali prior to APEC Leaders' Week exemplifies APEC's ability to bring together senior-level government officials and stakeholders in the region to develop strategies to address critical issues facing economies in the region.

In summary, the paper presented in Singapore the following **benefits of EMI** were identified:

- *Diversification of energy sources*
- *Facilitating trade and optimizing resources allocation across the region*
- *Improving energy intensity in each economy*
- *Protecting the environment and reducing carbon emissions*

### **Barriers to EMI and Potential Roles for APEC**

The paper also highlighted some of the key barriers to EMI and potential roles for APEC in addressing these barriers.

- *Identifying how preferential trade agreements, particularly those under negotiation, and trade liberalization initiatives can be leveraged to promote energy market integration*
- *Leveraging APEC effectiveness in addressing trade facilitation issues*
- *Identifying effective approaches to project financing, particularly for cross-border projects*
- *Improving energy-related infrastructure and promote the adoption of regulations that promote infrastructure investment*
- *Monitoring implementation of APEC political commitments related to energy*
- *Addressing capacity building and technical cooperation needs particularly in emerging fields such as clean energy*

### **Conclusion and recommendations**

There is extensive overlap between the breadth of issues related to energy market integration and the issues being addressed by various APEC groups. It is not clear, however, that these efforts are organized in a cohesive manner or are being undertaken from the perspective of energy market integration. Given the limited resources of ABAC and APEC, we propose that instead of creating new work streams, APEC create an energy connectivity framework that facilitates the implementation of existing commitments and ensures that APEC work streams are considered from an EMI perspective. The energy connectivity framework should be broad enough to be applicable to conventional and alternative energy sources and should address

barriers throughout the energy supply chain (from upstream to downstream). It would also be beneficial for APEC to develop a mechanism for tracking progress towards EMI to determine where efforts should be focused and where capacity building is needed most. This could be similar to the Regional Economic Integration Dashboard that was developed by the PSU in response to ABAC's recommendations.

To promote capacity building and technical cooperation between economies, particularly in the area of clean, renewable energy, APEC should leverage its people to people connectivity agenda. This will facilitate the development of skilled human resources as well as the deployment of clean energy projects.

We feel that ABAC should refrain from being overly prescriptive in its recommendations, however it seems that APEC's Energy Working Group would be the most appropriate forum to lead a collective APEC effort on EMI. The development and implementation of an energy connectivity framework would be well-served by deeper engagement between the Energy Working Group and APEC groups working on issues relevant to EMI.

Based on the barriers and roles for APEC identified in the paper presented in Singapore, ABAC Indonesia has identified a number of work streams that could be part of the framework. It is likely that there are other areas that could be incorporated into the framework. In this regard, ABAC Indonesia looks forward to receiving input from ABAC members on other work streams that should be included in the framework. Work streams identified so far include the following:

*Identifying how preferential trade agreements, particularly those under negotiation, and trade liberalization initiatives can be leveraged to promote energy market integration*

- Implement agreed to tariff reductions on the APEC Environmental Goods list
- Address non-tariff barriers or behind the border barriers to energy trade in preferential trade agreements
- Promote overall reduction in tariffs and harmonization of import policies\*

*Leveraging APEC effectiveness in addressing trade facilitation issues*

- Create fast-track import processes for energy technology\*
- Promote regulatory coherence for energy related trade
- Harmonization of environmental specifications for refined products\*

*Identifying effective approaches to project financing, particularly for cross-border projects*

- Leverage relevant APiP recommendations related to project financing

*Improving energy-related infrastructure and promote the adoption of regulations that promote infrastructure investment*

- Removing investment and other market barriers\*
- Leverage ABAC and APEC's investment related work, including the USC Marshall School Study and Investment Facilitation Action Plan (IFAP)

*Monitoring implementation of APEC political commitments related to energy*

- Leaders agreement to eliminate inefficient fossil fuel subsidies
- APEC goal to reduce APEC's aggregate energy intensity by 45 percent by 2035

*Implement and track the efficacy of capacity building programs to support implementation of the framework*

- Organization of capacity building programs such as the *Conference on Clean, Renewable Energy, and Sustainability in APEC Region* which will serve to promote cooperation among APEC economies

*\*from Strategic Framework for Energy Security: An Update*

### **Next steps**

ABAC Indonesia proposes that, upon endorsement of the ABAC, the above recommendations be incorporated in the 2013 ABAC Report to Leaders. Additionally, this proposal should be conveyed directly to the APEC Energy Working Group where much of the related work is taking place.

Document: SDWG 33-026  
Draft: **FIRST**  
Source: ABAC Indonesia  
Date: 24 June 2013  
Meeting: Kyoto, Japan

## Meeting Document Summary Sheet Template

<b>Document Title:</b> Leveraging APEC's Connectivity Agenda to Promote Energy Market Integration
<b>Purpose:</b> For consideration
<b>Issue:</b> Developing a framework to leverage existing APEC work streams to address energy market integration
<b>Background:</b> As Chair of APEC, the Indonesian government has made connectivity a priority issue for 2013. ABAC Indonesia proposes that ABAC develop recommendations on how APEC's connectivity agenda can be leveraged to promote connectivity in the energy sector, in the context of moving towards energy market integration. With energy an input into almost every good and service produced in the economy, the benefits of energy market integration would be substantial. In the absence of an APEC Energy Ministerial Meeting, ABAC should directly alert APEC Leaders to the potential benefits of energy market integration when they meet later this year.  This proposal discusses the benefits of improving energy market integration and the potential role that APEC can play in contributing to energy market integration in the Asia-Pacific region.
<b>Proposal /Recommendations:</b> <ul style="list-style-type: none"><li>• Develop a framework to consider relevant issues from EMI perspective instead of creating new work streams</li><li>• Develop a mechanism to track APEC economies' progress toward EMI</li><li>• Promote capacity building and technical cooperation in area of clean energy</li></ul>
<b>Decision Points:</b> <ul style="list-style-type: none"><li>• Endorse the recommendations outlined above.</li></ul>

## Leveraging APEC's Connectivity Agenda to Promote Energy Market Integration in the Asia-Pacific

ABAC Indonesia

### Benefits of EMI

- Diversification of energy sources
- Facilitating trade and optimizing resources allocation across the region
- Improving energy intensity in each economy
- Protecting the environment and reducing carbon emissions

## Potential Roles for APEC

- Identifying how preferential trade agreements, particularly those under negotiation, and trade liberalization initiatives can be leveraged to promote energy market integration
- Leveraging APEC effectiveness in addressing trade facilitation issues
- Identifying effective approaches to project financing, particularly for cross-border projects
- Improving energy-related infrastructure and promote the adoption of regulations that promote infrastructure investment
- Monitoring implementation of APEC political commitments related to energy
- Addressing capacity building and technical cooperation needs particularly in emerging fields such as clean energy

## Conclusions and Recommendations

- Many relevant work streams exist in APEC
- Develop a framework to consider relevant issues from EMI perspective instead of creating new work streams
- Develop a mechanism to track APEC economies' progress toward EMI
- Promote capacity building and technical cooperation in area of clean energy

# Next Steps