Pacific Blue Shipping Partnership

Initiative for the Sustainable Transformation of the Pacific Maritime Sector

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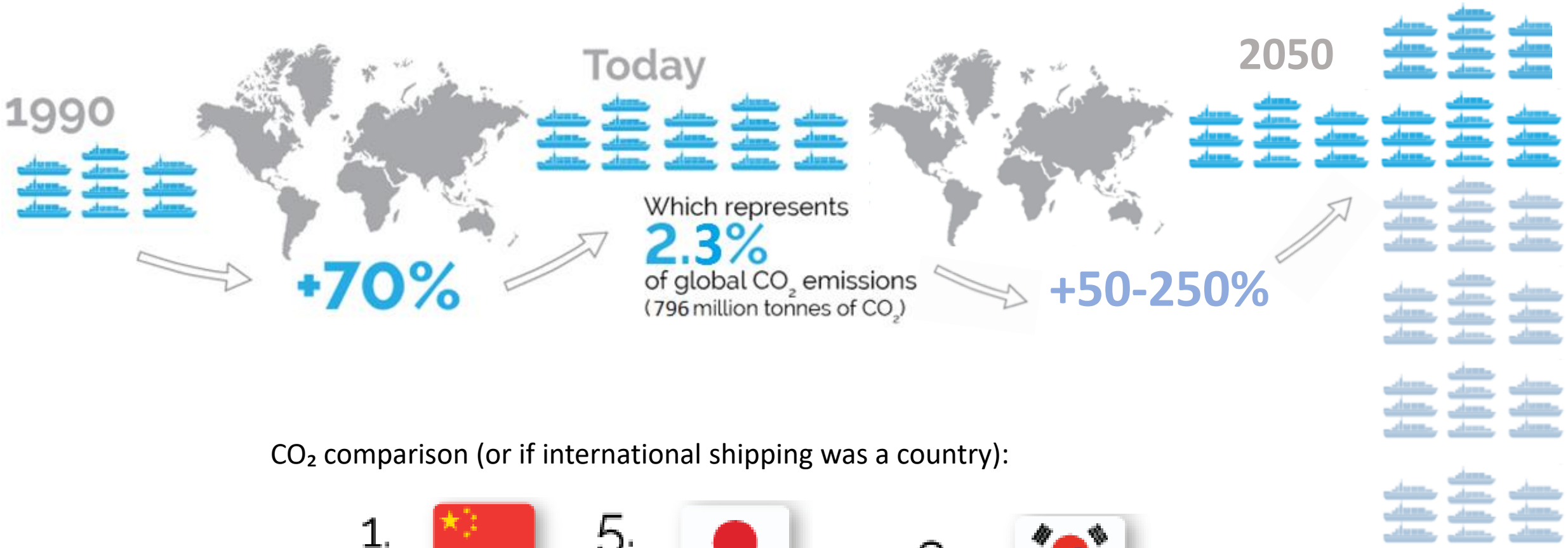
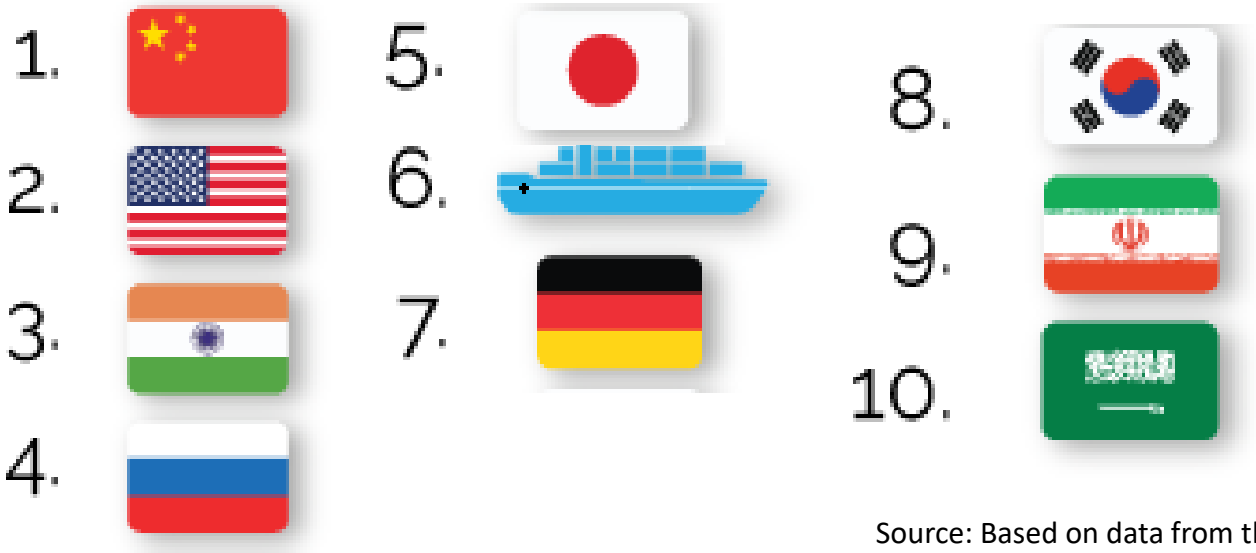
- Global shipping and change
- Pacific shipping currently
- Pacific vision and leadership for a whole system change
- Pacific Blue Shipping: The Solution
- Our questions to you

Shipping: A global industry undergoing radical change - driven by Pacific leadership



CO_2 comparison (or if international shipping was a country):



Source: Based on data from the Third IMO GHG Study

INTERNATIONAL MARITIME ORGANIZATION

RESOLUTION MEPC.304(72)
(adopted on 13 April 2018)

INITIAL IMO STRATEGY ON REDUCTION OF GHG EMISSIONS FROM SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE

RECALLING Article 38(e) of the Convention on the International Maritime Organization (the Organization) concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution from ships,

ACKNOWLEDGING that work to address greenhouse gas (GHG) emissions from ships has been undertaken by the Organization continuously since 1997, in particular, through adopting global mandatory technical and operational energy efficiency measures for ships under MARPOL Annex VI,

ACKNOWLEDGING ALSO the decision of the thirtieth session of the Assembly in December 2017 that adopted for the Organization a strategic direction entitled "Respond to Climate Change",

RECALLING the United Nations 2030 Agenda for Sustainable Development,

1 ADOPTS the Initial IMO Strategy on reduction of GHG emissions from ships (hereinafter the Initial Strategy) as set out in the annex to the present resolution;

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Science & Environment

Global shipping in 'historic' climate deal

David Shukman
Science editor

13 April 2018 | Share

FINANCIAL TIMES

Marshall Islands calls for curbs on maritime carbon emissions

Shipping is crucial to the country but CO2 presents an 'existential threat'

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PACIFIC

Pacific at forefront of shipping industry emissions reductions

From **Dateline Pacific**, 3:05 pm on 16 April 2018 | Share this

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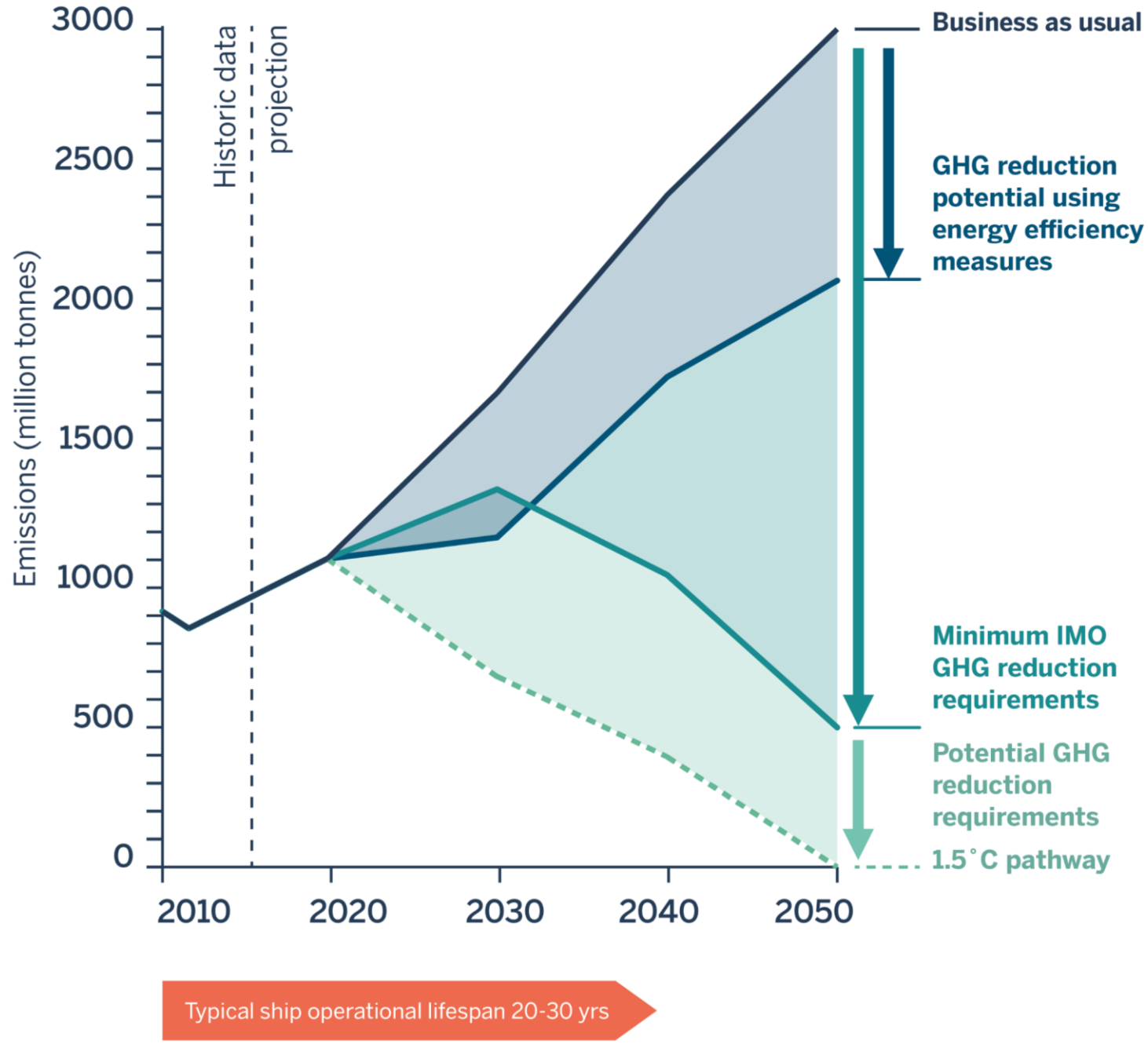
Pacific islanders: Shipping must comply with Paris climate goals

Published on 03/07/2017, 11:26am

Comment: Representatives of four Pacific island nations join today at the IMO in London to ask the shipping industry to do its part to cut carbon emissions


3000
2500
2000
1500
1000
500
0
Emissions (million tonnes)
Historic data
projection
2010
2020
2030
2040
2050
Business as usual
GHG reduction potential using energy efficiency measures
Minimum IMO GHG reduction requirements
Potential GHG reduction requirements
1.5˚C pathway
Typical ship operational lifespan 20-30 yrs

Globally, shipping will rapidly move away from using fossil fuel

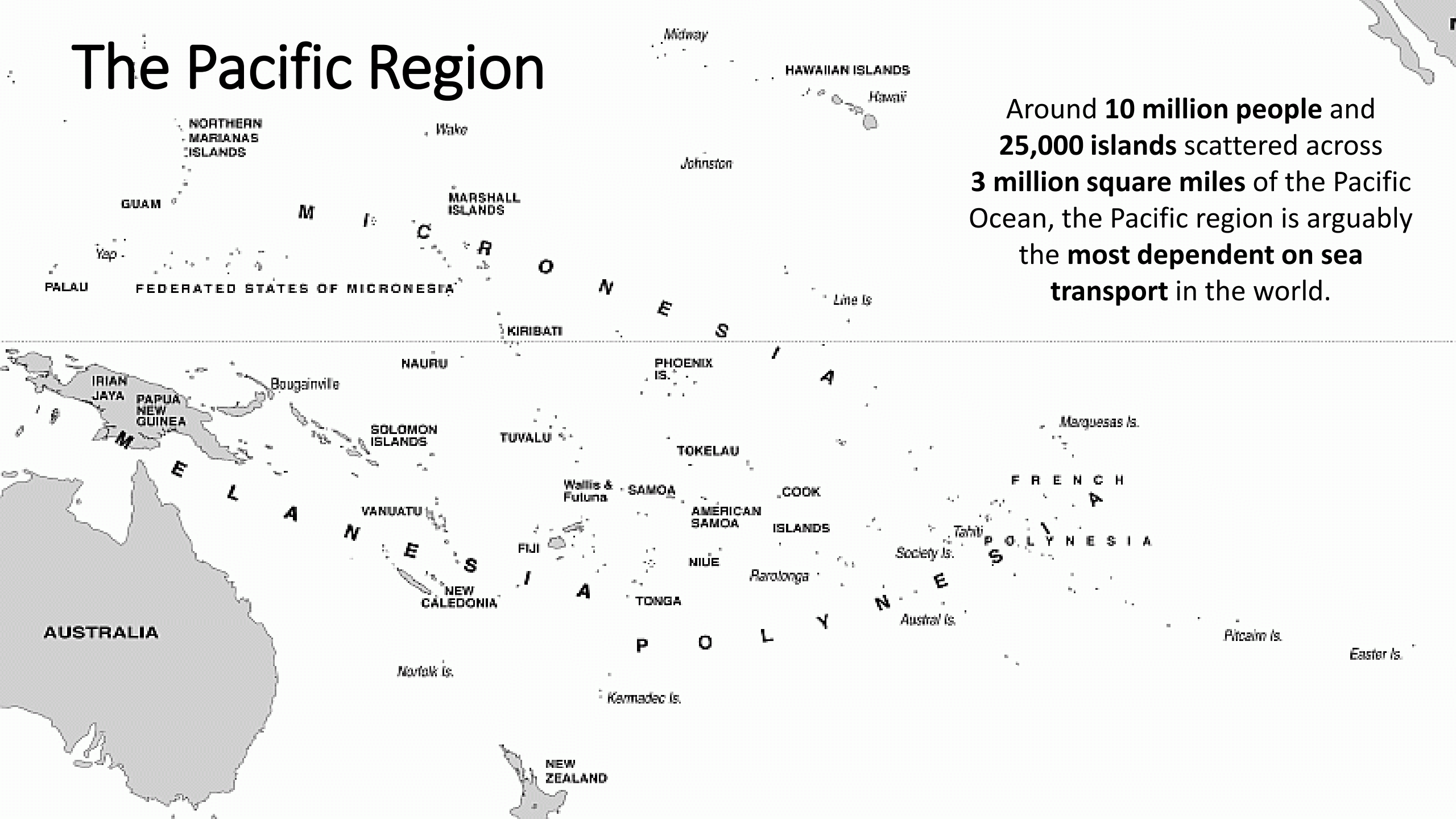
Different solutions suit different vessel types based on size, power and range requirements.

Short-sea or domestic shipping suitable for electrification
Relatively small tonnage and limited range requirements, including small cargo ships and tankers, barges, ferries.

Deep-sea shipping requiring electro-fuels
Large tonnage and considerable range requirements, including large container ships, bulk cargo and gas carriers, larger tankers, cruise ships, RoRo ferries, etc.

Shipping in the Pacific:
Region and Country case-studies

The Pacific Region



Around **10 million people** and **25,000 islands** scattered across **3 million square miles** of the Pacific Ocean, the Pacific region is arguably the **most dependent on sea transport** in the world.

Pacific Island Countries' Shipping Challenges

There are various compounding factors which affect Pacific SIDS, making sustainable, cost-viable sea transport particularly challenging, including:

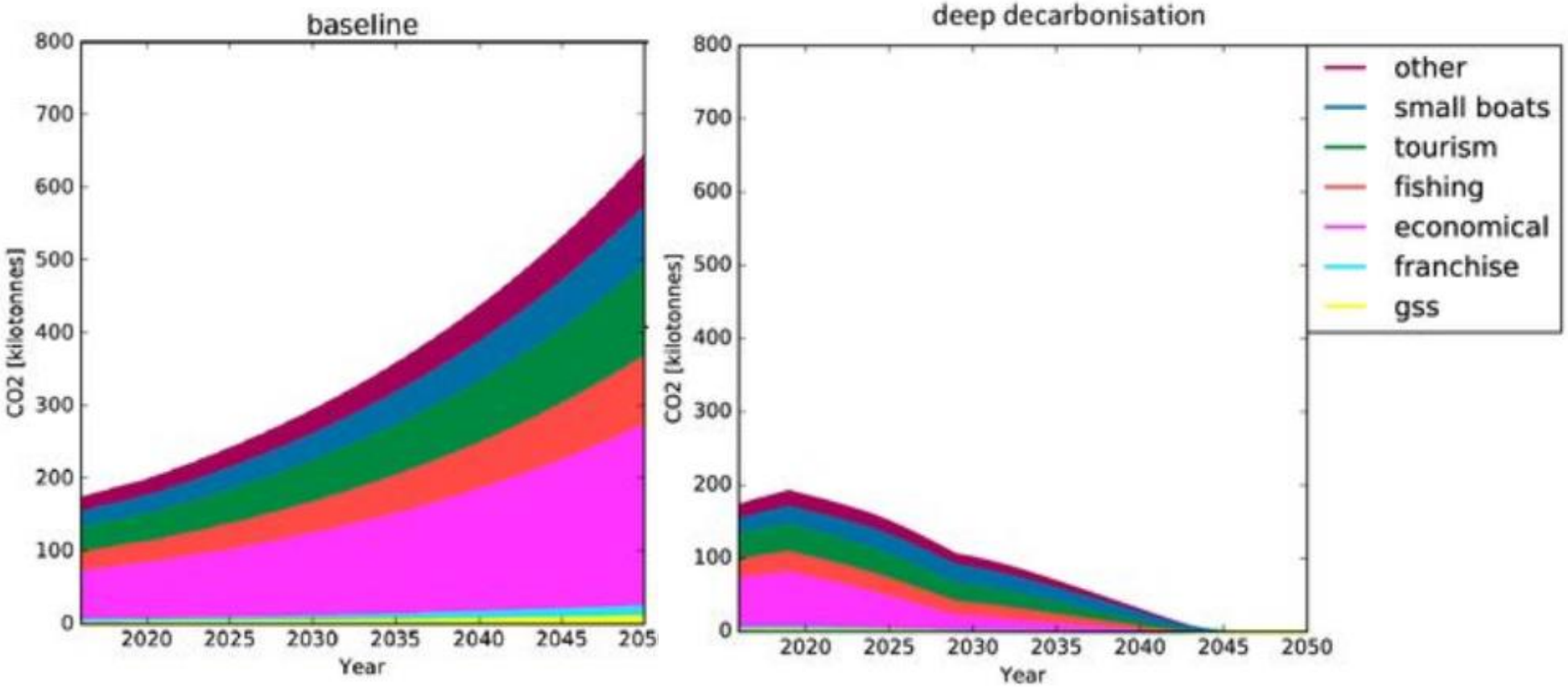
- minute narrow economies with high imbalance of import/export loadings
- extreme dependency on imported fossil fuels
- often long distances and small loads (all PICs except PNG are net importers)
- lack of adequate shore-side infrastructure
- high risk environments (e.g. tropical cyclone prone, reefs)
- narrow/constrained channels and passages, often poor navigational markers/aids
- lack of commercial shipping service providers willing to service "uneconomic" routes
- focus of existing aid/development initiatives on the shore-side facilities and not on the vessels themselves (which is usually seen as the preserve of the private sector)
- many economies too small to justify private sector investment

Shipping in Fiji

906,000 pop
GDP USD5.1b
GDP per capita USD5,400
330 islands/110 inhabited
Land 18,270 km^2
Sea area 194,000 sq km

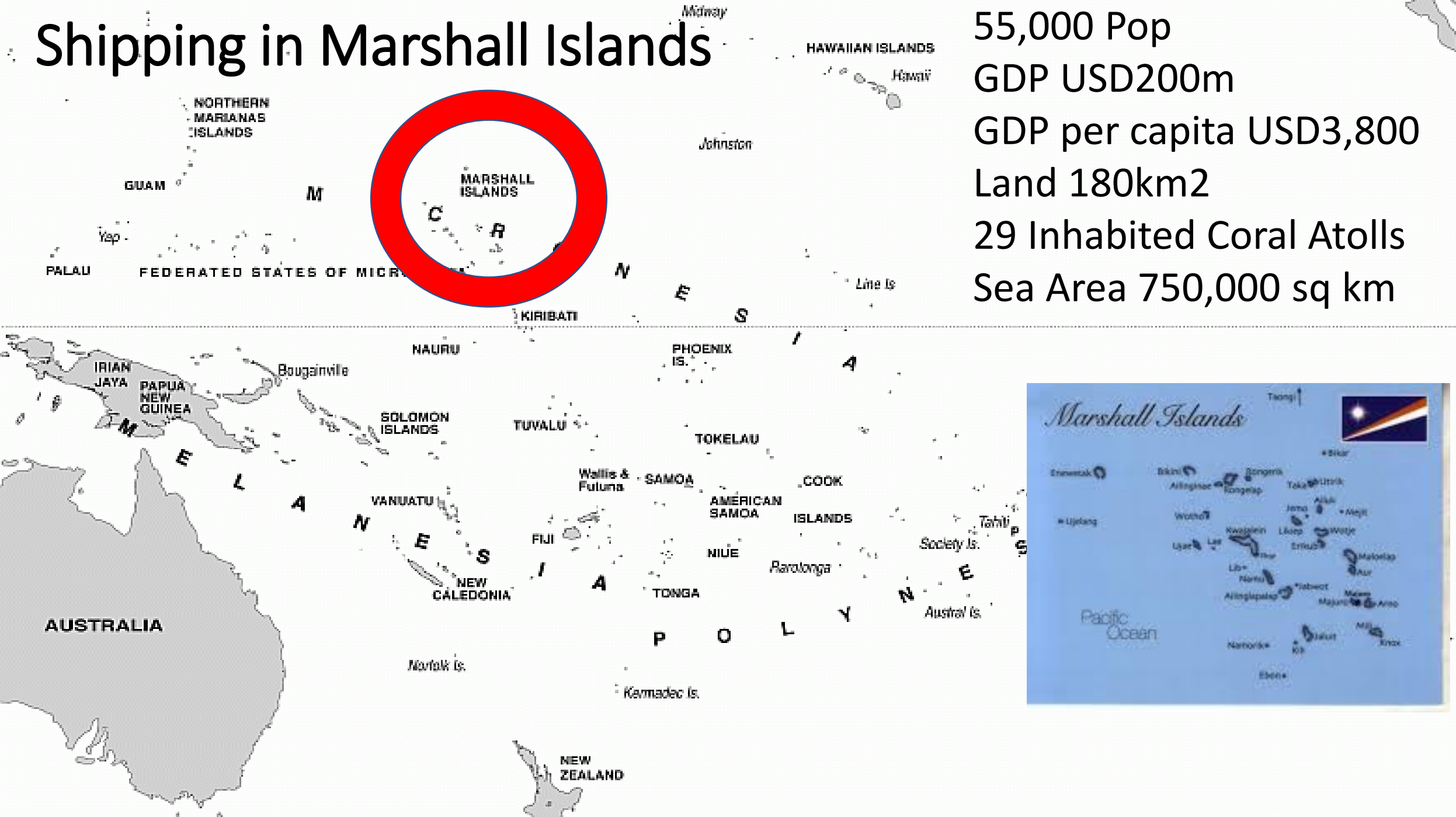
Shipping in Fiji

- Fiji's fleet comprises small vessels of less than 15m used as village punts to inter-island vessels of up to 5,000 ton.
- CO2 emissions from Fiji's domestic shipping in 2016: 174kt.
- Under a BAU scenario, emissions are modelled to increase to over 600kt by 2050, but could reduce instead.

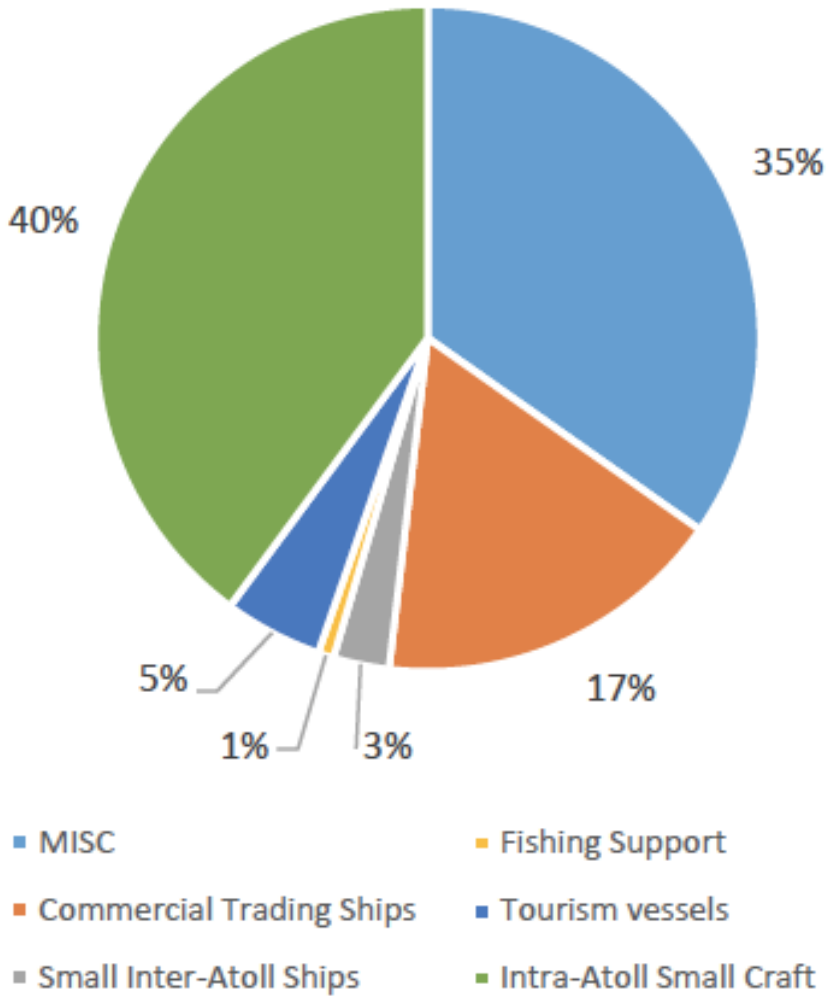


Shipping in Marshall Islands

55,000 Pop
GDP USD200m
GDP per capita USD3,800
Land 180km2
29 Inhabited Coral Atolls
Sea Area 750,000 sq km



Proportions of CO2 emissions – All domestic commercial ships, FY2017

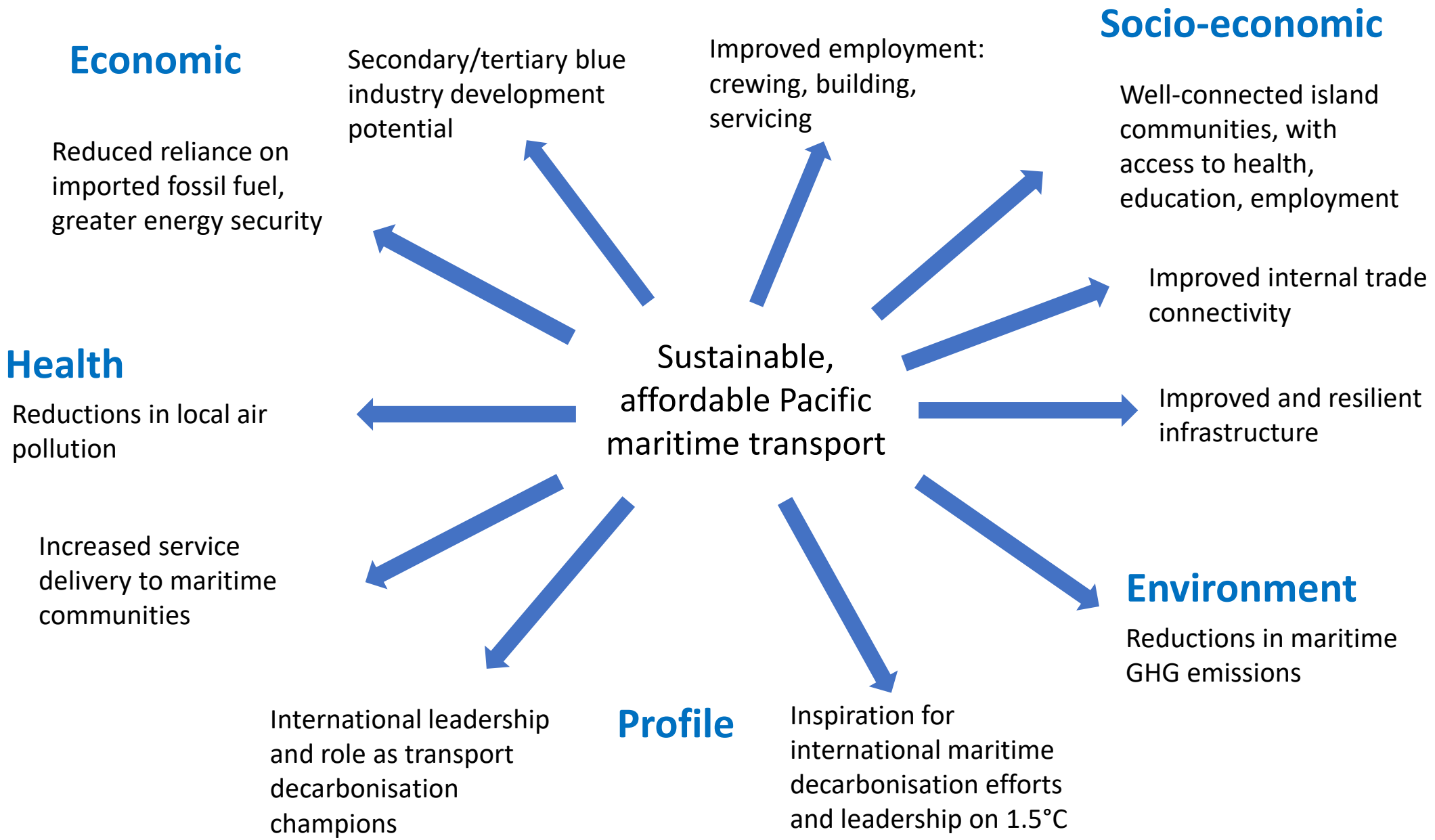


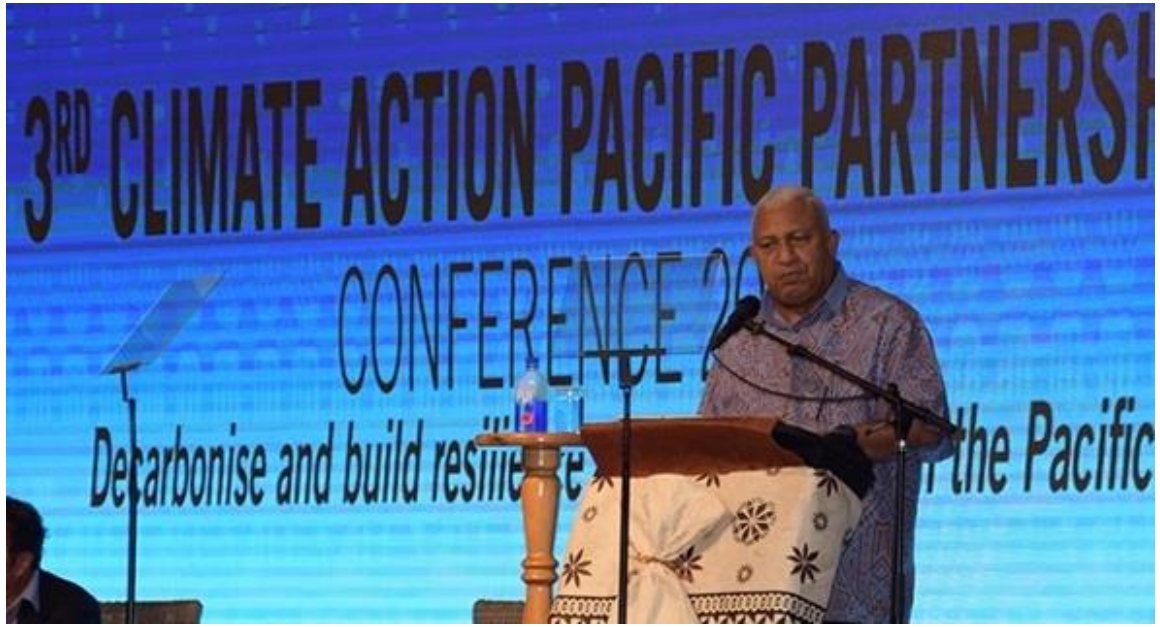
All domestic commercial shipping fuel consumption & CO2 Emissions, FY2017 – breakdown by activity

Shipping activity	Distance pa (nm)	Consumption (litres pa)	CO2 emissions (t CO2-e)
MISC	49,535	989,074	2,648
Commercial Trading Ships	29,740	486,719	1,303
Small Inter-Atoll Ships	26,721	77,452	207
Fishing Support	6,678	21,682	58
Tourism vessels	-	136,260	365
Intra-Atoll Small Craft		1,277,000	3,038
Grand Total	**112,674**	**2,988,188**	**7,619**

Shipping in the Pacific:
Vision and leadership for change

Vision and opportunities





"Fiji, with Marshall Islands, Samoa, Vanuatu, Solomon Islands and Tuvalu, have agreed to work together to reduce fossil fuel use in our marine transportation by up to 40% by 2030 and 100% by 2050.

This demands a transformation of our maritime sectors which will require new kinds of financial partnerships with bilateral and multilateral assistance and, potentially, a regional blue shipping bond. We hope to be able to announce this partnership at the UNSG summit."

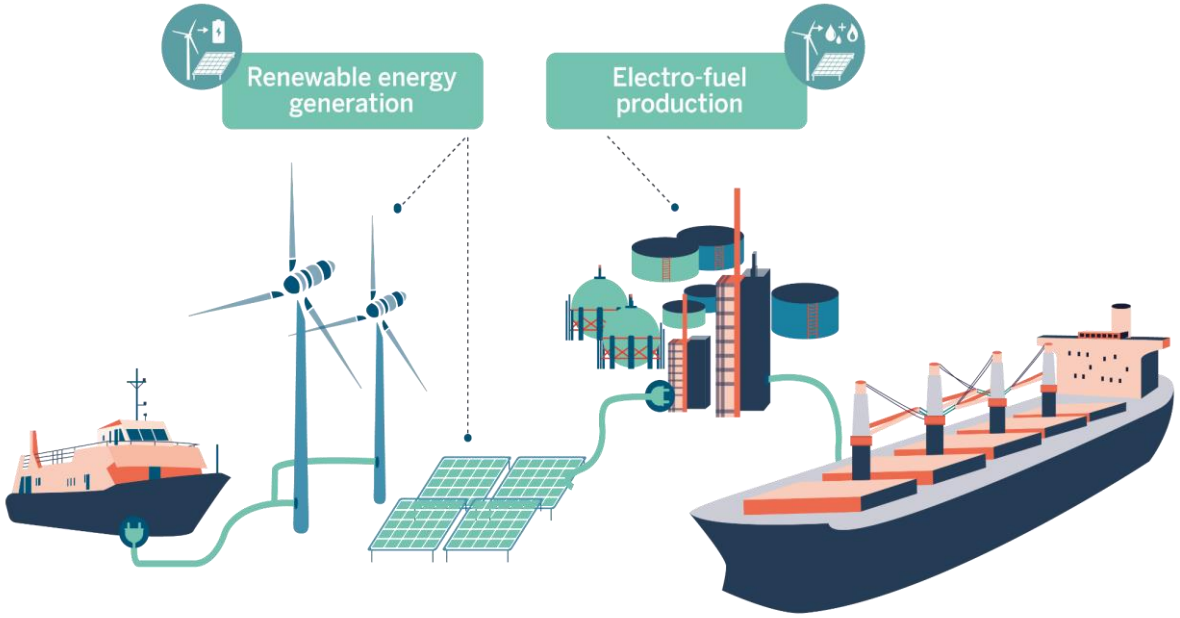
Shipping in the Pacific: The Solution

Project summary

- Develop green, appropriate, affordable and resilient domestic shipping (maximising local enterprise opportunities and economic multiplier effects)
- Country-driven: Fiji, RMI, Samoa, Vanuatu, Solomon Islands, Tuvalu (discussions with other regional countries ongoing)
- Blended finance of ~US$500m over 10 years: 2020–2030
- Mitigation: reduce emissions by 40% by 2030 and 100% by 2050
- Adaptation: Resilient and affordable shipping, maritime infrastructure investments, investments in supporting skills, education and enterprise

Potential Pacific options for moving shipping to non-fossil fuels

- Battery electric (including battery/wind hybrids)
  - Only for short-range
  - Needs green grid
- Electro-fuels (possibly ammonia or methanol)
  - Imported
  - Indigenous (needs green grid)
- Biofuels
  - Imported
  - Indigenous



Technology roadmap (preliminary)

- **Proof of concept phase (5 years):** Retrofit for efficient combustion, new vessel purchase, port enhancement, design and testing of regionally appropriate low-carbon options (e.g. sail + electric propulsion).
- **Pilot phase (5 years):** Progressive deployment of low-carbon options, informed by international experience but focusing on unique local needs and wider socio-economic context.
- **Critical holistic factors:** 10-year programme of skills, education and capacity building, policy reform

Shipping in the Pacific:
The Solution (business plan)

Sea transport infrastructure development and deployment	$100m (grants + loans)
• proof of concept phase (5 years) and pilot project phase (5 years) with a holistic ‘whole of sector’ focus • coordinated portfolio of country-driven projects aligned with national priorities	

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• locally-relevant research and technology development • development and delivery of education, training and implementation programmes • creation of opportunities for women and marginalised groups	

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• Review, co-development and implementation of policy frameworks for sustainable and low-carbon sea transport	

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Secretariat Function including staffing, training, and input from international technical support group	$20m (grants)

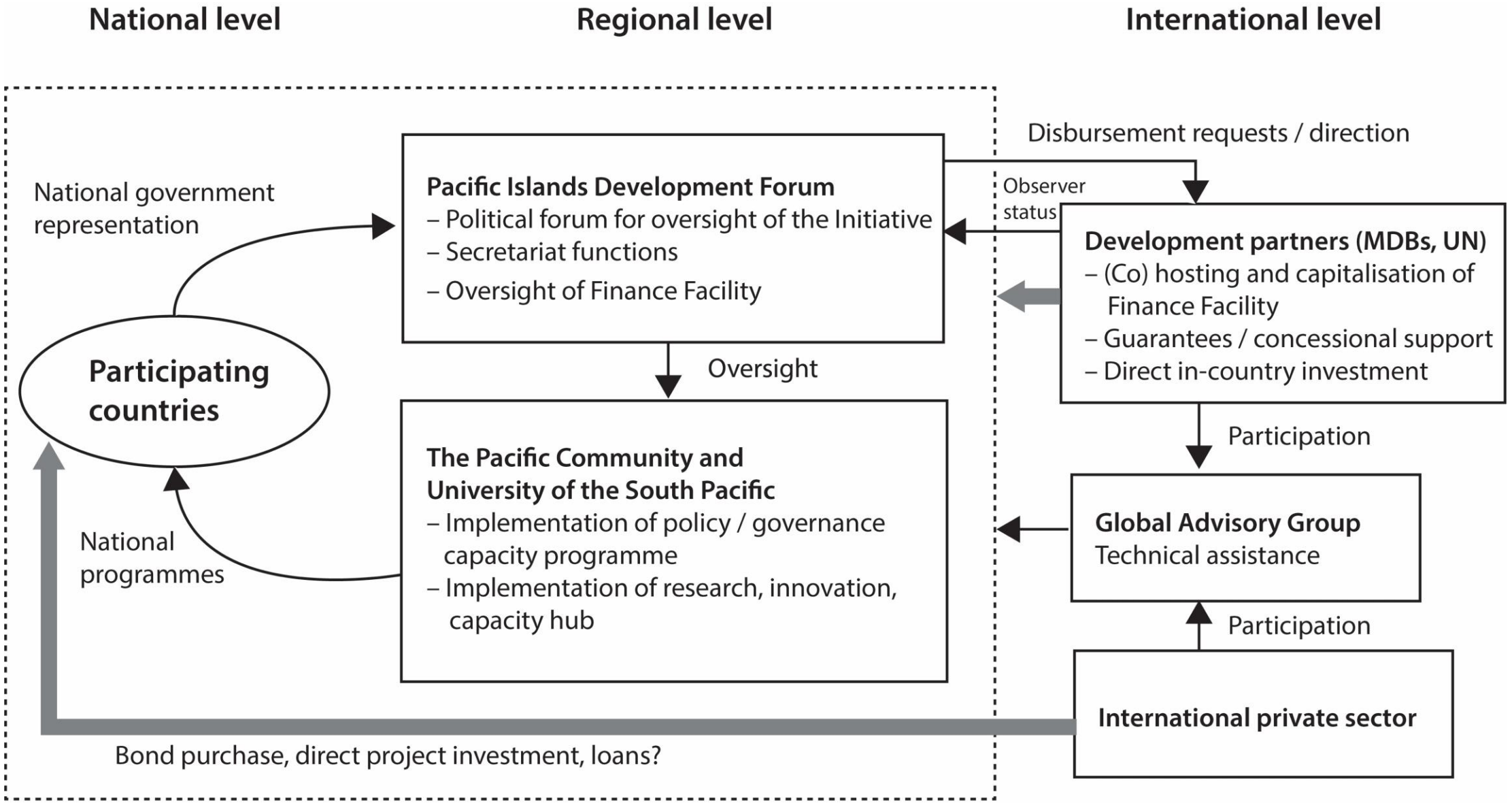
Anticipated sources of finance

Blended Finance	Modality	Target	Leads and/or sources	Activity
Bilateral	Grant	$50-100m	• Norway • UK • EC • New Zealand	R&D Pilots Policy Secretariat
Blue Bond	Loan	$50-100m	• Fiji	Public/Private sectors
MDBs and bilateral	Loan	$250m	• ADB • WB • Australia	Private sector Finance facility
GCF	Grant	$100-150m	• RMI with ADB/WB? • Pacific Community (SPC) • Secretariat of the Pacific Regional Environment Programme (SPREP)	R&D Heritage Pilots Secretariat
Private Sector	PPP	$25 -50m	• SWIRE	R&D Pilots

Pathway to scale: 2020–2030

Year	Cumulative investment	Specific actions
2020	50+ million	**Catalytic donor investment** focusing on: • Secretariat set up • Policy and governance capacity building • Preparatory analysis: modelling of techno-economic pathways, national needs assessment and plans, design of financial structures and models. • Research and Education blueprint design and initiation
2021	200+ million	• **Blue bond** issue by Fijian Government and partners, focusing on: initial capitalization of the Finance Facility → investment in retrofit / purchase for Fijian fleet (multi-scale), return based predominantly on fuel savings and fuel efficiency. • **Donor investment and concessional loan** for other national programmes • **GCF projects** (research, proof of concept, pilots, capacity development, etc) commence
2024	300+ million	**Larger scale donor and concessional loan investment** focusing on: • further capitalization of Finance Facility for operation through national programmes, • Long term financial sustainability of R&D hub, Secretariat, and Policy review program; • Direct investment in capital-intensive infrastructure projects (ships, ports, supporting). All of above de-risked and informed by previous actions in early 2020s.
2027	400+ million	Phase out of donor investment, continuation and scaling of MDB loan modalities, scaling of private sector investment

Governance and institutional structure (under discussion)



Next steps

- **July 2019–2020:** Applications to donors/GCF for catalytic funds
- **September 2019:** Development and publication of agreed detailed concept note (the basis of inter-governmental agreement on details):
  - outline technology pathway
  - governance and institutional structures
  - financial models and pathways, etc.
- **December 2019:** Governance framework: formal intergovernmental agreements, assignment of responsibilities to existing regional institutions and fiduciary review / due diligence.

Our ask to you

Our key questions

- What should short term donor-supported activities now focus on to build the best evidence base for the first phases of non-donor finance (e.g. the Blue Bond)
  - Techno-economic data and assessment?
  - Policy review and design assessment?
  - Governance, institutional and fiduciary questions (formal readiness)?
  - Key factors relevant to ratings profile and criteria-compatibility of relevant finance?
- What are the best real-world examples of comparable initiatives: From energy sector? From other ocean sectors? Success stories of technology transition with wider local enterprise benefits, etc?

Vinaka vaka levu

Kommol tata