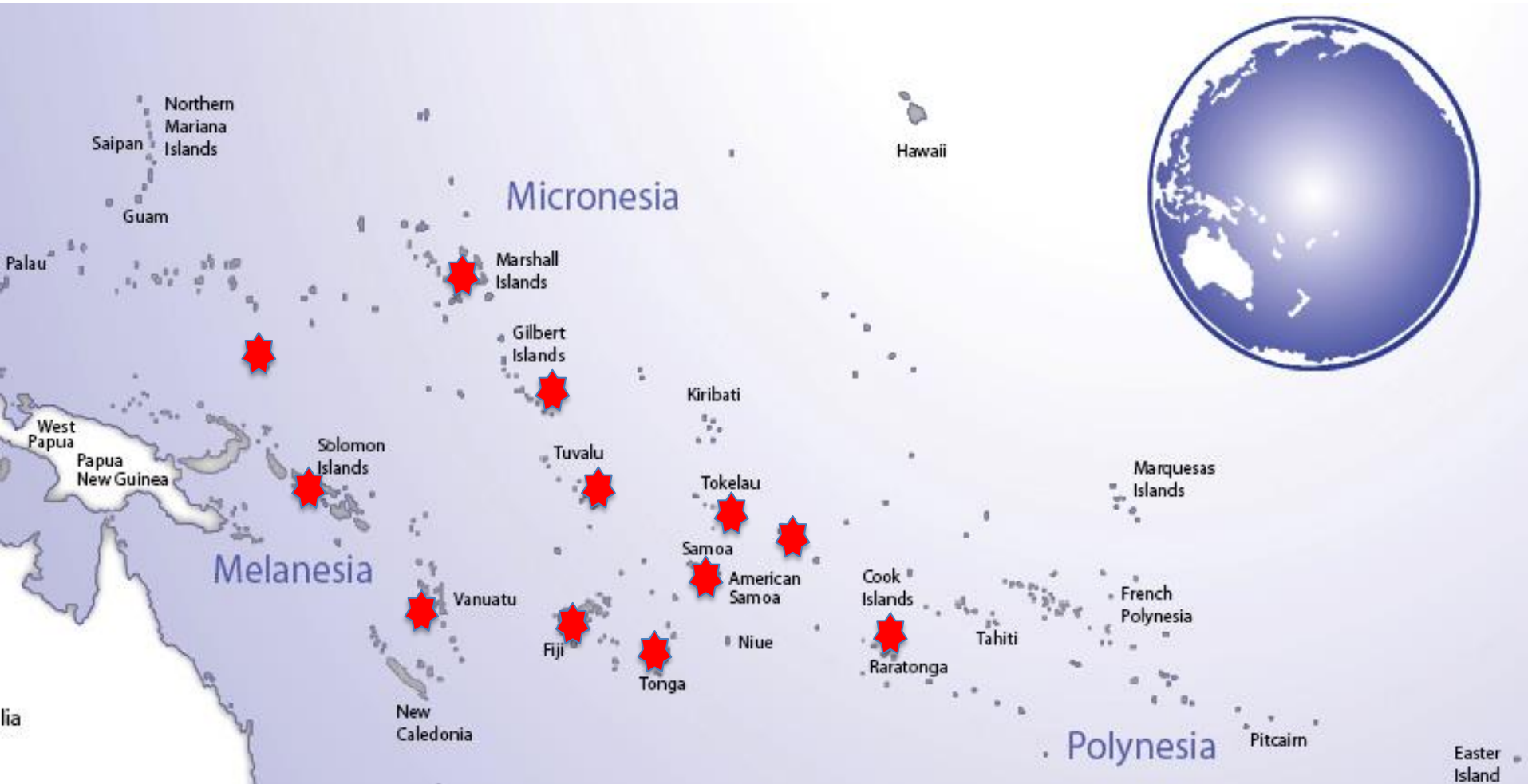


Turning the Tide: transitioning to low carbon transport futures

OCEANIA CENTRE FOR SUSTAINABLE TRANSPORT



Dr Peter Nuttall

Research Associate: University of the South Pacific







The World burns about 17% of its fossil fuel on transport (the fastest growing sector)

The Pacific imports all its fossil fuel and burns 70%+ of that on transport.

The World divides its energy thinking into Electricity (Energy) and Transport. Electricity is its priority. When it thinks about transport as energy it mainly thinks about land transport.

This thinking is then transferred to the Pacific – through donor priorities, and imported ‘expert’ opinion.

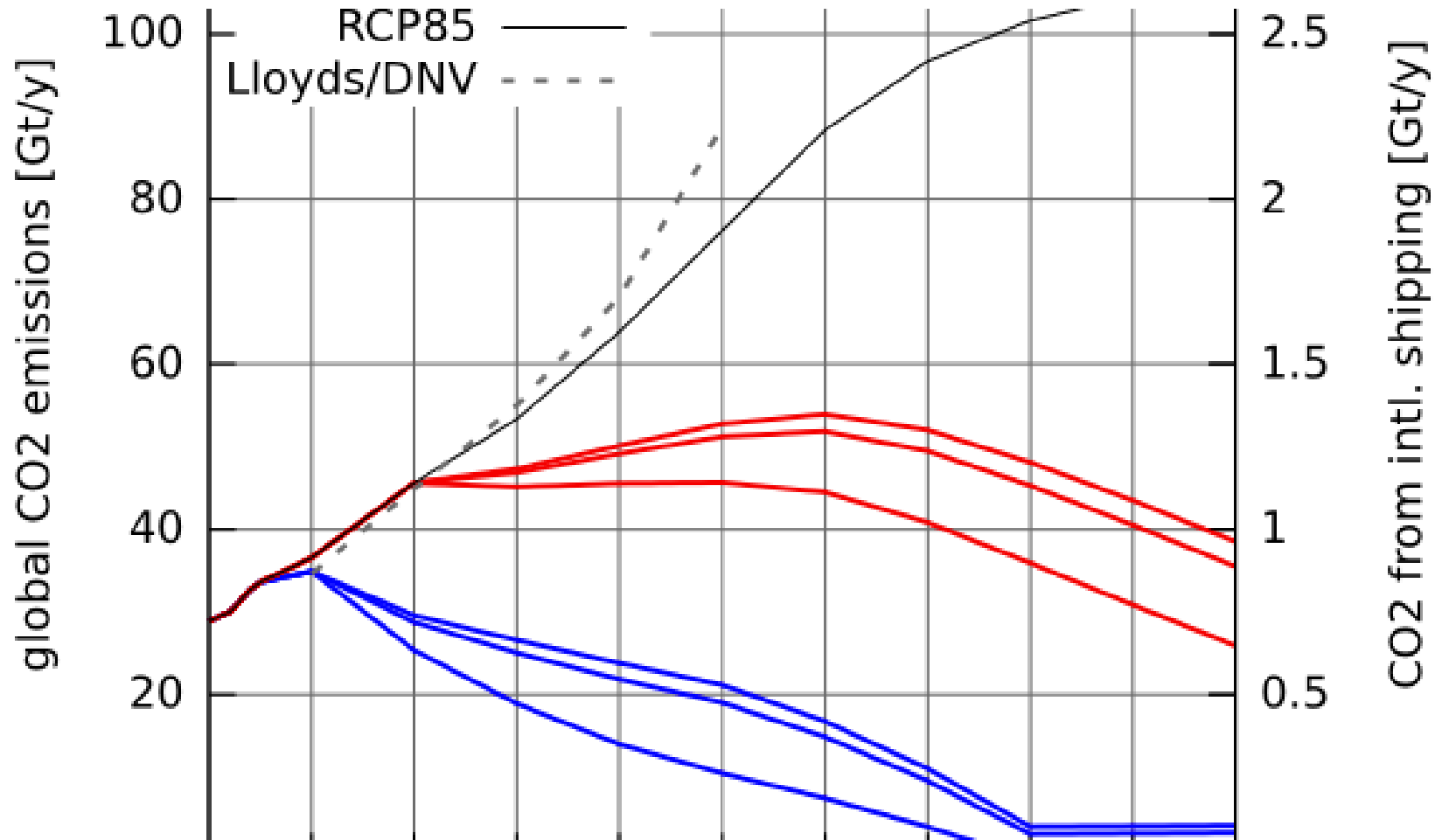
\$1billion+ for RE electricity.

\$0 for sea transport

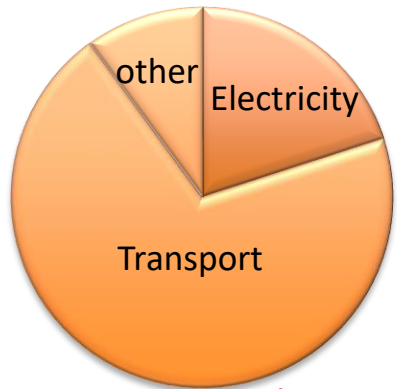
RMI only Pacific country to set target to reduce transport fuel use



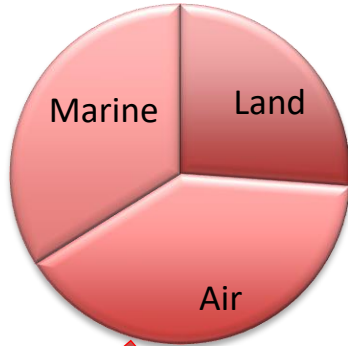
Global Shipping Emissions Forecast



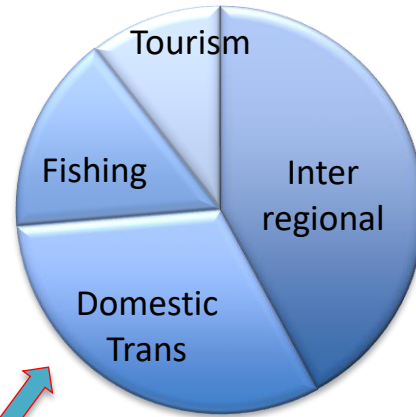
Imported Regional Fuel by Sector



Transport Fuel by Sector (Fiji)



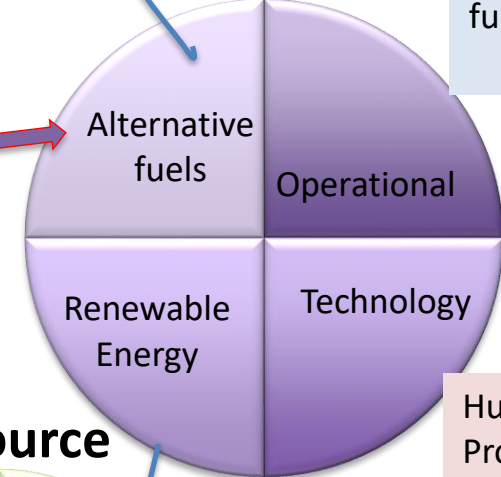
Marine by sector



LNG; hydrogen, methane, biofuel, biogas, etc

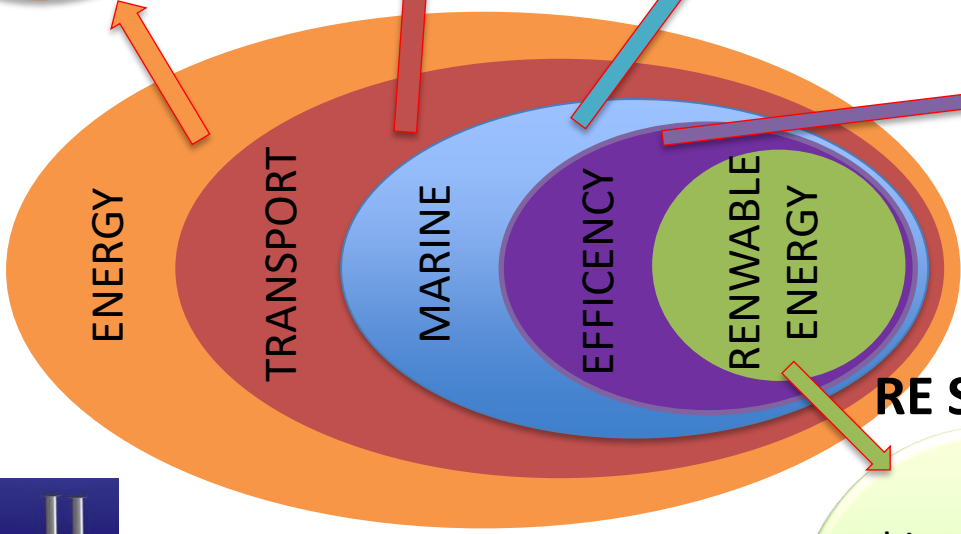
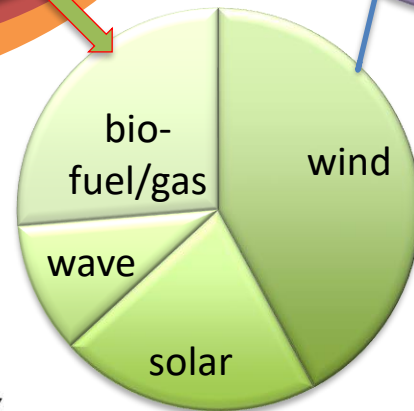
Slow Steaming, Port efficiencies, Weather routing, Just-in-time, bulk fuel purchase, etc

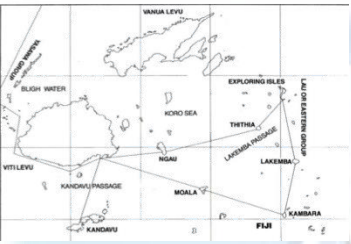
Efficiency Methods



Hull design, Propeller upgrade, Waste heat recovery, etc

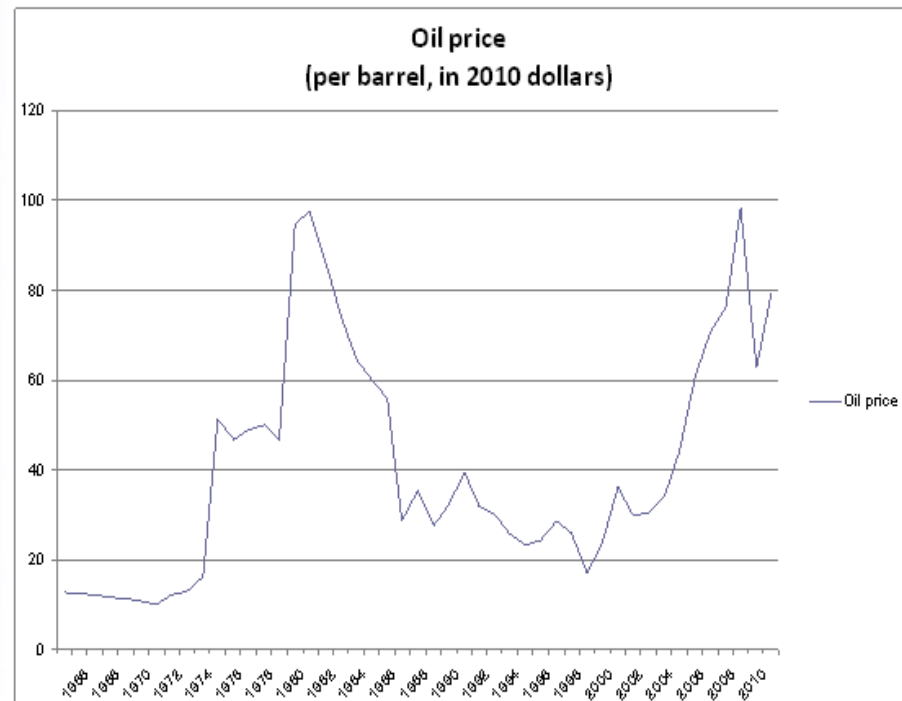
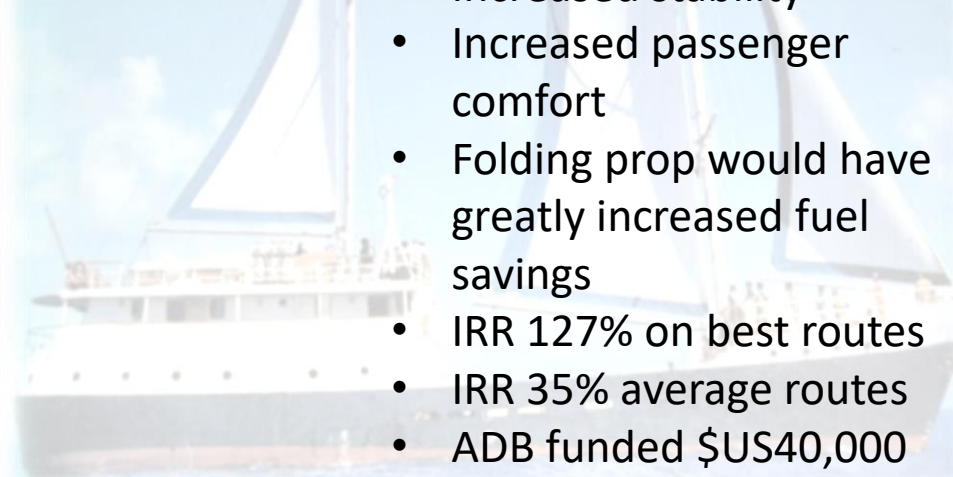
RE Source





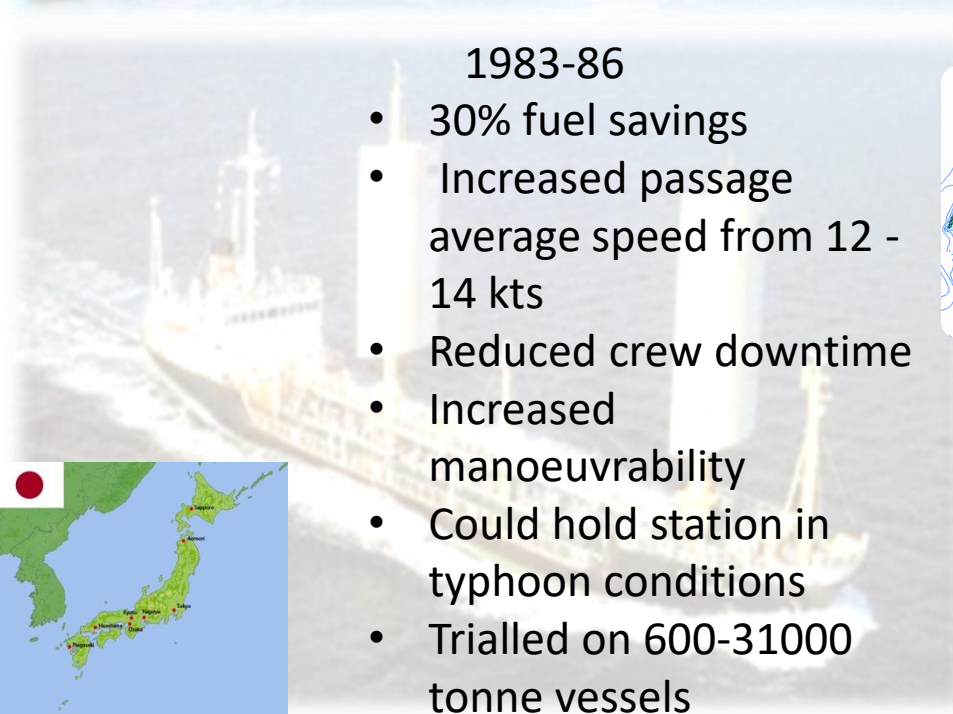
1984/86

- 23-30% fuel savings
- 30% reduced engine wear
- Increased stability
- Increased passenger comfort
- Folding prop would have greatly increased fuel savings
- IRR 127% on best routes
- IRR 35% average routes
- ADB funded \$US40,000



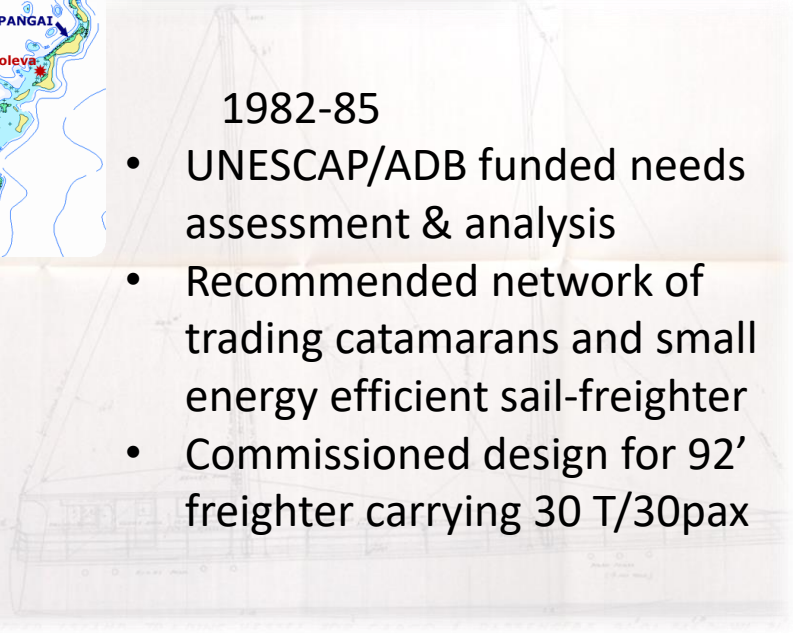
1983-86

- 30% fuel savings
- Increased passage average speed from 12 - 14 kts
- Reduced crew downtime
- Increased manoeuvrability
- Could hold station in typhoon conditions
- Trialled on 600-31000 tonne vessels



1982-85

- UNESCAP/ADB funded needs assessment & analysis
- Recommended network of trading catamarans and small energy efficient sail-freighter
- Commissioned design for 92' freighter carrying 30 T/30pax





OSST-RRES Country Programme Framework: Fiji

	Policy				Economics				Heritage			Practical Trials			Teaching		Additional Research								
	Strategic				Infrastructure				Fiji Route Case Studies			International Route Case Studies			Traditional Knowledge	Vessel Construction	Voyaging	Sustainable (Larger Vessels)	100-ton Cargo / Pax	200-300-ton Freighters	Retrofitting Sail/Rotor Rigging	Practical	Theory		
Relevant Plans IMO Regulations; MARPOL Annex V and associated MDM/MBIs; FATS, National Transport Plans; Pacific Plan; Regional Transport Action Plan; Regional Energy Action Plan; Transport, Energy, Climate Change, economic development policies/plans; World Bank; UN ESCAP; UNDP; Bilateral donor strategies; etc	IMO Regulations; MARPOL Annex V and associated MDM/MBIs; FATS, National Transport Plans.	Pacific Plan; Regional Transport Action Plan; Regional Energy Action Plan; etc	Transport, Energy, Climate Change, economic development policies/plans.	World Bank; UN ESCAP; UNDP; Bilateral donor strategies; etc	Master/crew. International standards; MSAF standards	MSAF regulation	MSAF, FIRCA		Sth Lomaiviti	Kadavu	Lau	Rotuma	Central Polynesia	MSG	Micronesia	Traditional Knowledge	Vessel Construction	Voyaging	SVV Sustainable (Larger Vessels)	100-ton Cargo / Pax	200-300-ton Freighters	Retrofitting Sail/Rotor Rigging	Seafaring, Construction, Naval Architecture, Engineering, Survey, Heritage	Undergraduate (Dip) Bachelors Postgraduate (Dip, Masters, PhD)	Data Collection (all sectors), MARPOL Annex V, Carbon Trading (financial mechanisms), letter technology, electric motors, Franchise/Subsidies, emerging technologies
Scoping (current, gap analysis, needs analysis)																									
Research/Action/Project Plan																									
Monitoring and Reporting Framework																									



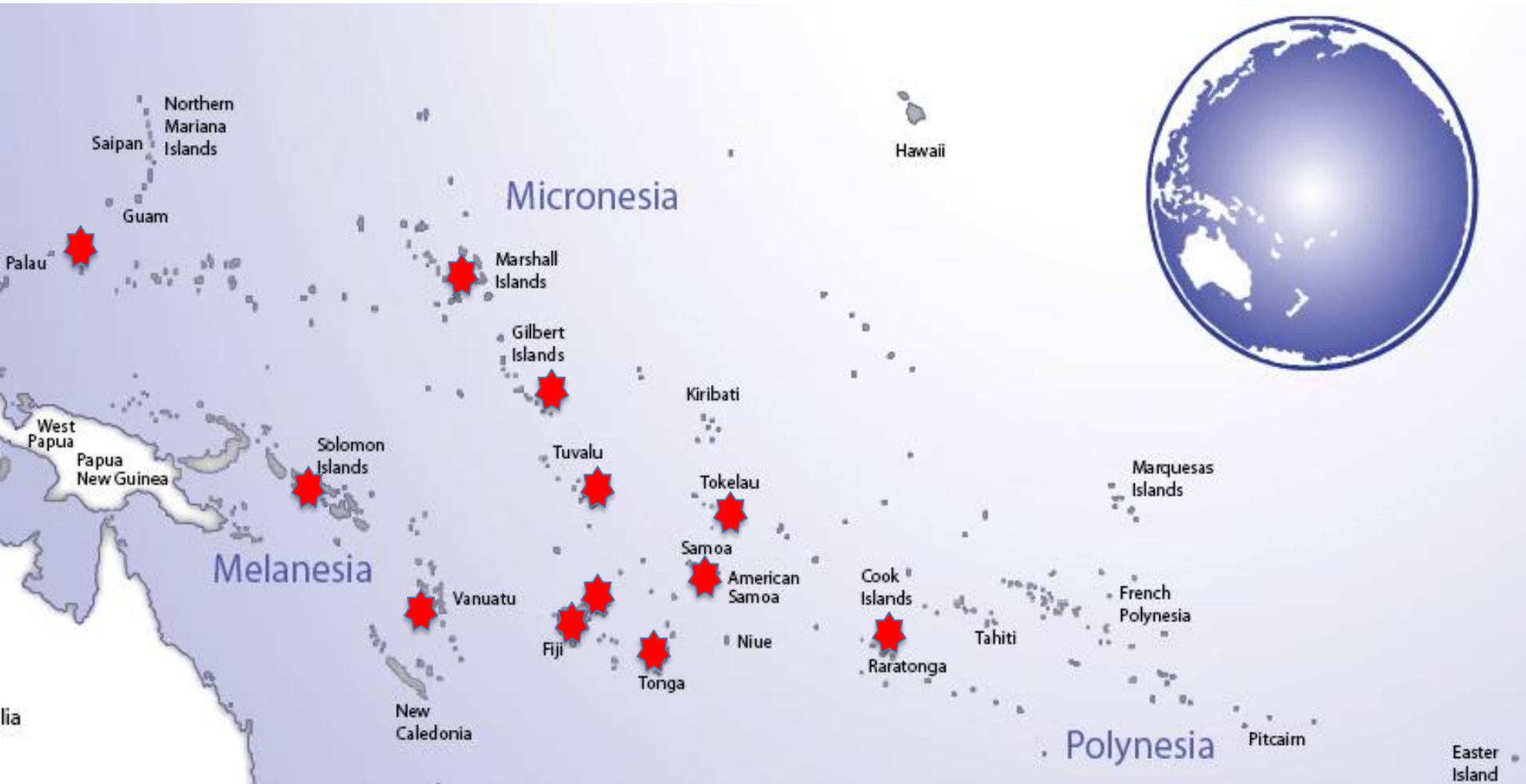
What would USP use a GreenHeart ship for?

- + A low carbon solution flagship
- + trailing Fiji- Tuvalu - Kiribati – Marshall trade
- + Inter-campus transport of equipment, resources, teachers, students, researchers
- + Research, both into transport and marine
- + Sea service time for maritime cadets
- + Operational cost recovery



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