Throughout the Pacific, traditionally designed modernized fossil fuel-free sailing canoes or ‘vakas’ (also known as va’a, waka, walap, waa’) built by Okeanos Foundation for the Sea are fulfilling a variety of regional needs for transportation between the islands.

For the last ten years, the dedicated work of Okeanos has fostered a renaissance in traditional Pacific boat construction, open ocean sailing and navigational training that has inspired innovative, culturally based local solutions while supporting sustainable development and energy independence.

OKEANOS’ MISSION is to empower Pacific Island people to implement traditionally based sustainable sea transportation to ensure economic independence, cultural revival and ocean stewardship.

Okeanos is dedicated to supporting Pacific countries to implement a pan-Pacific vaka network providing safe, regular and reliable service to remote communities. Okeanos vakas are certified for open ocean safety for transport of passengers, cargo, local crops, educational supplies as well as disaster relief while also serving as platforms for vocational sailing training, culturally-based education programs and ocean science research.

Diversified use of the Okeanos Vaka Motu can meet up to thirteen UNFCCC Sustainable Development Goals.
“Te Mana O Te Moana” International Voyage and The Power of Pacific Pride

Okeanos experienced first hand the enormous power of Pacific pride during the ‘Te Mana o Te Moana’ (‘The Spirit of the Ocean’ two year international voyage. From 2011-2012, seven Okeanos built Vaka Moanas were manned by more than 120 sailors. The Foundation has also trained more than 500 seafarers from 12 different island nations most of whom had never sailed before. Together they inspired each other to become professional open ocean sailors out of their sheer will to prove to the world the genius of their ancestral voyaging knowledge.

The Te Mana O Te Moana fleet and international crew travelled from New Zealand across French Polynesia to Hawaii (to honor Hokulea and on to San Francisco, Cocos Island and Solomons. After two years, this proud and powerful crew had collectively travelled nearly 200,000 miles without one accident.

Filled with confidence after living so long on the open ocean, our sailors could clearly see how the Vaka could be a solution for Pacific people to reclaim their power, independence and ancient sea-roads. The Te Mana o Te Moana voyage proved that Pacific people had the strength and knowledge to creatively find solutions to challenges their islands face. The Vaka could renew the economy with day-to-day transportation and exchange between the islands as the ancestors did. It was during the epic Te Mana O Te Moana voyage that the Vaka Motu project was born.

The Vaka Motu - A Solution for Day-to-Day Needs

The Okeanos Vaka Motu, smaller and more nimble than the Vaka Moana, is made for work. So convinced of the Vaka Motu’s potential, we immediately launched sea trials. Over the course of 6 years, we tested our Vaka Motu in 8 Pacific countries (Fiji, Vanuatu, Palau, PNG, Marshall Islands, New Caledonia, Federated States of Micronesia, and Solomon Islands). We have now built 7 Vaka Motus, adjusting the design slightly with each model based on recommendations from the Pacific Islanders who sail her. Today, all our Vaka Motus come outfitted with a solar powered desalination unit providing 60 liters of drinking water per hour.

Since 2012, the Vaka Motus have sailed more than 100K open ocean miles. We have trained dozens of sailors, mates and captains to operate the Vaka Motu in our New Zealand based training center. Our Vaka Motus have been used throughout the Pacific for emergency and disaster relief, transport of food, passengers, medical and educational supplies. They have served as educational platforms for safety, vocational sailing, celestial navigation and scientific research.
Okeanos Marshall Islands (OMI)
Since 2017, OMI has trained more than a dozen Marshallese crew to be open ocean sailors while providing much needed passenger, cargo, health and food transport services to 15 outer island communities (Mili, Aur, Arno, Ailuk, Enewetak, Bikini, Maloelap, Ailinglaplap, Ebeye, Jaluit, Wotje, Ebon, Kili, Jabon, Rongelap).

OMI has partnered with the Marshallese government to support ministries such as Health and Education and NGOs and educational institutions such as MISCO, Island Research & Education Initiative (IREI), PREL, University of South Pacific, University of Edinburgh to provide regular sustainable sea transportation to remote islands. Notably, OMI has serviced the nuclear legacy victims of Enewetak and Bikini atolls who are among Marshall Islands’ most vulnerable communities.

Okeanos Pohnpei
Since 2019, Okeanos Pohnpei serviced the outer Islands of Sapwuahfik, Nukuoro, Kapingamarangi, and Mwoakilloa - transporting patients from remote communities to seek further medical treatment.
In celebration of Earth Day, the crew worked with local youth members for two days to collect 1.5 tons of trash from Pakin Atoll's beaches. Every crew member with Okeanos Pohnpei has a commercial safety certificate and first aid training.

Okeanos Palau
Since July 2019, Okeanos has trained three Palauan crew including a 4000 mile open ocean sail from New Zealand to Koror. Okeanos Palau has begun initial sea trials and open ocean service and scientific surveys: a two-day sail to Kayangel with Coral Reef Centre Research (PICRC); and a sail to Sonosol with Pacific Academic Institute for Research (PAIR), Palau Community College, and Governor Ierago-Miles for a project to protect local coconuts from invasive beetle species.

Okeanos Yap
With two vakas (Okeanos Amabassador & Okeanos Waa'qab shown above) currently in sea trials, Okeanos is working closely with the Yap State government to establish a vaka-bus route that will provide regular and sustainable transportation to and from the outer islands. Okeanos Yap's vakas have already sailed to several outer islands providing a traditionally based, fossil fuel-free alternative to the infrequent, single cargo ship that remote islanders have come to depend upon.

VAKA MOTU OPERATIONS
Since 2012, the Okeanos vaka motus have operated in twelve island nations. Today, Okeanos Vaka Motu operations provide sustainable sea transportation in the following countries:

Okeanos Vanuatu:
Following the devastation of Cyclone Pam in 2015, Okeanos Vanuatu provided immediate disaster relief by delivering local crops and seedlings to the very remote island groups urgently in need of help. The crew also transported members of international aid organizations to evaluate the damage and need on these islands (photo top right).

In 2018, a team of volcano scientists chartered Okeanos Vanuatu on an expedition around the Ring of Fire to better understand the effects of volcanic gas emissions that profoundly impact the climate.

Today, Okeanos Vanuatu provides transport of local root crops from the villages on Shepherd Islands to Port Vila for sale at markets while transporting passengers back to their outer island homes, supporting Vanuatu's sustainable and indigenous agricultural industry.
**Okeanos Mission: Building a Pan-Pacific Vaka Network** Islanders from across the Pacific have embraced Okeanos Vakas as their vehicles from which to launch innovative and interdisciplinary solutions to the challenges they face. It is the mission of the Okeanos Foundation to implement a pan-Pacific inter-island vaka network to fulfill important regional needs for transportation of cargo and people (passengers, doctors, teachers, etc.) through commercial enterprises as well as efficient and effective vessels for disaster relief, research, ocean monitoring and place-based hands-on educational curriculum.

**Pacific Wide Partnerships:**
Okeanos is supporting Pacific Island leaders as they pursue a regional Green Climate Fund proposal for a network of traditionally designed, sustainable sea transportation based on the success and versatility of the Vaka Motu.

**RIGHT:** During the Micronesian Leaders Summit in Majuro, Marshall Islands in March 2018, five Pacific leaders (from L-R) Prime Minister Sopoaga of Tuvalu, President Remengesau of Palau, President Heine of RMI, President Waqa of Nauru, President Mamau of Kiribati and Secretary General of PIF Dame Meg Taylor sailing on the Okeanos Marshall Islands.

**ABOVE:** Okeanos Vanuatu transports local food crops **BELOW:** Okeanos Pohnpei arrives in Pohnpei after a 4,000 mile sail from New Zealand

**BELOW:** Okeanos Marshall Islands provides food security for outer islands
TRAINING OPEN OCEAN SAILORS

Capacity Building and Job Creation
Okeanos has trained hundreds of Pacific islanders from 11 nations to be open ocean sailors, reviving the ancient searoads across the vast Pacific traversed by the ancestors.

The Okeanos Maritime Training Program is a hands-on practical learning experience based on the Vaka but also backed up by a theoretic approach in the classroom led by experienced and competent, internal as well as external instructors. Okeanos' curriculum offers a range of courses to ensure the safety and quality of operations including:

**Seamanship Courses I and II**
Compulsory training course for all crew working on Okeanos Vakas provides essential safety and Vaka sailing knowledge including Vaka handling under sail and engine, chartwork, navigation techniques, tides, weather, rules and regulations, emergencies, basic knots & splices, as well as ethics & behavior on board.

Emergency procedures, maintenance, reporting requirements and rope work are provided. Fire Fighting and First Aid courses are delivered by external providers.

All Okeanos Training Courses require students to pass theoretical exams and practical assessments at sea.

The students have the possibility to participate in the construction of a Vaka Motu under the direction of experienced traditional boat builders. Through the realization and acquisition of the necessary skills in this process such as tools manipulation, wood work and lashing, they greatly assist in the maintenance and ongoing care of their own Vakas.
TRADITIONALLY DESIGNED, SUSTAINABLE SEA TRANSPORTATION PROVIDES GREEN PUBLIC-PRIVATE BUSINESS MODEL FOR PACIFIC ISLANDS

13 SDGs

**Culture and Education**
- SDG 3 Develop mental & physical wellbeing promotes healthy environment to support culture & education
- SDG 4 Ensure inclusive and quality education for all and promote lifelong learning - Cultivate relevant skills including technical and vocational skills
- SDG 5 Achieve gender equality - Provide equal opportunity in education and in the work place
- SDG 8 Promote sustainable economic growth - Increase youth employment, education and training - Promote local culture, products and training - Sustainable tourism
- SDG 12 Develop and implement tools for sustainable tourism that create jobs and promote local culture and products

**Sustainable Development**
- SDG 1 No Poverty - Provide reliable jobs & support livelihoods
- SDG 2 Zero Hunger - Promote reliable means of transportation of food including during periods of natural disaster - Provide drinking water with desalination unit
- SDG 8 Promote Sustainable Economic Growth
- SDG 9 Build Resilient Infrastructure - Promote inclusive and sustainable industrialization and foster innovation
- SDG 10 Reduced Inequality - Provide economic opportunities & access to resources to marginalized communities
- SDG 14 Economic benefits to SIDS including Eco-tourism
- SDG 17 Global Partnerships for Sustainable Development: Support Pacific islands’ capacity for domestic revenue

**Energy Production and Consumption**
- SDG 7 Infrastructure and technology for sustainable development services
- SDG 12 Ensure sustainable consumption and production patterns - Promote sustainable business practices
- SDG 17 Support the development and transfer of environmentally sound technologies

**Ocean, Conservation and Climate Action**
- SDG 13 Climate Action - Strengthen resilience to climate disasters
- SDG 14 Conserve oceans, seas and marine resources for sustainable development - Reduce marine pollution - Sustainably manage coastal ecosystems, including MPA monitoring - Minimize ocean acidification - Increase scientific knowledge of ocean ecosystems
## OKEANOS VAKA MOTU SPECIFICATIONS

<table>
<thead>
<tr>
<th>Type:</th>
<th>Traditional Double-Hull Sailing Canoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length:</td>
<td>14.8 m (50 ft)</td>
</tr>
<tr>
<td>Width:</td>
<td>6.2 m (20 ft)</td>
</tr>
<tr>
<td>Draft:</td>
<td>0.7 m (2.2 ft)</td>
</tr>
<tr>
<td>Displacement:</td>
<td>9 tons</td>
</tr>
<tr>
<td>Sail Area:</td>
<td>58 m² (615 square feet)</td>
</tr>
<tr>
<td>Sailing Cruise Speed:</td>
<td>6 – 9 knots</td>
</tr>
<tr>
<td>Cargo:</td>
<td>3 tons</td>
</tr>
<tr>
<td>Bunks:</td>
<td>12</td>
</tr>
<tr>
<td>Crew:</td>
<td>4</td>
</tr>
<tr>
<td>Passengers:</td>
<td>8</td>
</tr>
<tr>
<td>Hull:</td>
<td>E-Glass and Epoxy Resin</td>
</tr>
<tr>
<td>Super structure:</td>
<td>Wood</td>
</tr>
<tr>
<td>Steering System:</td>
<td>Paddle (Hoi)</td>
</tr>
</tbody>
</table>

Water Maker / Desalination: 60L per hour (powered by solar panels or by generator at night)

### OPTION 1: ELECTRICAL

<table>
<thead>
<tr>
<th>Auxiliary System:</th>
<th>2 x Inboard Electrical Motors (12kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruise Speed:</td>
<td>6 knots using electrical engines</td>
</tr>
<tr>
<td>Solar Panel System:</td>
<td>8 x Solar Panels (199W Peak)</td>
</tr>
<tr>
<td>Batteries:</td>
<td>2 x 15 kWh 48V LiPo Battery System</td>
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</table>

### OPTION 2: HYBRID

<table>
<thead>
<tr>
<th>Auxiliary System:</th>
<th>2x inboard electric motors with 2x volvo 30hp generators (adapted for coconut oil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruise Speed:</td>
<td>6 knots using electrical engines</td>
</tr>
<tr>
<td>Solar Panel System:</td>
<td>4 x 360Wp Solar Panels</td>
</tr>
<tr>
<td>Batteries:</td>
<td>2 x 17 kWh 48V LiPo Battery System</td>
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</tbody>
</table>

### OPTION 3: PURE ENGINE

<table>
<thead>
<tr>
<th>Auxiliary System:</th>
<th>2 x Perkins 20 HP Inboard Engines (adapted for coconut oil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruise Speed:</td>
<td>6 knots</td>
</tr>
<tr>
<td>Solar Panel System:</td>
<td>4 x 360Wp Solar Panels</td>
</tr>
<tr>
<td>Batteries:</td>
<td>2 x 15 kWh 48V LiPo Battery System</td>
</tr>
</tbody>
</table>

For more information contact us at: mail@okeanos-foundation.org
www.okeanos-foundation.org
SUPPORTING THE RETURN TO A TRADITIONALLY BASED CIRCULAR ECONOMY

We learned from Papa Mau Piailug how the traditional canoe allowed voyagers to gather resources from the ocean and distribute those resources justly throughout Pacific communities. In the past, every Pacific family had a canoe and relationship to the canoe was central to an islander’s identity. With colonialism, sadly Pacific canoe culture declined and few people teach canoe building or traditional navigation today. The Western imposed economy gives few job opportunities for islanders trained in traditional seafaring. In Pacific countries now there is a great disparity between the few who control a limited number of foreign-made, diesel-driven cargo ships and the vast majority who are dependently waiting for basic resources to be delivered by those infrequent vessels.

Okeanos’ mission is to assist the Pacific countries in regaining a sustainable and autonomous economy that includes frequent maritime transport using traditionally based sailing vessels. We believe that the future economic and environmental health of the islands can only be achieved through local efforts to reestablish traditional methods of interacting with, and protecting, the ocean.
Joining Forces For a Fossil Fuel-Free Pacific Future:
Pacific islands have the culture, resources and knowledge necessary to make change and feel an urgency to take control of their future by implementing sun, wind, and biofuel technologies. Small Island nations are poised to be the world’s front runner in the global paradigm shift away from dependency on fossil fuel.

Collective Action to Prepare for the Future based on Respect for the Past:
We are in urgent need of a collaborative, holistic and interdisciplinary approach that pools knowledge and actions to implement appropriate place- specific solutions to the challenges Pacific peoples are facing. Coordinating the efforts of regional, national, private and nonprofit organizations all striving to protect the health of the Pacific and its peoples is our only chance to preserve the complex fabric of life within our world’s largest ecosystem.

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