Throughout the Pacific, traditionally designed modernized fossil fuel-free sailing canoes or ‘vakas’ built by Okeanos Foundation for the Sea are fulfilling unlimited regional needs for transportation between the islands. For the last ten years, the dedicated work of the 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 eleven UNFCCC Sustainable Development Goals.
Okeanos & Traditional Open Ocean Voyaging:
Currently, Okeanos built 15 open ocean voyaging canoes and are operating in the Pacific including: Cook Islands, Fiji, New Zealand, Samoa, Tahiti, Vanuatu, Marshall Islands, Commonwealth of the Northern Marianas, Federated States of Micronesia, Hawaii and soon Palau.

**10 years of Experience** - Okeanos Vakas are Safe, Proven and Reliable having collectively sailed more than 300,000 open ocean miles across the Pacific Ocean.

The Okeanos Vaka Motu is our “Boat for the Islands” designed to meet Pacific communities’ immediate needs for sustainable sea transportation. The Vaka Motu has undergone six years of sea trials in Fiji, Palau, RMI, Vanuatu, Micronesia among others Pacific countries.

BELOW: Okeanos international voyage
*Te Mana O Te Moana*
(The Spirit of the Ocean)
began April 2011 and ended August 2012.

Over the course of two years, hundreds of first time sailors from 11 Pacific countries were trained as they navigated across the open ocean twice, carrying the message of respect for culture and sea while visiting 15 nations along the way. Collectively, our seven open ocean canoes including *Gaualofa* (Samoa), *Uto Ni Yalo* (Fiji), *Marumaru Atua* (Cook Islands), *Hinemoana* (Aotearoa), *Te Matau a Maui* (Aotearoa), *Haunui* (Aotearoa), *Fa’afaite* (Tahiti), safely sailed 210,000 nautical miles of open ocean.

<table>
<thead>
<tr>
<th>Pan-Pacific Voyage</th>
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*Map of *Te Mana O Te Moana*
International Voyage 2011-2012
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 is based on a hands-on practical learning 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 course 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 the students to pass theoretical exams and practical assessments at sea.
The students usually also have the possibility to participate in the construction of a Vaka Motu under the direction of experienced traditional boat builders. Realizing and acquiring the skills necessary in this process such as tools manipulation, wood work and lashing greatly assists the maintenance and ongoing care of their own Vakas.
**OkeanosMission: APan-PacificVakaNetwork**

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 unlimited 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.

**Public Service Needs:**

**Inter-Island Transportation Infrastructure**

- A pan-Pacific vaka network would provide sustainable, safe, adequate, and affordable transport services at all times to all people including those in remote areas and the outer islands.

**Disaster Brigade (emergency response network)**

- Pan-Pacific vaka network of 40 plus boats are stationed on each island nation with trained crew ready as emergency responders in the event of natural disasters.
- Okeanos Vakas are able to navigate shallow waters and land on beaches without docks. They are propelled by alternative energy (wind, sun, coconut oil), independent from fossil fuel, and always immediately operable to move people, supplies and relief between the affected islands.

**Ocean Monitoring Infrastructure**

- The sustained presence of a pan-Pacific vaka network would provide new and regular transects between the islands and the opportunity to collect much needed ocean data for the Global Ocean Observing System (GOOS).
- Okeanos Vakas outfitted with ocean sensing devices would provide sustained data-streams that are critical contributions to the GOOS Pacific system, filling gaps in the international database. Localized Pacific ocean monitoring capabilities build the region’s capacity for environmental management, forecasting, storm prediction and climate change preparedness.

**Scientific Research Platforms**

- The Okeanos Vakas, driven by wind and solar power, are quiet, non-polluting and often provide the perfect platform for scientists, ocean researchers and observers to work in close proximity with marine wildlife. The unique catamaran design provides researchers with sustained access to remote, hard to get to areas that are difficult for standard fossil fuel driven boats to reach.
Education and Ocean Stewardship

- Okeanos Vakas are innovative floating classrooms providing a wide variety of educational experiences through partnerships with schools and universities across the Pacific. Okeanos Vakas have a long history of inspiring learning in traditional navigation, ocean stewardship, environmental and ecosystem science for elementary, high school and university students.
- Okeanos Vakas equipped with ocean monitoring devices can feed data to local universities providing educational resources for ocean observation education and training.

Workforce Development

- The establishment of a pan-Pacific vaka network involves the training and sustained efforts of Pacific peoples in a variety of disciplines and expertise. Involved islanders from across the region will be needed to implement a wide array of skilled activities including boat building and maintenance, sailing, navigation, ocean monitoring and data collection, and small business development.

Private and Commercial Service Opportunities:

- Sustainable community led business initiatives
- Cargo and Passenger transportation
- Culture and History Based Tourism
- Eco-tourism
- Boat Building and Technical Maintenance
- Maritime Training Certificates

Social Entrepreneurship

To assist in implementation of sustainable sea transportation, Okeanos Foundation for the Sea has initiated several social entrepreneurship projects supporting locally run businesses based on competitive use of Vaka Motus. We do this by partnering with local managers and crew to establish Okeanos limited businesses that operates based on community demand for traditionally designed sustainable sea transportation. Okeanos social entrepreneurship projects are operating in:

Okeanos Vanuatu:

After cyclone Pam in March 2015, Okeanos Vanuatu Vaka Motu and its crew helped with disaster relief work by delivering crops and seedlings to the different islands where the agriculture was weakened or destroyed. Now Okeanos Vanuatu provides regular charters for delivery of root crops, scientific research and eco-tours.

In 2017, Okeanos Vanuatu won the Kal International Sustainable Tourism Award for Transportation.
Okeanos Marshall Islands:

Okeanos Marshall Islands Vaka Motu began her sailing career as Hōkūle‘a’s escort vessel for the last leg of the Malama Honua worldwide voyage from Tahiti to Honolulu. In July of 2017, Okeanos Marshall Islands and her Marshallese crew arrived in Majuro welcomed with a traditional ceremonial escorted by traditional Marshallese outrigger canoes built by Waan Aelöñ in Majel. Okeanos Marshall Islands is now servicing the atoll nation by transporting people, food and medicine to the outer islands. OMI also collaborates regularly with scientists and students use the vaka for educational and research expeditions.

Okeanos Messenger becomes Okeanos Pohnpei:

Okeanos Messenger traveled to Pohnpei after sailing more than 3000 miles from New Zealand, stopping in Vanuatu and Kiribati and Marshall Islands along the way. This open ocean sailing canoe has come at the request of the Governor of Pohnpei Marcelo Peterson who is committed to providing regular sustainable sea transportation to his state’s outer island communities. Okeanos Messenger will be renamed Okeanos Pohnpei.

Partnering for the Pacific:

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. During the Micronesian Leaders Summit in Majuro, Marshall Islands in March 2018, 5 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.

“Speaking of the Marshall Islands, we have 24 atoll communities. We could use one or two vaka for each of those atoll communities.”

- Her Excellency President Hilda Heine, Republic of the Marshall Islands speaking at COP23, Bonn, Germany
In developing fossil fuel-free sea transportation for the Pacific region, Okeanos seeks to incorporate appropriate technologies that promote sustainable best practices while empowering communities, maintaining cultural traditions and reducing the human footprint. Over the last seven years, we have developed three types of Vakas, providing solar powered alternative ocean transportation for almost every Pacific need.

**Vaka Moana** (Boat of the Ocean is our largest traditional canoe built according to drawings made by James Cook around 1770. She has two masts, a maximum weight of 14 tons, accommodates 16 people and is able to carry four tons of load. She is made for open sea transportation over long distances with the larger goal of reviving traditional Pacific culture for the next generation.

**Vaka Motu** (Boat for the Islands is the workhorse of the Pacific. She has only one mast, a maximum weight of nine tons, can accommodate 12 people and transport three tons of cargo. She is internationally certified for open-ocean safety for commercial use and is successfully used throughout the Pacific for people and cargo transportation and disaster relief. Her shallow draft allows her dock on the beach and service the most remote islands.

**Okeanos Pearl** (Boat for the Lagoon, is a new construction with 36 solar panels providing 8.6 KW, an energy neutral speed of 6kt and able to accommodate 12 passengers and 4 crew. Okeanos Pearl was launched in June 2017 and is now operating in Bora Bora, Tahiti. Built by SoelYachts, the Okeanos Pearl can save up to 142 tons of CO2 annually in comparison to a conventional propelled vessel with 200-liter-per-day fuel consumption.

All three vaka models share the same technologies including solar panels, battery type, electric engines, controllers and switchboards and differ only with regard to battery size or engine performance. This helps to ensure a high degree of operating efficiency and security.
Culture and Education

**SDG 3**: Developing 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 workplace

**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 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 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>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type:</strong></td>
<td>Traditional Double-Hull Sailing Canoe</td>
</tr>
<tr>
<td><strong>Length:</strong></td>
<td>14.8 m (50 ft)</td>
</tr>
<tr>
<td><strong>Width:</strong></td>
<td>6.2 m (20 ft)</td>
</tr>
<tr>
<td><strong>Draft:</strong></td>
<td>0.7 m (2.2 ft)</td>
</tr>
<tr>
<td><strong>Displacement:</strong></td>
<td>9 tons</td>
</tr>
<tr>
<td><strong>Sail Area:</strong></td>
<td>58 m² (615 square feet)</td>
</tr>
<tr>
<td><strong>Bunks:</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>Crew:</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Passengers:</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Cargo:</strong></td>
<td>3 tons</td>
</tr>
<tr>
<td><strong>Hull:</strong></td>
<td>E-Glass and Epoxy Resin</td>
</tr>
<tr>
<td><strong>Super Structure:</strong></td>
<td>Wood</td>
</tr>
<tr>
<td><strong>Steering System:</strong></td>
<td>Paddle (Hoi)</td>
</tr>
<tr>
<td><strong>Water Maker (Desalination):</strong></td>
<td>60 L per hour (powered by solar panels or by generator at night)</td>
</tr>
<tr>
<td><strong>Auxiliary Systems:</strong></td>
<td>Hybrid Systems:</td>
</tr>
<tr>
<td></td>
<td>2 x Perkins 20 HP Inboard Engines (Compatible w/ Coconut Oil)</td>
</tr>
<tr>
<td></td>
<td>5-7 Knots using engine</td>
</tr>
<tr>
<td></td>
<td>2 x 10kW Inboard Electrical Motors</td>
</tr>
<tr>
<td></td>
<td>2 x 1.5kW Hybrid Charging</td>
</tr>
<tr>
<td></td>
<td>2x 15kWh 48V LiPo Battery System (2 x 30kWh optional)</td>
</tr>
<tr>
<td></td>
<td>2 x 2kVA AC Inverter</td>
</tr>
<tr>
<td></td>
<td>4 x 360Wp Solar Panels</td>
</tr>
<tr>
<td><strong>Sailing Cruise Speed:</strong></td>
<td>6 - 9 knots under sails</td>
</tr>
</tbody>
</table>

For more information contact us at: mail@okeanos-foundation.org
www.okeanos-foundation.org
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 bio-fuel 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.

CONTACTS:
Dieter Paulmann
Founder and C.E.O.
Okeanos - Foundation for the Sea
Auf der Marienhhe 15
64297 Darmstadt, Germany
dieter.paulmann@okeanos-foundation.org

Dena Seidel
Director and Chief Operations Officer
Okeanos - Foundation for the Sea
33 South 4th Ave.
Highland Park, New Jersey, 08904 USA
dena.seidel@okeanos-foundation.org

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