

Pacific Sail Powered Craft

Successes and failures and lessons
learnt

Michael Savins, Kiribati 2012

Traditional Sailing Craft



Photo: O Gulbrandsen. PNG

Subsistence fishers and farmers, generally have very limited financial resources. Craft are made of local materials at almost no cost. Paddle or sail is the only affordable propulsion, sail cloth can be made from any low cost material.



Photo: O Gulbrandsen. PNG

Traditional sailing craft designs, vary dramatically across the vast Pacific region. Variations in traditional designs often due to local wind conditions.



Photo: O Gulbrandsen. Trobriand Islands PNG

The traditional Kiribati canoe.
Construction techniques were developed according to minimal
availability of materials



Photo: O Guldrandsen. Kiribati

Sailing craft design development 1982-1992

Photo and design: O Gulbrandsen

FAO/UNDP
Artisanal fishing
craft
development
Kiribati



FAO Regional
Fisheries
Support
Program

The first Kiribati prototype, sailing craft FAO design KIR 2, 7.1 mtr single outrigger canoe. With a 13 sq mtr lateen mainsail.

Prototypes/Demonstration/Modifications/ Training/Privatization

KIR 8 design, with gunter mainsail and jib



Photo: O Gulbrandsen. Kiribati

Successes

- Approximately 200 FAO improved single outrigger canoe designs built in Kiribati to date. Country wide acceptance and considerable regional interest, more than 20 of the Kiribati designs built in other Pacific Island countries.
- Efficient sail rigs, practical and affordable designs. Outer Island canoe workshops (using hand tools) established to meet island requirements.
- Within first 2 years, Butaritari Island, several craft and Tabiteuea North sixteen craft built to commercial order. Craft owned and operated by private fishermen. Extensive use of sail, several craft on both islands, secondary outboard motors never used. Reported successful tuna trolling operations under sail.
- Private sail makers trained and established, foot treadle sewing machines.
- Five private boat builders established.

Challenges

- British aid established outer island fish bases and provided outrigger canoes and speed boats to fishermen at 50% subsidised cost. Islands chosen politically and in ignorance of existing developments. But on Tabiteuea North, fishers who were completely self funded with existing fleet of appropriate craft were ignored.
- Japanese aid established outer island fish bases and provided outrigger canoes at 100% subsidised price. Large numbers of canoes built under contract within government shipyard. Lack of attention to detail on sail rigs, results in almost all craft de-masted in first weeks of operation.
- Attention to detail required to build quality sailing craft is lost in the commercial drive to make profits.
- Outboard motor powered craft are simpler to build, as there is considerable less detail in construction. Less complications associated with material purchasing and importation.

Other Scenario Kiribati

- In 1985 a sailing catamaran was built in Majuro, Marshall Islands. An American boatbuilder with funding from Save the Children builds and deliver's to the Abaiang Island Council, a J.Brown-designed 14 mtr sailing catamaran.
- Abaiang Island council operated this as a passenger/cargo vessel between Abaiang and Tarawa Islands for about five years. The sails deteriorated and hulls developed dry rot. The craft remained on a beach for about five years. Then was restored by the Abaiang Island council. There was no attempt to refit any sails, as two 40hp outboard motors were fitted. Fuel consumption was excessive, as fuel costs far outweighed income. The operation then stoped.

Other Scenario Tuvalu

Save the Children
Implement a
boat building
project in
Funafuti.

Jim Brown and
his son, train
boatbuilders in
constant camber
construction
techniques and
build several 7.3
mtr sailing
catamarans .



Several
smaller
paddling
sailing canoes
are built with
compounded
plywood
technique.
The boatyard
continues
commercially
under Tuvalu
management.

Other Scenario: Solomon Islands

1984 FAO/UNDP
Develop an
artisanal boat
building
development
project in Auki.
Two prototypes
built.

Sailing trimarans to
provide a safe and
stable platform for
inexperienced
sailors.



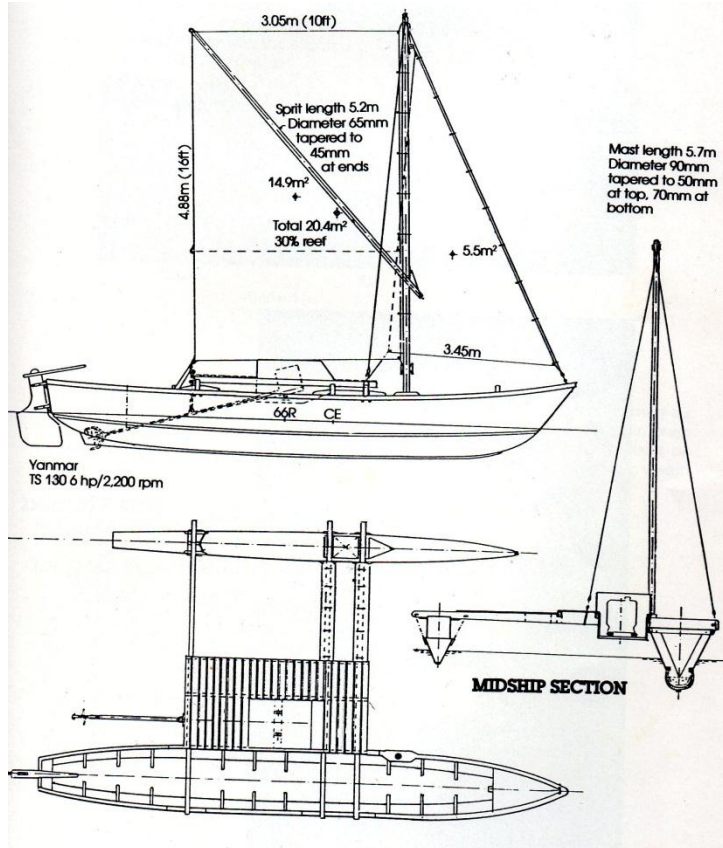
Photo: O Gulbrandsen

1988 another two
trimarans built in
Gizo. Craft are
demonstrated
throughout
Western Province.
Fuel prices in
remote locations
double the price
of fuel in the
capital.

Other Scenario

Papua New Guinea

Papua New Guinea Fisheries Department with technical assistance FAO/UNDP develop several artisanal boat building development projects. Port Moresby, Oro Bay and Manus Island.



Extensive development of appropriate low cost, sail and engine powered improved commercial fishing craft.

Sail for safety



Artisanal fishermen utilizing one engine, daily place their lives in jeopardy. Emergency sail should be mandatory throughout the Pacific.

Conclusions

- All examples I have provided consist of development work with appropriate craft and sail power. However, the only place where the sail introduction continues today is at locations there is a living tradition of the use of sail on traditional craft.
- The FAO/UNDP project in Kiribati provided complete packaged craft to fishermen in 1985 for approx. AUD\$2,000. Today the same craft is AUD\$9,000.
- The dramatic increase in price reflects the state of doing business in a Pacific Island country. Formidable vast geographic locations, limited natural resources and products to trade. Emerging capitalism within the modernity of community structures.
- Margins placed on imported materials are so excessive, modern craft are unaffordable. Limited competition within the business sector maintains high price factors.

Recommendations

- Aid/development projects such as the Artisanal Fishing Craft Development Project in Kiribati promoted appropriate technology and vessel designs and was able to provide an affordable entry point for the average I-Kiribati fishermen.
- Appropriate technology can consist of new and emerging concepts. Concepts need to be proven. Demonstration of benefits over time, and adaptation to local conditions and cultural preferences are so important to achieving long-term sustainability in the Pacific Islands
- Remote disadvantaged communities of the Pacific have extremely limited options to move out of poverty. Climate change is and will continue to have a serious effect on all of the Pacific. The vast islands of the Pacific rely on sea transportation for basic livelihoods. The region is in dire need of initiatives to develop sustainable craft for the future.