



Australian Government
Australian Centre for
International Agricultural Research

PARDI

ACIAR

Pacific Agribusiness Research for Development Initiative (PARDI)

Fisheries Program

Pearl product quality and new products

Pranesh Kishore

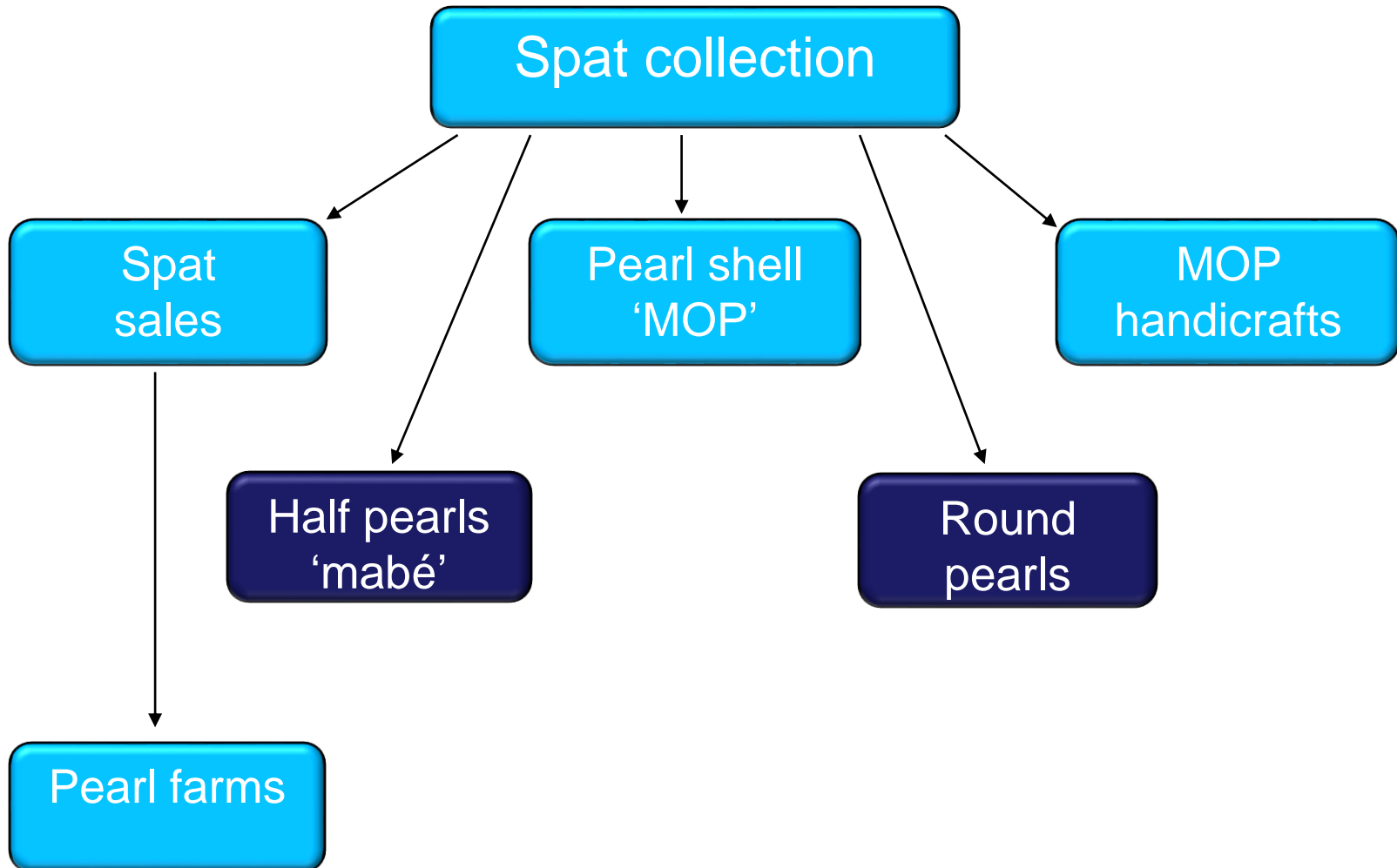


Spat Collection



Australian Government
Australian Centre for
International Agricultural Research

PARDI



Round Pearls



Australian Government
Australian Centre for
International Agricultural Research

PARDI

Fiji Pearls

- Fiji pearls are recognized for their unique colors and high quality which generates global demand.
- However, not all pearls are of a high grade. The proportion of high quality pearls in any particular crop only makes up around 3-5% of the total harvest which generates around 95% of farm revenue.



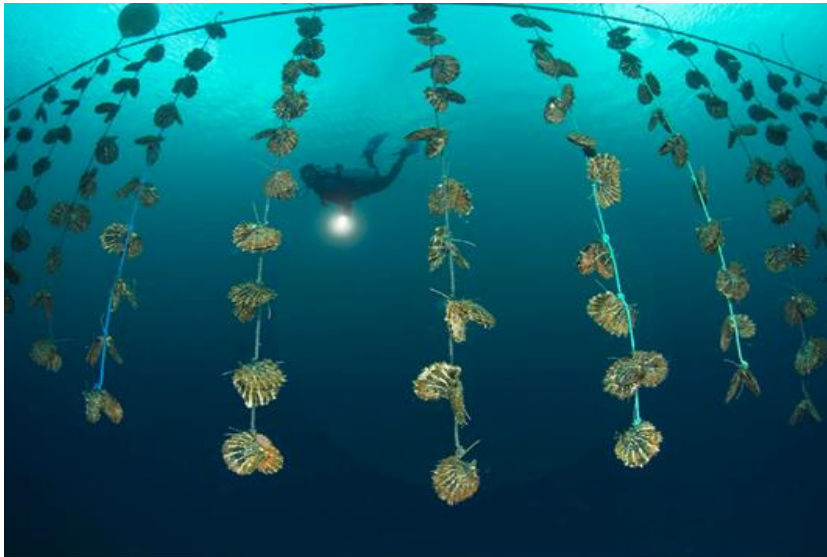
Round Pearls



Australian Government
Australian Centre for
International Agricultural Research

PARDI

- Pearl oysters are primarily cultured using ‘chaplets’ (ropes to which the oysters are tied) in the majority of the pearl farms in Polynesia while panel nets are predominantly used in SE Asia and Australia.
- We determined if the different culture methods had any impact on the quality of the pearls produced.





Round Pearls

- Pearls produced from oysters cultured in panel had higher quality than those produced from oysters on chaplets. Pearls from oysters in panel nets had lower number of circles (a major factor determining pearl quality).



- Results taken up by our main industry partner (changing culture method from chaplet to panel net) resulted in ~30% increase in pearl value in Fiji.



Mabè (half) pearls

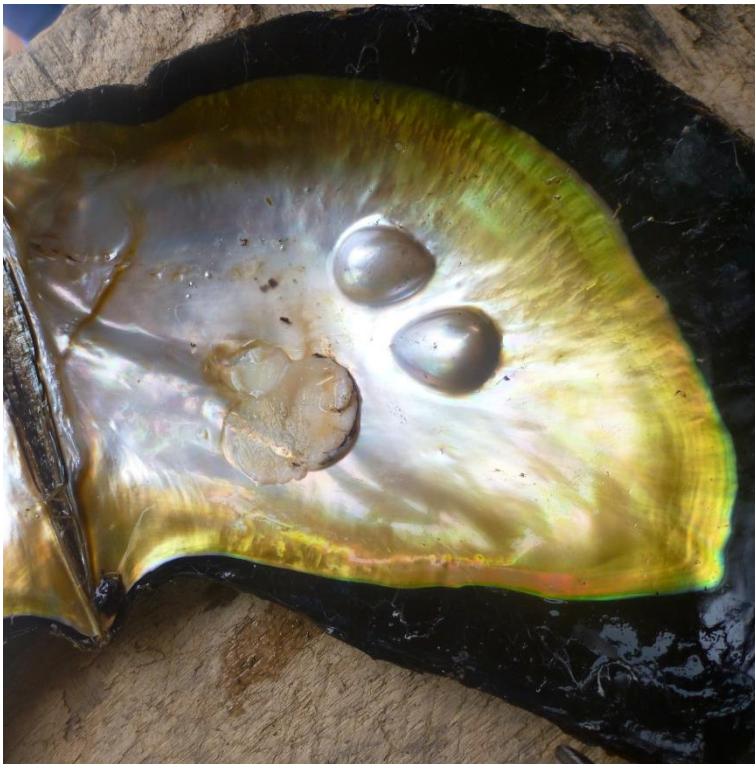
- Fiji pearl culture focuses on round pearls but increased oyster availability through the national spat collection program allowed production of a new product (mabé or half pearls) to be trialed.
- Optimum conditions for high quality mabè production from *Pteria penguin* in Fiji was determined.





Mabè Pearls

- Research showed that high quality mabè pearls can be produced in Fiji broadening industry product range.





Mabè Pearls

- Mabè pearls can be carved locally to attain their highest value with maximum sale prices. They now contribute to Fiji's pearl exports.



Mabè Pearls



Australian Government
Australian Centre for
International Agricultural Research

PARDI

- Community members have been trained to produce high quality mabè pearls.
- Mabé production does not require skilled seeding technicians and local people can be trained to make good quality pearls.
- Mabé are produced in 6-9 months (ca. 2 years for round pearls) offering more rapid income.



Mabè Pearls



Australian Government
Australian Centre for
International Agricultural Research

PARDI

- Mabe production offers livelihood opportunities to communities and entry to the pearl industry





Major impacts

Industry:

- Changing culture method resulted in a ~30% increase in round pearl production value.
- High quality mabè pearls broaden product diversity from the Fijian pearl industry and have found a ready export market.

Communities:

- Local people can be trained to make good quality mabé pearls that offer income generating opportunities.
 - Communities already involved in spat collection could make relatively simple transition to mabé pearl production.
-

Major impacts



Australian Government
Australian Centre for
International Agricultural Research

PARDI

Scientific:

1. Kishore, P. & Southgate, P.C. (2014) A detailed description of pearl-sac development in the black-lip pearl oyster, *Pinctada margaritifera* (Linnaeus 1758). *Aquaculture Research*, DOI: 10.1111/are.12674
 2. Kishore, P. & Southgate, P.C. (2015) Haemocyte persistence after grafting for pearl production in *Pinctada margaritifera* (Linnaeus, 1758). *Fish & Shellfish Immunology* 42, 530-532.
 3. Kishore, P. & Southgate, P.C. (2015) Development and function of pearl-sacs grown from regenerated mantle graft tissue in the black-lip pearl oyster, *Pinctada margaritifera* (Linnaeus, 1758). *Fish & Shellfish Immunology* 45, 567-573.
 4. Kishore, P., Hunter, J., Zeng, C. & Southgate, P.C. (2014) The effects of different culture apparatus and current velocities on byssus production by the black-lip pearl oyster, *Pinctada margaritifera* (Linnaeus 1758). *Aquaculture* 434, 74-77.
 5. Kishore, P. & Southgate, P.C. (2015) Does the quality of cultured pearls from the black-lip pearl oyster, *Pinctada margaritifera* (Linnaeus 1758), improve after the second graft? *Aquaculture* 446, 97-102.
 6. Kishore, P. & Southgate, P.C. (2015) The effect of different culture methods on the quality of round pearls produced by the black-lip pearl oyster *Pinctada margaritifera* (Linnaeus 1758). *Aquaculture (in review)*.
 7. Kishore, P., Southgate, P., Seeto, J. & Hunter, J. (2015). Factors influencing the quality of half-pearls (mabé) produced by the winged pearl oyster, *Pteria penguin* (Röding, 1758). *Aquaculture Research*, 46, 769-776.
-



Australian Government
Australian Centre for
International Agricultural Research

PARDI

Thank You
