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Pacific Agribusiness Research for Development Initiative (PARDI)

Fisheries Component

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Component Objective



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Objective: Strengthen value chains for selected high-value fisheries products through the effective development and delivery of the commissioned projects

Commodities:

- Pearls
- Fisheries products (Tilapia, *Caulerpa*)
- Sea cucumbers

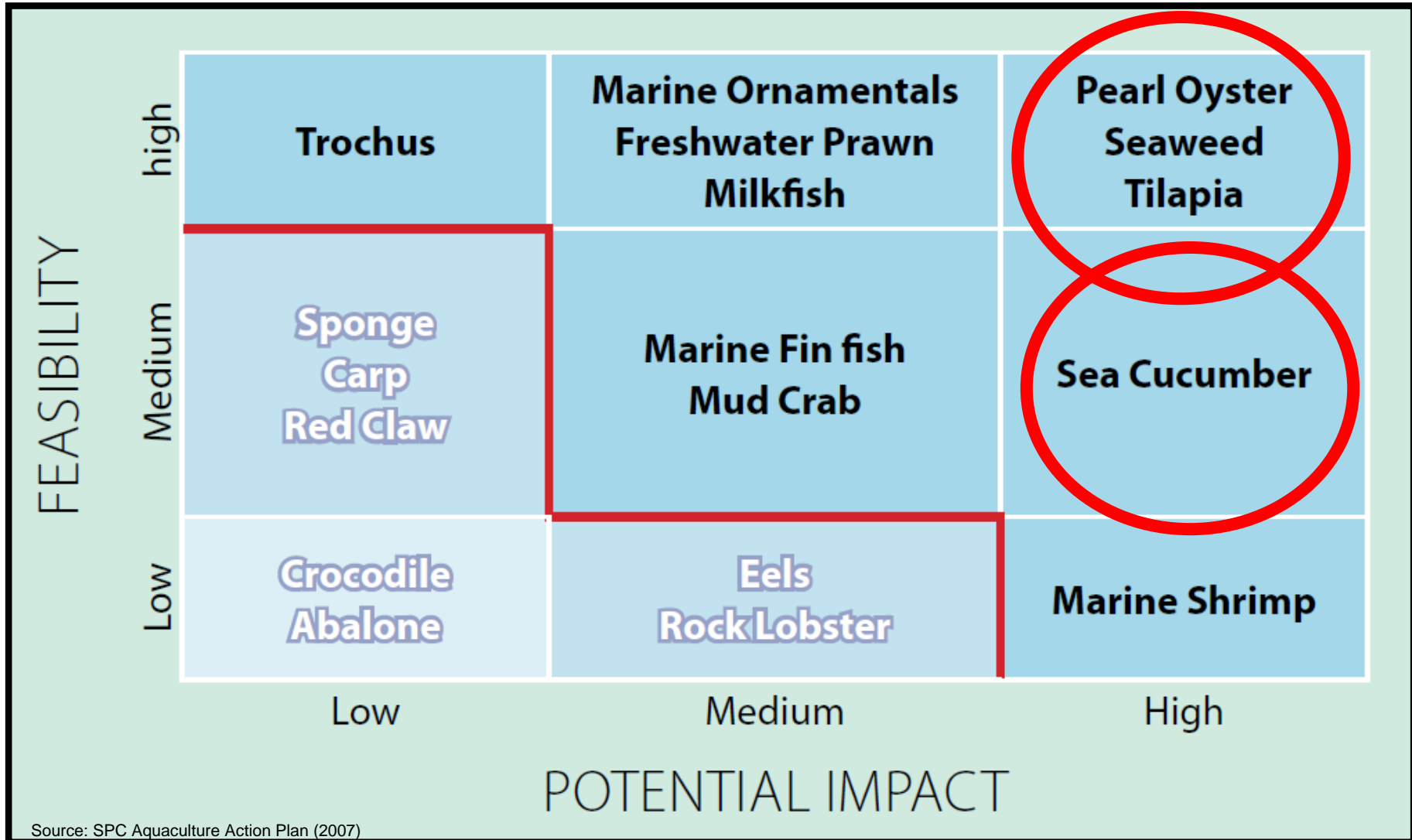
- High priority commodities

Commodity priorities



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Presentations



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Pearls – spat collection program – *Paul Southgate*

Pearls – product improvement/development – *Pranesh Kishore*

Pearls – mother-of-pearl handicrafts – *Theo Simos*

Pearls – a pearl farmers perspective – *Claude Michel*

Sea cucumbers – improved processing – *Ravinesh Ram*

Tilapia/Caulerpa – value-added fisheries products

– *Cherie Morris*

– *Shamron Pickering*

– *Avinash Singh*

Pearls



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Background: Pearls are the Pacific's most valuable aquaculture industry.

- pearl culture and associated economic and livelihood opportunities are under-developed in western Pacific countries
- up only ~1.5% of industry value (~\$200 million p.a.)
- basis for PARDI intervention

Value chain analysis identified a number of bottlenecks to industry development:

Research Activities:

- Improving oyster supply
- Improving pearl quality
- Developing new products
- Improving business skills

= spat collection

What is ‘Spat collection’



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‘**Spat**’ are juvenile pearl oysters that are supplied to pearl farms and then grown to a size suitable for round pearl production.

Collection of spat is achieved by deploying appropriate substrates to the ocean to which oysters spat recruit.

Spat collection is the basis of the \$US200 million pearl industry in French Polynesia and the basis of the Fijian industry. But inadequate spat supply limits industry production in Fiji.



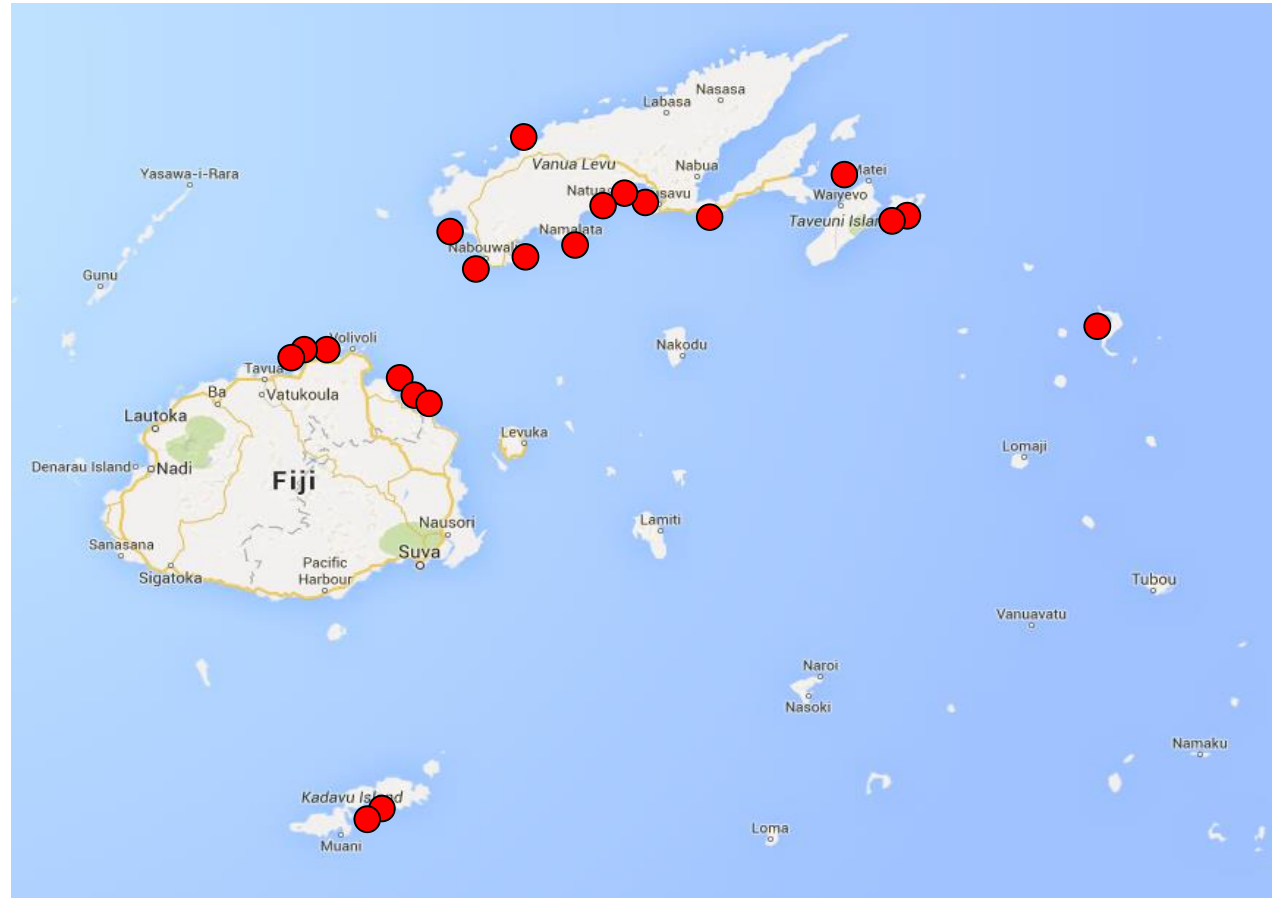
Spat collection



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- National spat collection program developed with Fiji Fisheries
- 54 lines
- 22 sites
- 15 communities and pearl farms



- Mitigation of impacts of weather events – e.g. Cyclone Tomas

Spat collection



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- Oyster spat harvested from collectors after 10-12 months
- All sites collected spat (ca. 5 oysters per collector)
- Program allowed identification of ‘good’ sites and informed future expansion of the program



Spat collectors with oysters, Savusavu.



Ladies from a local community group sort spat collectors, Savusavu.

Spat collection



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Spat collection at Namarai, Viti Levu

- Two were species collected – ‘black-lip’ and *Pteria*

Spat collection



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Establishing a **national spat collection program** was a key project milestone:

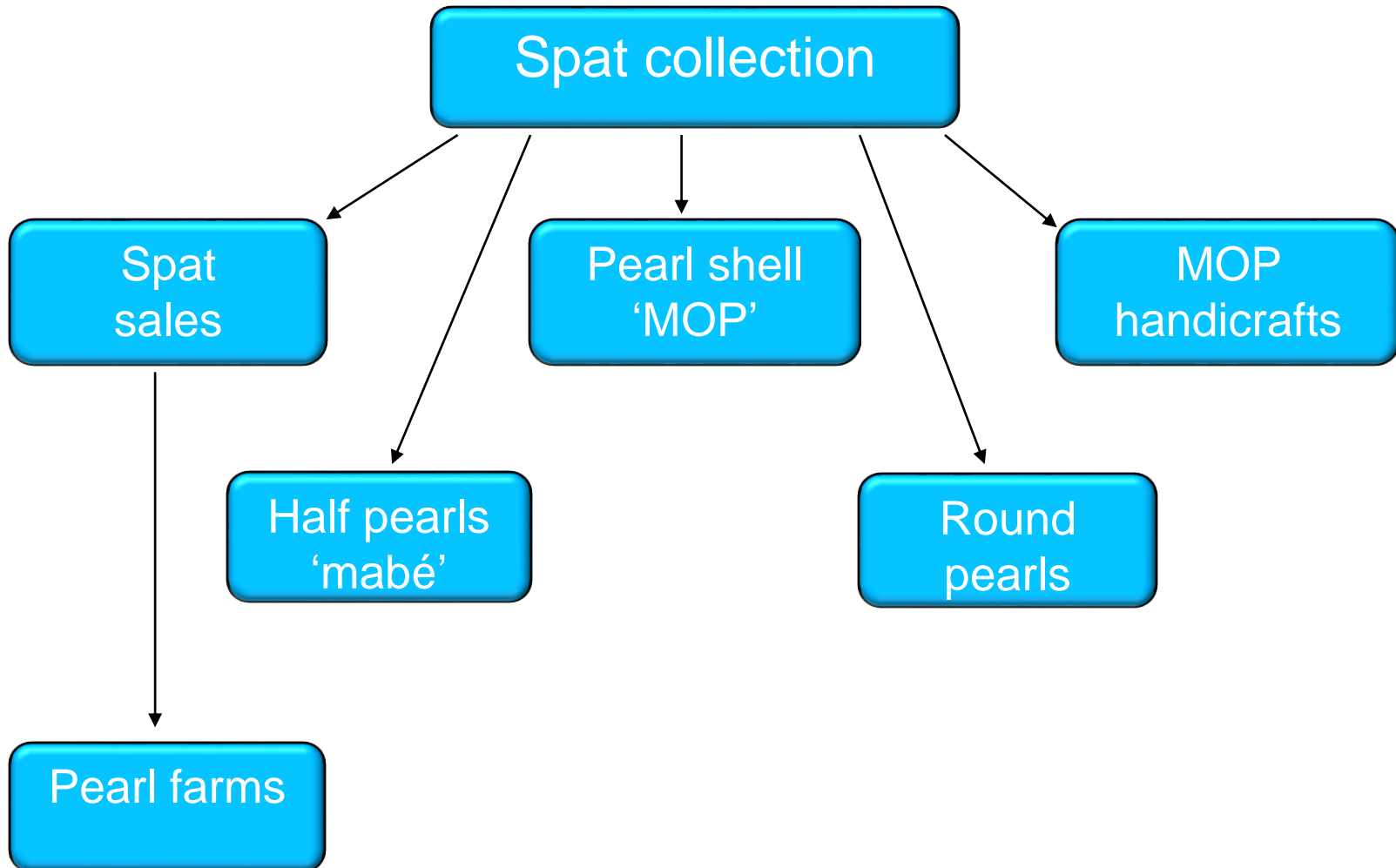
- Oyster supply is no longer a bottleneck to pearl industry production in Fiji and oysters are now readily available to all farmers for the first time
 - Reliable and sustainable oyster supply supports increased production and industry expansion
 - Spat collection program continues – maximise collection at ‘good’ sites and expand to other sites to mitigate potential impacts from cyclones etc.
 - Introduce new communities to pearl farming and associated livelihood opportunities.
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Spat collection



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Industry Impacts:

- Bottleneck in oyster supply to pearl farmers resolved
 - increased production
 - increased industry value
 - revival of struggling pearl farms
 - industry expansion
 - New pearl farms established on the basis of secure oyster supply
 - Namarai, Viti Levu. (first round pearl seeding in 2015)
 - transition of spat collecting communities to pearl farming
 - “*Fiji exports more pearls*” - The Fiji Times, Nov. 28, 2014.
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Spat collection



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Community Impacts:

- Immediate economic benefits from oyster sales:
 - first harvest generated F\$4,000 for Novunieva village and F\$4,200 for Nukavalabu; funded local infrastructure (shop, boats etc)
 - nearby villages have taken up spat collection
- Opportunities for product diversification:
 - Nukavalabu plans to expand into mother-of-pearl and half-pearl production to target the local tourist trade
 - harvested oyster have a value of ~ F\$7 per kg but could produce at least 3 half-pearls worth F\$35-40 each.

- Social benefits:

“Communities working together to collect oyster spat has brought **social cohesion** and resulted in less community disputes. Moreover, buoys marking the long lines have outlined unofficial marine protected areas, so increasing community involvement in caring for our **marine environment**.” (*Joji Vuakaca, Principal Fisheries Officer, Northern Division, Fiji*)

Spat collection



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Future research

- Consolidate and expand oyster supply to the pearl industry supporting industry expansion and diversification
 - Optimise spat collection methods
 - timing: minimise by-catch
 - frequency: is two crops a year possible?
 - husbandry: maximise survival and condition
 - Training new pearl farmers
 - turning spat collectors into pearl farmers
 - training: husbandry, half-pearl production, round pearls
 - the French Polynesian model for industry expansion (>2,500 farms)
 - Industry Development Plan
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Thank You
