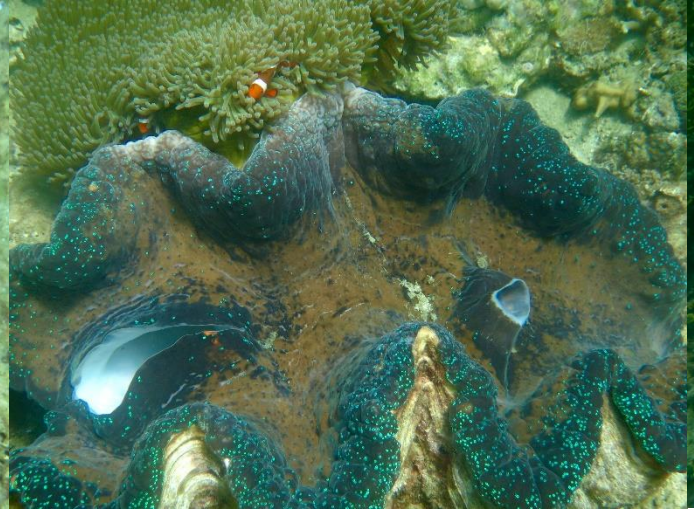

Impact assessment of giant clam research in the Indo-Pacific

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Development Policy Conference 2018

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Overview

- Giant clam context and investments
- Economic, social, environmental impact narratives in the Philippines and Solomon Islands
- Lessons for agricultural impact assessment

Davila et al (2017)

Research investment context

Socio-historical context

- Giant clam populations in decline in the Indo-Pacific
- Culturally valuable food source, 'clam gardens', ornamentals
- Culturally consumed in the region, aquarium and seafood markets

Ecological context

- East Africa and Pacific distribution.
- Listed in 1985 under Appendix II of CITES – no sale of wild clams, but 'farmed' clams allowed

Economic context

- Self-reproducing and feeding species – low effort for mariculture
- Food market in Asia – limited demand
- Niche aquarium market in EU, US, Canada, Australia – *T. maxima and T.crocea species*
- 18-24 months to grow for global trade

Hviding (1993), Othman (2010), Meis et al (2017)

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ACIAR Projects

Project	Budget	Overall aims	Major outputs
FIS/1983/032 The culture of the giant clam for food and restocking of tropical reefs	$1,225,569	Understand growth rate, biology, establish hatcheries, status across Fiji, PNG, Philippines	Extensive scientific research outputs, grow-out techniques
FIS/1987/033 The culture of the giant clam for food and restocking tropical reefs (extension)	$1,835,592	Extension, and establish grow-out community trials, development management strategies	3 comprehensive manuals, small village trials
EFS/1988/023 Economics of giant clam mariculture	$225,000	Understand the economic potential of giant clam mariculture	Literature
FIS/1995/042 Large-scale grow-out trials for giant clams	$100,000	Establish grow-out trials and hatchery in Solomon Islands	Established large hatchery facility, 26 grow out trials

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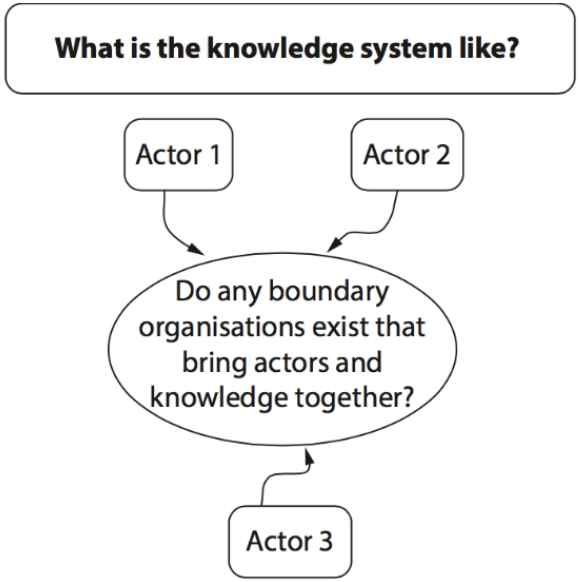
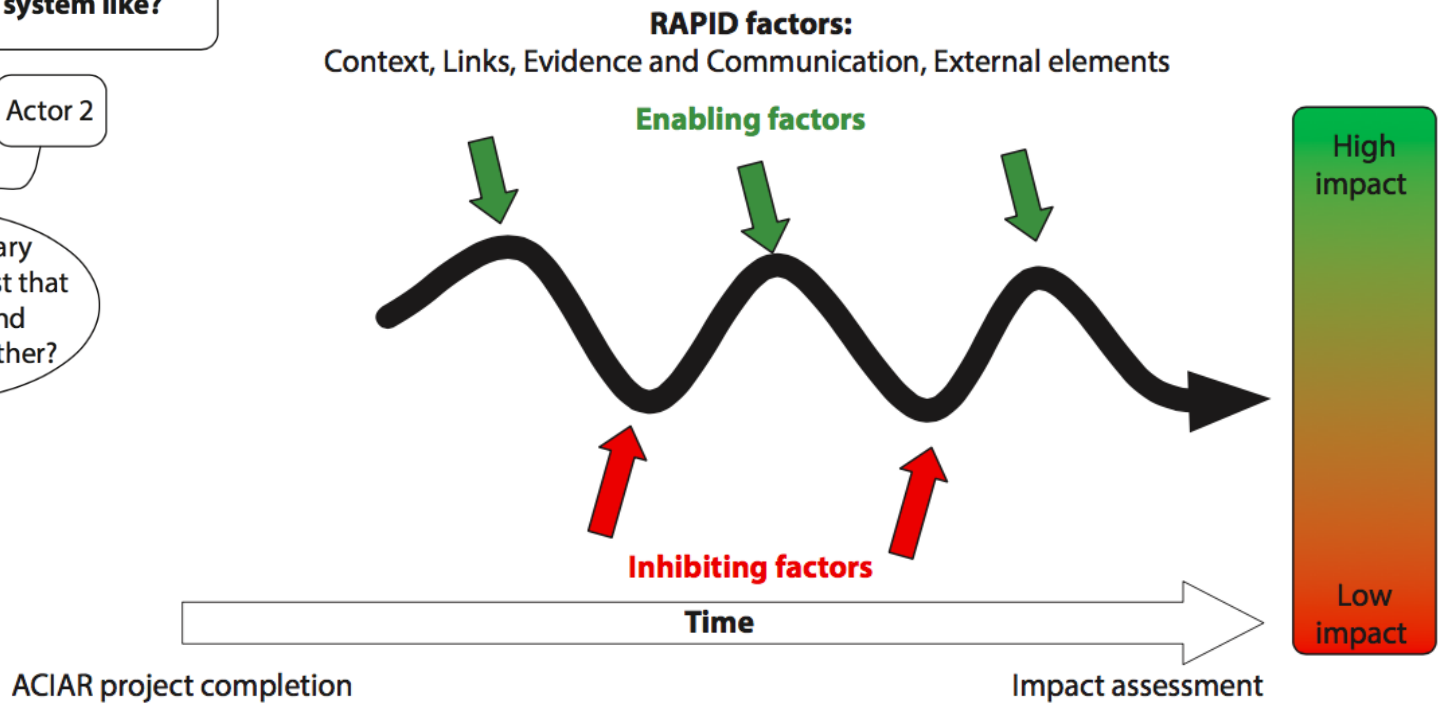
Knowledge systems and RAPID framework





Identify salience, credibility, and legitimacy of knowledge products in a changing development context

See Davila et al (2016), also Clark et al (2016), ODI (2001)

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Data collection and field trips (2016-2017)

- Regional impacts:
  - 8 interviews, publication impact tracking
- Philippines impacts:
  - 11 field interviews, site and laboratory tours, student output and publication tracking
- Solomon Islands impacts:
  - 13 field interviews, phone interviews, publication tracking

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Economic impacts

Solomon Islands

- Small profits during project – $1467 per year from aquarium sales
- Transport costs very high
- 26 Villages did not sustain the use of technologies
- Key project champions still employed as experts in mariculture
- Transfer of skills to World Fish, JICA, EU

The Philippines

- Minimal – ban in 1995 for both wild and farmed
- Little extension to villages
- In Late 2000s, eco-tourism ventures began to emerge – all sourcing giant clams from ACIAR funded facilities
- Marine Laboratory sale of giant clams

Overall impact: Very small. Indirect impact through skills and knowledge transfer

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Environmental impacts

Solomon Islands

- Unclear restocking records – no records of expected 10% restocking. Environmental project design was weak

The Philippines

- 40,000+ giant clams restocked throughout the country
- 500 giant clams restocked per year, on average
- Marine protected areas locally developed to 'protect' clams, attract tourists
- Advocacy and awareness of conservation efforts – Local Government Units play a critical role
- Very little recorded restocking data, hard to maintain after project completion

Overall impact: Solomon Islands hard to determine as no baseline and data. Philippines arguably positive, as restocking efforts have been sustained

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Social impacts

Solomon Islands

- ICLARM (now World Fish) staff trained, still employed in a range of mariculture and business sectors
- Impact hindered by the damage to the hatchery in early 2000s.
- Income only an addition to standard livelihood
- No hatchery meant collapse of industry
- Local champions remain
- Methods developed taken up by other Pacific nations

The Philippines

- Marine Science Institute (University of the Philippines) and Siliman University Marine Laboratory still exist
- NGO, business, governments using clams for various purposes – legacy and knowledge remain

Overall impact: Capacity building in the Philippines very high. In the Solomon Islands it was very targeted. Technical and scientific knowledge highly credible and salient

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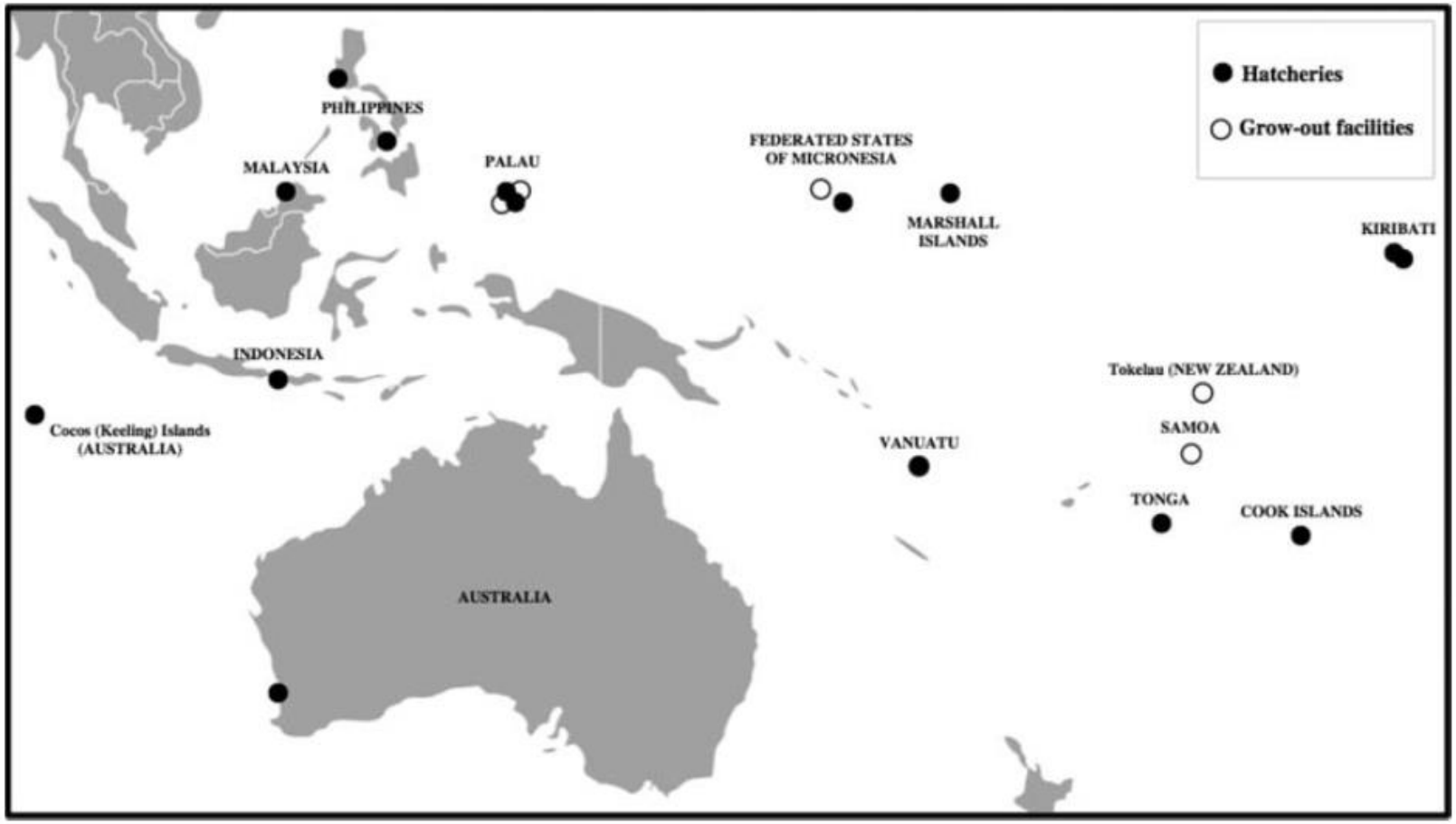
Regional legacy



Active hatcheries and grow-out facilities as of 2016 (Mies et al 2017)

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Overall impacts

- Knowledge system established through ACIAR technical outputs – core giant clam knowledge exists thanks to ACIAR
- Socio-economic benefits not realised due to a mix of political, policy, market contextual changes
- Solomon Island direct economic impact low, but individual capacity increased
- Philippines had unintended economic and governance impacts through eco-tourism, MPAs

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Conclusion: agricultural impact assessments

- Traditional return on investment approaches could label projects ‘failures’ – different frameworks enable broader impacts to be captured
- Knowledge, capacity contributions hard to quantify, but rigorous qualitative methods provide impact narratives
- ACIAR instrumental in capacity building and enabling knowledge systems to grow
- Environmental monitoring and impacts a challenge – baselines and records hard to maintain
- Training manuals and knowledge products can have long-lasting impacts – other ACIAR projects also do this

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