

Interdisciplinary research underpinning marine management

Iloilo 28th Nov 2018

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The importance of interdisciplinary research due to the complexities of marine management

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Lesson (to be) learned

Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or filed of research practice.

...The rationality behind the necessity of an interdisciplinary approach to problems is simply that problems in general are not ordered according to the scientific disciplines...

(D. Barković 2010:952)





Table 1 – Characteristics of multidisciplinary, interdisciplinary, and transdisciplinary research in environment and human health.					
	Participants/discipline	Problem definition	Research style	Presentation of findings	
Multidisciplinary	'I'wo or more disciplines	Same question but different paradigm <u>OR</u> different but related questions	"Parallel play" Combines rather than integrates different expertises	Separate publications by participants from each discipline	
Interdisciplinary	Two or more distinct academic fields	Described/defined in language of at least two fields, using multiple models or intersecting models	Drawn from more than one, with multiple data sources and varying analysis of same data, Some integration demonstrated	Shared publications, with language intelligible to all involved fields	
Transdisciplinary	Two or more distinct academic fields	Stated in new language or theory that is broader than any one discipline	Fully synthesized methods and ideas, which may result in creation of new conceptual frameworks	Shared publications, probably using at least some new language developed for translation across traditional lines	

Adapted from Aboelela et al. (2007).

Source: Phoenix et al 2012





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Geographical context

Marine management for whose benefits?

Ecosystem services

Stakeholders

- National, state, district, local levels, international
- Government agencies, private sector, communities, industry, universities
- Political regime, rules and regulations, cultural practice and mainstream influence
- Funding, enforcement, implementation, scientific research, outreach





- Malaysia has a total coastline of 4,675 km (Peninsular Malaysia-2,068 km, East Malaysia- 2,607 km)
- History of marine park establishment in Malaysia

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	History of Establishment	IYOR PRESS STATEMENT More
1	In the early 1980s, it was realized that marine fisheries had experienced a decline. In order to enhance fisheries resources, it was deemed essential that coral reef areas where various commercial fish species live, breed, feed and grow, need to be protected. Coral reef areas are one of the critical habitats because they are exposed to various stressors, which occur naturally or are caused by human	Department Of Marine Park Malaysia E-Library More
1	activities. In view of the situation, in 1983, the Ex-Prime Minister of Malaysia, Rt. Hon. Tun Dr. Manathir Mohammad directed the Ministry of Agriculture (Department of Fisheries) to establish Marine Parks in the country.	Kes Tangkapan Mengikut Seksyen Kesalahan Tahun 2011 hingga 2017 More
Saud	The setting up of Marine Parks is provided for under Part 41 through 45 of the Fisheries Act, 1985. The principal goal of establishing Marine Parks in the country is to protect, conserve and manage in perpetuity representative marine ecosystems of significance, particularly coal reds and their associated flora and fauna, so that they remain undamaged for future generations. In addition, our	Department of Marine Park Malaysia Guidelines More
	aim is to inculcate public understanding, appreciation and enjoyment of our marine heritage.	Galeri Kejayaan KATS More
2	The Establishment of Marine Parks Malaysia Order 1994 firmly entrenched the 40 islands as protected area, consisting of the Pulau Redang Archipelago and Pulau Perlentian Archipelago off Terengganu waters, Pulau Payar Archipelago, Kedah, Pulau Tioman Archipelago, Pahang, Pulau Tinggi Archipelago, Johor and the Federal Terntory of Labuan Archipelago. According to its First Schedule,	Keputusan Tender Dan SebutHarga More
the Sol	"the limit of any area or part of an area established as a marine park shall be at a distance of two nautical miles seaward from the outermost points of the islands specified". Below is a brief history of the step by step establishment of Marine Parks in Malaysia. Stated in also the workshops and projects that the Marine Park Scitchin has corasined to improve the managements of our Marine Parks.	Notifications: Fisheries Act 1985 - Establishment of Marine Parks Malaysia Order (Amendment) 2012 On 15 August 2012 the Department of
	1983 1985 1987 1988 1989 1990 1991 1993 1994 1996 1998 1999 2000 2002 2003 2004 2005 2006 2007	Fisheries Malaysia has amended the name of the Marine Park islands using the official n



- High biodiversity (252 species of hard coral and 350 species of fishes)
- Kudat-Banggi Priority Conservation area
- Sulu-Sulawesi Marine Ecoregion
- Only water gazetted





Protecting such a large area requires a collaborative approach, explains Jomitol. "It is a special park because this is the first park that's [been designated] multi-use. [There are] more than 80,000 people living on the coastline dependent on the marine resources so we cannot simply close the park. We must take into consideration the livelihoods of these people."

The multi-use model breaks the park into zones to restrict fishing activity and allow reef regeneration; some are for community fishing, others commercial, and some are designated as completely off limits.

But introducing limits on fishing for communities of subsistence fishermen creates problems if the objectives are not fully understood. Multiple sources confirm the marine park is still a source of contention and estimate that around half the population are for, half against, splitting some communities down the middle.

Despite these successes, the logistics of informing and correcting misconceptions across 1 million hectares and over 80,000 people present a challenge to the WWF.

British owner of eco-guesthouse Tampat Do Aman, Howard Stanton, thinks it's an information issue, "Different groups as a whole could do a lot more to listen and explain. They need to get onboard because, if they say no, it's their back garden. It's just gonna end up a right mess again."

Stanton empathizes with local villagers who don't understand why their fishing is being restricted. "It's their livelihood, that's their food. You tell a local fella, 'Your families have been fishing in these local areas for the last 200-odd years and now [you] can't go there. [They'll be] frightened of the authoritarianism, of what could happen. You've got to feed your kids."

Source: Ben Blackledge, July 17, 2018, The Diplomat





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Sciences Anthropology Environmental economics Fisheries Marine ecology Natural resource governance Public health Tourism Applied geography







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Approach to research Different languages of communication Understanding and respecting each other

It takes (longer) time

It is often said that personality can be a more significant factor than discipline base and interdisciplinary collaborations need to be based on trust and knowledge of collaborating partners. (D. Barković 2010: 958)

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Building capacity for sustainable interactions with marine ecosystems for the benefit of the health, well-being, food security and livelihoods of coastal communities in East and Southeast Asia.

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