

Co-management approaches and incentives improve management effectiveness in the Karimunjawa National Park, Indonesia



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ABSTRACT

Karimunjawa National Park (KNP) was among the first maritime areas recognized in Indonesia as being important for the conservation of marine biodiversity. Economic incentives in the KNP aim to decrease community dependency on wild-captured natural resources and achieve biodiversity and development objectives. Various participatory mechanisms facilitate community involvement in governance, whilst other incentives promoting awareness and support for fishery regulations are being delivered. Monitoring programs have demonstrated some ecological improvements and reductions in destructive fishing in the park over the past five years. The findings demonstrate that MPA policies and regulations can improve the social well-being and political power of fishing communities, particularly when appropriate economic, legal and participatory incentives are provided.

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1. Introduction

Karimunjawa National Park (KNP) was among the first maritime areas recognized in Indonesia as being important for the conservation of marine biodiversity. It was formally declared a Strict Natural Reserve in April 9, 1986 by the Minister of Forestry (PHKA Decree no. 123/Kpts-II/1986), and has since been declared a priority area for marine biodiversity conservation in Southeast Asia. In 1988, the Minister of Forestry declared the area a National Park and, in 1990, the park zonation plan was released. On February 22, 1999, the Karimunjawa archipelago was declared as the Karimunjawa Marine National Park, now referred to as Karimunjawa National Park under the Ministry of Forestry and Plantation Decree no. 78/kpts-II/1999. In 2001, all marine waters of Karimunjawa National Park were designated as a marine conservation area by the Ministry of Forestry Decree no.74/Kpts-II/2001. The park includes both marine and terrestrial components, including 1101 km² of sea, 13 km² of tropical lowland forest and 3 km² of mangrove forest (Fig. 1). The park includes a total of 27 islands with a resident population of around 9000, concentrated on the islands of Karimunjawa, Kemujan, Parang and Nyamuk. The islands were first zoned into four zones (i.e. core zone, protection zone, utilization zones and buffer zones) under Director General of PHKA Decree no. 127/Kpts/DJ-VI/1989. From 2003–2005 the Karimunjawa National Park Authority (KNPA), Wildlife Conservation Society (WCS), Taka

(local NGO) and the University Diponegoro conducted a spatial planning and stakeholder consultation process to revise the zoning system. The new zoning system was legislated on June 30, 2005 under the Director General of PHKA, Decree no. 79/IV/Set-3/2005. This zoning system consists of eight zones (i.e. core zone, protection zone, tourism zone, aquaculture zone, rehabilitation zone, religious and historical zone, residential zone and utilization of traditional fisheries zone). Subsequently as part of the governments remit to rezone the park every 5 years, the park was re-zoned in 2012 under Director General of PHKA, Decree no. 28/IV/Set/2012 on 6 March 2012.

The Ministry of Forestry, which retains responsibility for all of Indonesia's national parks, remains a highly centralized institution within the state government structure. However, decentralization reform and ineffective management by the KNPA since the park was established in 1999 have resulted in an increased emphasis on community involvement and participation in management activities. The need for decentralization and a more participatory approach in Indonesian coastal zone management emerged more than a decade ago [1]. These new decentralization laws provide an opportunity to recognize and institutionalize community-based management and co-management into the local and national systems of governance [2]. The laws also promote a system of shared responsibility among the great range of stakeholders who have a vested interest in the improved management of marine and coastal resources in an archipelagic nation as large and as diverse as Indonesia. In addition, the laws recognize that local community roles must be promoted in the management of local resources.

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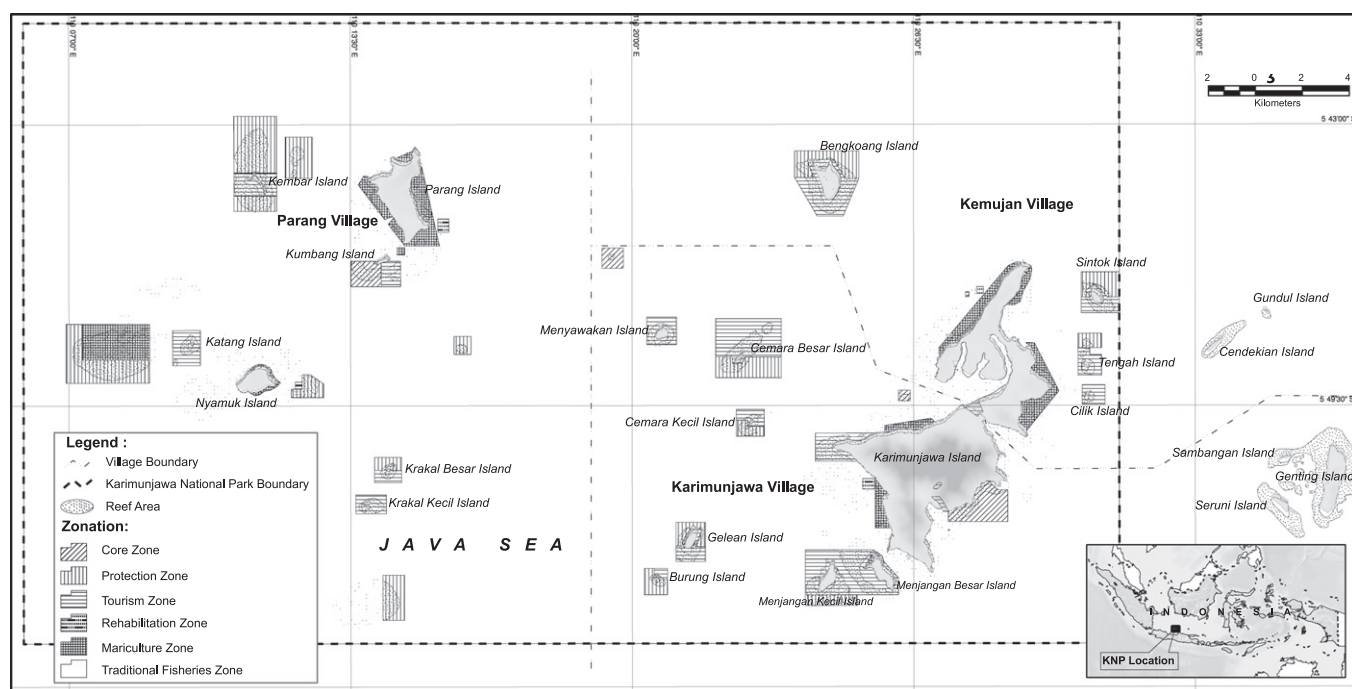


Fig. 1. Location map and 2012 zoning plan for the Karimunjawa National Park.

Table 1

Regulations governing activities in the KNP. Key: ✓: permitted; [✓]: permitted only in emergency; x: forbidden; p: prior permit required; n/s: not specified; n/a: not applicable.

	Core zone	Protection zone (marine)	Protection zone (terrestrial)	Utilization zone (terrestrial)	Tourism zone	Traditional use zone	Mariculture use zone	Religious and historical zone	Rehabilitation zone	Residential zone
Area covered (ha)	445	2600	1452	56	2733	100,327	1371	1	68	2572
Fishing (all techniques)	x	x	n/a	n/a	p	✓	x	n/a	✓	n/a
Research	p	p	p	n/a	p	p	p	n/a	p	n/s
Boat transit only	[✓]	✓	n/a	n/a	✓	✓	✓	n/a	✓	n/a
Boat transit and anchoring	[✓]	✓	n/a	n/a	✓	✓	✓	n/a	✓	n/a
Tourism	x	x	x	n/a	✓	✓	✓	n/a	✓	n/s
Restoration and rehabilitation	x	x	x	n/a	✓	✓	✓	n/a	✓	n/s
Education	p	p	p	n/a	p	✓	✓	n/a	✓	n/s
Traditional and ritual use	p	p	p	n/a	p	✓	✓	✓	✓	n/s

Community involvement and participation are widely acknowledged in the literature as providing opportunities for improving natural resource management [3–5]. From 2003 to 2005, the KNP conducted a spatial planning process that resulted in changes in the zones and regulations inside the park. The planning process involved consultation with a wide range of stakeholder groups and sought inputs from communities into the design and adoption of rules that impact marine resource use. Since 2005, communities have been more involved in park management including surveillance, monitoring and involvement in implementing management strategies to help reduce destructive fishing. A positive outcome of improved community participation has been the stabilization of reef fish biomass in some areas since new zoning regulations have been in place [6].

2. Objectives

The revised 25 year management plan produced in 2005 defined a new vision for the park which involves the preservation of biological

diversity and ecosystem types for the enhancement of public welfare and quality of life through sustainable use principles and economic development strategies. These goals and objectives are in accordance with national regulations relating to marine conservation, fisheries and small island development. The change from the 1989 zoning plan, which for the most part prioritized protection of biodiversity, reflects the need for regional tiers of government to achieve greater financial self-sufficiency in the current era of decentralization within Indonesia [4]. Key habitats are identified as priorities in the management plan comprising coral reefs, seagrass meadows, fish spawning aggregation sites, mangroves, cetaceans, water bird nesting areas and turtle nesting sites, together with undefined economically valuable marine species. Reference is made to obligations associated with the Convention on Biological Diversity and domestic Acts, foremost amongst which is Act 5/1990 relating to the conservation of natural resources and protected area management. The current zoning plan and associated regulations are illustrated in Fig. 1 and Table 1. These are used to derive management objectives consisting of effective zone management and monitoring of reefs, seagrass meadows, mangroves and fish spawning aggregation sites, together with engaging in public

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