Integrated Coastal and Marine Management Enters a New Era in Indonesia

Rokhmin Dahuri and Ian M. Dutton

Introduction

In the first comprehensive overview of Indonesia's marine resources, Tomascik *et al.* (1997:1167) noted that... *"one of the many challenges facing Indonesia today is the reconciliation of development objectives and conservation aims in the marine and coastal sector"*. Those challenges are even more cogent as Indonesia emerges from the economic depression, social and political turmoil that has marked the transition from the New Order Government to the "reformasi" era since 1998. As van Klinken (1999) and other commentators have observed, development of a civil society as well as broader economic recovery in Indonesia requires the development of more equitable, transparent and sustainable approaches to the utilisation of natural resources. Coastal and marine resources are considered to be of increasingly strategic significance in those processes.

Integrated coastal and marine management (ICMM) is obviously of paramount importance in an archipelagic nation like Indonesia where more than 75% of the national area is sea and the 24% that is land is fragmented amongst more than 17,000 islands. The 81,000 kilometre shoreline is the world's second longest (after Canada), and most accessible. Coastal and marine industries such as oil and gas production, transportation, fisheries and tourism account for a quarter of Gross Domestic Product and employ more than 15% of Indonesia's workforce. Some 140 million Indonesians live within 60 kilometres of the coast; many of these within the large coastal cities that occupy a predominant position in the national economy.

Given that Indonesia has such a diverse marine estate, well-established cultural traditions of marine resources exploitation and a significant economic dependence on coastal and marine resources, it is surprising that it has not previously established a systematic coastal and marine governance regime. Despite an increasing level of public interest and policy effort directed towards marine and coastal management since the late 1980s, there are very few "on the ground" examples of ICMM. Of equal concern is the lack of integration of development plans and regulatory systems between sectors and tiers of government and various sectors of industry. In many areas and sectors, industry, communities and the different arms of government compete with each other, for control of the same, often limited, resources. Inevitably this leads to a decline in environmental quality and reduced quality of life and income for local communities.

This paper provides an overview of how the various levels and sectors of government as well as other stakeholder groups involved in ICMM are addressing these challenges. Particular attention is given to the pivotal role that will be played by the newly created Ministry of Marine Exploration and Fisheries, the importance of decentralisation of management authority to local administrations and related need for clarification/streamlining of management authority, and the need for greater

stakeholder participation in management. Examples are provided of some integrated coastal management (ICM) models under development that offer promise in promoting sustainable use of resources. Throughout this discussion, the interpretation of ICM is consistent with the definition of GESAMP (1996) and the expanded view of marine/ocean management (ICMM) follows the concepts outlined by Cicin-Sain and Knecht (1998).

Evolution of ICMM in Indonesia

In October 1999, when newly elected President Abdurahman Wahid announced his new cabinet, one of his most radical innovations was to establish a Ministry specifically concerned with the definition and development of marine and coastal resources, particularly fisheries. This historic act marked a true watershed in the history of this archipelagic nation and symbolises an increased level of recognition of the social, economic and ecological significance of Indonesia's seas.

To understand the full moment of this decision, it is necessary to understand the geo-political context and economic development of the archipelago, particularly in the 30 years of "New Order" government that preceded President Wahid's election. During the first 25 year development plan (PJP I – 1969-1993) and related five year development plans (Repelita), national planning policy placed considerable emphasis on terrestrial development, particularly in Java and Sumatera (see Figure 1). Not until the late 1980s was strategic attention given to coastal and marine resources (CIDA, 1987). For example, the 1988 State Policy Guidelines (BAPPENAS, 1988: 13g) noted that ... *"it is necessary to improve the management of marine areas so as to increase utilization and maintain sustainability*".

This policy and a related "Action Plan" (BAPPENAS/CIDA, 1987) stimulated only modest ICMM efforts, mostly via bi-lateral projects such as the Environmental Management Development in Indonesia (EMDI) program of CIDA. They did, however, represent an important first step in the subsequent formal recognition of the importance of coastal and marine resources management. Concurrently with these initiatives, an array of new legislation on living resources management, spatial planning and environmental impact assessment was enacted (Sloan and Sughandy, 1994; Purwaka, 1995). As Tomascik *et al*. (1997: 1172) observed, somewhat prophetically ... *"Indonesia has in place one of the most formidable legislative frameworks in the world…the urgent need is to begin the implementation of existing policies and regulations"*.

In the first Repelita of PJP II (1993-1998), four main goals for coastal and marine resources development were established (Dahuri *et al*., 1999):
(1) support for expanded coastal and marine enterprises throughout Indonesia, especially in the less developed Eastern regions;
(2) support for offshore industries, especially oil and gas production;
(3) strengthening of national sovereignty and jurisdiction by mapping of continental shelves and the EEZ; and
(4) establishment of a coastal and marine geographic information network (MGIS).

Attainment of these goals was proposed via a dedicated marine unit within the national development planning board (BAPPENAS), via establishment of national

strategies (e.g. the Agenda 21 Strategy for Indonesia – see Rais *et al*., 1997) and via a series of projects intended to build knowledge of coastal and marine resources and institutional capacity for their management. These include:

(a) the ADB-funded Marine Resources Evaluation and Planning (MREP) project which was implemented in 10 Provinces between 1993 and 1998 (MREP Secretariat);
(b) the multilateral Coral Reef Rehabilitation and Management Program (COREMAP) that commenced implementation in 1998 after a lengthy design process (COREMAP Secretariat, 1999) and is to be implemented in three phases between 1998 and 2013;
(c) the marine conservation programs of non governmental organisations such as the World Wide Fund for Nature, The Nature Conservancy, Asian Wetlands Bureau/Wetlands International, Telapak/Jaring Pela and Conservation International;
(d) bilateral aid programs such as the USAID-supported coastal resources management project, Proyek Pesisir/CRMP ***(see Feature Box),*** Joint Indonesian German Marine Ecosystems and Resources Program (JIGMER, 1999), the Norwegian Sea Watch project and the Canadian Collaborative Environmental Project in Indonesia (CEPI); and
(e) collaborative research and education programs such as the Netherlands-Indonesian Buginesia (Noor and Hoeksma, 1993) and Teluk Banten programs (Tjallingii, 1999), the ASEAN Living Coastal Resources program supported by AusAID and the Man and the Biosphere program of UNESCO, etc.

Full details of investment in Indonesia coastal and marine management projects are difficult to obtain due to incomplete reporting. However, Sofa (in press) has recently undertaken an evaluation of coastal management and related projects between 1987 and 1998. In that study she estimated that some $400 million has been spent during that period. It is also noted (with concern) that relatively few of these initiatives continue once direct funding via central government agencies ceases and that very few of these projects directly impact the quality of life of coastal communities or quality of coastal ecosystems.

Feature Box:

Developing Good Practices

The USAID Coastal Resources Management Project, Proyek Pesisir is testing a range of ICM approaches in Indonesia that will result in the development of a set of "good practices" for ICM. Consistent with the project motto "from local action to national practice", and with national needs in the reformasi era, various ICM approaches are being developed in three provinces (see Figure 1) and linked with national policy reforms (see www.indomarine.or.id).

In **North Sulawesi** the emphasis is on development of community-based approaches. In 1997, a coastal extension program was initiated in four villages (Crawford *et al*., 1998). Indonesia's first community-based marine sanctuary was established in the village of Blongko and management plans have recently been approved to guide village development and resource use.

In **Lampung**, Indonesia's first Provincial Coastal Atlas was completed in July 1999. With input from some 300 stakeholders and more than 60 organisations, the Atlas will be a key resource for development planning and forms the foundation of a Provincial

Coastal Strategic Plan now in preparation (Wiryawan and Marsden, 1999).
In **East Kalimantan**, an integrated management plan for Balikpapan bay and watershed (a first for Indonesia) is in preparation and engages local government, academic, industry and community groups in a participatory planning process (Proyek Pesisir, 1999).

Figure 1: Location of Proyek Pesisir Field Programs in Indonesia

Key Issues for Management

ICMM efforts in Indonesia typically must address six inter-related and often overlapping issues:

(a) Lack of knowledge of coastal and marine resources and processes – despite the seeming wealth of knowledge about Indonesia's seas in the impressive synthesis by Tomascik *et al*. (1997), the recent discovery of an Indonesian coelacanth (Erdmann and Moosa, 1999) revealed that current knowledge about the nature, distribution and significance of most marine and coastal resources is extremely limited. Of equal concern is the lack of a sustained capacity to map resources, to monitor even basic changes in resource condition (e.g. sea surface temperature) or

to fully assess hazards that are of periodic significance (e.g. tsunamis). One of the key tasks of the Ministry of Marine Exploration and Fisheries will be to improve linkages between marine research and technology agencies and marine resource management agencies Kusumaatmadja (1999).

(b) Undervaluation of coastal and marine resources – Cesar (1996) and, more recently, Pet-Soede *et al*. (1999) have clearly demonstrated that undervaluation of coral reefs and associated coastal ecosystems has been a prime factor in their ultimate over exploitation and degradation. Dutton (1997) argued that until these use and non use values are properly accounted for in the development process, then it is likely that resource production will be sub-optimal, non sustainable and ultimately socially destructive, as was demonstrated in a case study of the evolution of the development of North Java inshore fisheries in the 1960s (Yowono, 1998).

(c) Lack of empowerment of coastal communities and marine resource users – despite the considerable efforts of government to redress perceived imbalances in income (e.g. in the mid 1990s a poverty alleviation program directed towards coastal villages was initiated – see Dahuri, 1996) and various community enterprise and social safety net initiatives, coastal communities lack equity in resource exploitation. Whether due to lack of infrastructure, capital, technology, skill or because of global factors (e.g. market fluctuations), or because of inequities induced by particular development paradigms (e.g. the so-called 'trickle down' effect of centralised investment strategies), it is clear that many Indonesian coastal communities have become marginalised or disempowered. Poverty alleviation, income generation from alternative (usually to fisheries) livelihoods and the development of improved economic resilience are thus key objectives of many coastal development initiatives. However, as Crawford *et al*. (1999), point out, there are significant interregional variations in income and community development status that mitigate against simple solutions - what works in one location may not be transferable elsewhere. A key challenge for ICMM policy makers thus remains to better understand the typology of situations in which particular practices/interventions are most effective.

(d) Lack of clarity regarding legal authority and planning frameworks for ICMM – despite the existence of a vast array of legislation pertaining to coastal and marine resources management (Purwaka, 1995) and the recent establishment of a multi-tiered planning framework for ICMM under the MREP project (Hunt *et al*., 1999), great confusion exists with regard to spatial planning authority in intertidal and offshore areas and most governance processes lack transparency or accountability. In recognition of the need for clarification and decentralisation of authority, in April, 1999 new regional government and fiscal allocation laws (No 22/99 and No 25/99 respectively) were enacted. They provide, *inter alia*, for the specific delegation of power to regulate access to, and use of, natural resources by Provincial and local administrations (Dutton, 1999). Provinces have been granted jurisdiction of Territorial Seas (out to 12 nautical miles) and local governments jurisdiction for up to four nautical miles. These laws create unprecedented opportunity for locally agreed and enforceable ICMM schemes. Despite considerable public debate and academic scrutiny (e.g., Alm and Bahl, 1999; Brown, 1999), regulations for implementation of these laws are still in draft and

likely to be further adjusted as programs and proposals emerge from the new Cabinet in 2000.

(e) Lack of institutional capacity to undertake ICMM – much of the national investment in ICMM to date has ostensibly been for the purpose of developing institutional and professional capacity. For example, the MREP program provided some 2,300 person months of in country training and 275 person months of international training (Dahuri *et al*., 1999). The Indonesian Directory of Coastal Managers (Moermanto, 1998) lists some 1,200 professionals in government, industry academia and non-government organisations engaged in ICMM-related activities. Masters level post graduate training courses in ICM have now been established in two universities (IPB and UNDIP) and there are frequent formal and informal short courses in fields related to ICMM – for example, Proyek Pesisir has trained more than 9,100 persons during some 150 training events conducted since 1997. In spite of these efforts and selective institutional development initiatives (e.g. Cobb, 1998), there remain significant skills gaps, a lack of experienced staff to implement programs and generally ineffective deployment of existing staff. These problems must be addressed systematically in the implementation of new ICMM programs. Importantly, as demonstrated by the experience of training of village residents by Proyek Pesisir, (Fraser *et al*., 1998), there seems to be much value in broadening stakeholder participation in ICMM programs to better utilise the knowledge and local capacity of resource users.

(f) Lack of integration between initiatives – because of the historically sectoral and project-by-project approach to ICMM in Indonesia until recently, there are very few programs sustained at the local level in Indonesia and few linkages between initiatives. Indeed, one of the most striking features of the evolution of ICMM has been the apparent lack of co-ordination and co-operation between programs, resulting in the loss of 'institutional memory' and the value adding that ideally occurs when programs cross fertilise. Various projects now place a deliberate emphasis on learning concurrently with implementation, to value failure as well as success and thus build locally workable approaches to ICMM (see, for example, BCN, 1999). In Proyek Pesisir, a learning team has been established within the Centre for Coastal and Marine Resources Studies at IPB. After developing methods and experience (see, for example, Sondita *et al*., 1999), it is expected that the team will engage with other ICM initiatives to develop a broader understanding of what works, what fails and why in the Indonesian context. It is expected also that with an increased premium on the acquisition and application of loan funds for development/program initiatives in marine and coastal management, there will be a much greater incentive for agencies involved to share experience by working collaboratively (Kusumaatmadja, 1999).

The Emerging Role of Government

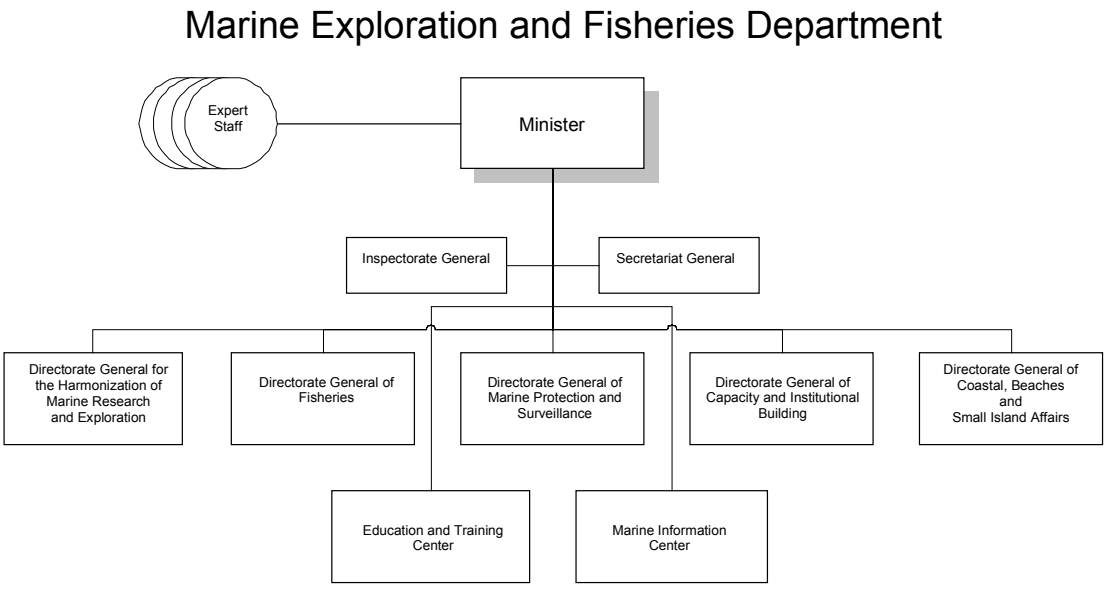
Until the establishment of the Ministry of Marine Exploration and Fisheries, coastal and marine management responsibilities were divided between more than 12 national Ministries. An earlier attempt to co-ordinate these activities via a National Maritime Council (DKN) established in 1995 proved unsuccessful; the DKN was disbanded in 1999.

The absence of a "bureaucratic home" for ICMM retarded the development of marine resource management programs. Initiatives such as MREP were undertaken on a sectoral basis because of the lack of capacity for co-ordination between implementers (MREP Secretariat, 1998). Equally importantly, from an implementation perspective, there were:

- few resources outside project funds to support ICMM,
- poorly developed vertical linkages between the program goals of key central policy institutions and Provincial implementing agencies, and
- inadequate understanding of the potential for partnering with communities, industries and other coastal and marine resource users (Dutton *et al*., 1997).

During the initial period of consultation regarding the role and potential functions of the new Ministry, many ideas and inputs have been received from all key stakeholder groups. These inputs are reflected in the proposed structure of the Ministry (see Figure 2) and in the relationships that will be maintained between the Ministry, other government agencies and levels of government and with private sector and non government agencies. A key philosophy that underpins the development of both the Ministry and its revamped national ICMM programs is the importance of a service orientation. This means that the Ministry will co-ordinate its activities carefully with other agencies and, in so doing, seek to maximise the efficiency with which public sector services and programs are delivered. Importantly it means also that the key roles played by non-government organisations, communities and the private sector in coastal and marine resource management will be respected and encouraged. This marks a significant departure from previous strategies that placed an undue emphasis on the role of government as "resource manager".

Figure 2: Structure of Department of Marine Exploration and Fisheries



Towards the Future

Marine and coastal management in Indonesia has entered a new era. While free from the "top-down" paradigms of the New Order government, a great many challenges must be addressed if ICMM arrangements that stand the three way test of social, ecological and economical sustainability are to be implemented.

The development of an indigenous capacity for truly integrated coastal and marine and management will be a process of trial and error and likely to take some decades to fully establish throughout this vast archipelago. Popular demand for reform of natural resources governance, new laws on decentralisation of management authority, the establishment of institutions with capacity and mandate to undertake ICMM and the increased engagement of coastal resource users in decision making forums augur well for ICMM in the short term.

Bilateral and multilateral support for ICMM in Indonesia will be essential in the short to medium term to support constituency and capacity building. Ultimately, however, it will be the people of Indonesia who must sustain ICMM efforts in the long term. To achieve this will require the Indonesian public to be better educated about the many values of coastal and marine resources and their formal empowerment to be full partners in coastal and marine development.

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About the Authors

Dr Rokhmin Dahuri is the Director General for Coastal and Small Island Affairs in the Ministry of Marine Exploration and Fisheries and a former Vice Rector and Director of the Centre for Coastal and Marine Resources Studies at IPB

Ian Dutton is the Asia Co-ordinator of the Coastal Resources Center of the University of Rhode Island and leads Proyek Pesisir in Indonesia. Ian will provide follow up contact for readers via email (crmp@cbn.net.id).