

1 INDONESIA AS AN ARCHIPELAGO: MANAGING ISLANDS, MANAGING THE SEAS

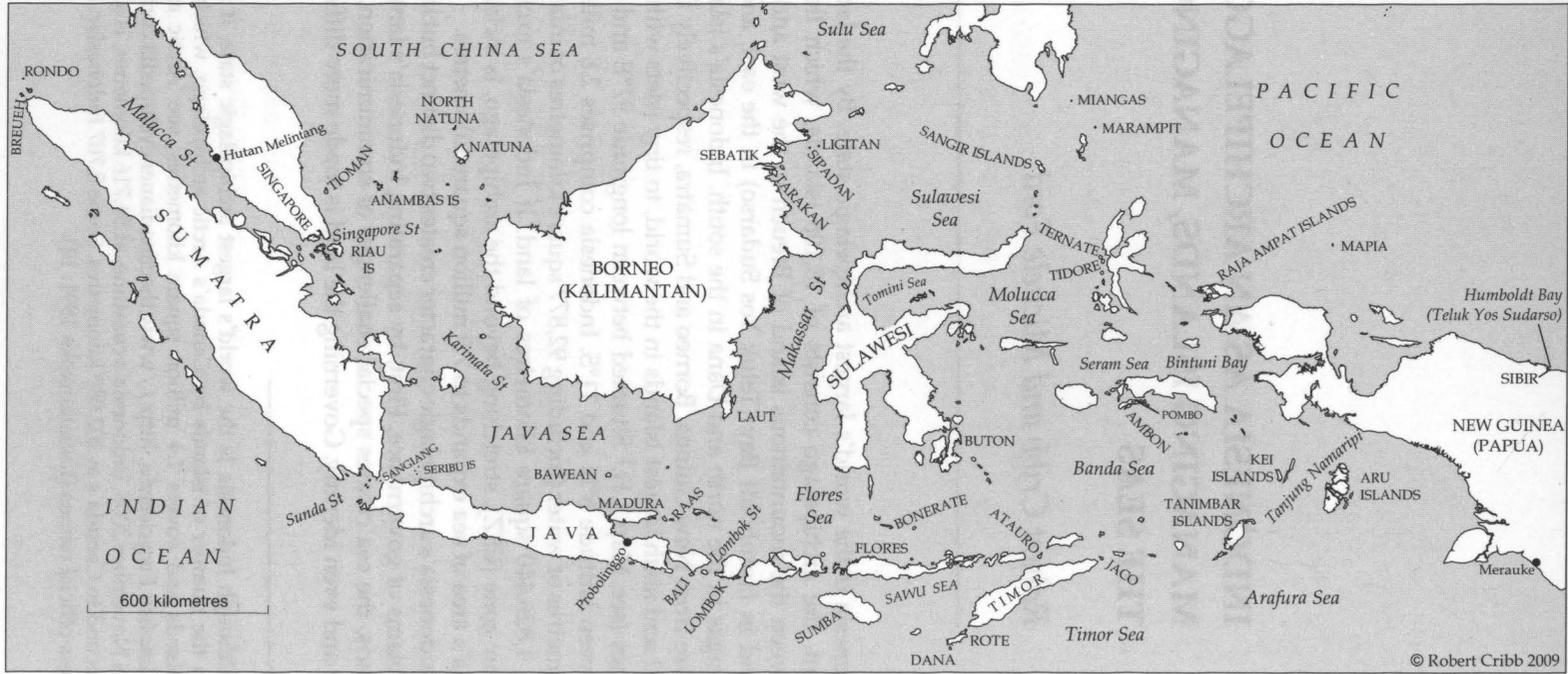
Robert Cribb and Michele Ford

Indonesia is the world's largest archipelagic state. By the latest official count, the archipelago consists of 18,108 islands, which lie scattered between the mountainous island of Breueh in the west and tiny Sibir Island in Humboldt Bay (Teluk Yos Sudarso) in the east, and between Miangas in the north and Dana in the south. Indonesia's islands range in size from New Guinea, Borneo and Sumatra, respectively the second, third and sixth largest islands in the world, to tiny islets with only local names (see Map 1.1).¹ Situated between longitude 97°E and 141°E and between latitude 6°N and 11°S, Indonesia comprises 2.8 million square kilometres of water (including 92,877 square kilometres of inland waters) and 1,826,440 square kilometres of land. If Indonesia's exclusive economic zone (EEZ), stretching beyond the archipelago, is included, Indonesia's area of sea expands to 7.9 million square kilometres.

Indonesia's archipelagic character creates two distinct but intertwined problems of governance. First, by separating Indonesia's landmass into islands, the sea creates special challenges of communication, coordination and even identity. Governing the land is made more difficult by the

1 Although Indonesia is the world's largest archipelagic state, it is exceeded in the number of islands by Canada's Arctic archipelago, which has 36,463 islands and covers 1.4 million square kilometres; see 'Arctic archipelago', *Canadian Encyclopedia*, <http://www.thecanadianencyclopedia.com/>, accessed 25 November 2008. Indonesia's coastline, at 54,716 kilometres, is also a distant second to Canada's at 202,080 kilometres. Some 5,707 Indonesian islands possess official names (Kwiatkowska 1991: 14).

Map 1.1 The Indonesian archipelago



intervening presence of the sea. Second, the seas that lie between and around these islands need to be governed. These seas represent a major strategic, economic and cultural resource for Indonesia; they cannot be ignored, yet governing the maritime zone poses enormous practical difficulties.

ON BEING AN ARCHIPELAGO

Indonesia's status as an archipelago has important consequences both for its identity as a nation and for its character as a state. Although Indonesia's first president, Sukarno, confidently asserted that even a child could see that the arc of islands between Asia and Australia constituted a single national unit (Sukarno 1961: 11), most observers look at Indonesia's geography and see the potential for fragmentation rather than a self-evident whole. To many people, islands seem destined by their very nature for separate existences and Indonesia's unity consequently has appeared to be fragile, artificial, perhaps even imaginary.² The closest geographical analogy to Indonesia, moreover, is a model of fragmentation. The Caribbean archipelago, 7,000-odd tropical islands stretched between two continents, is marked by cultural diversity and a long colonial history. Known to much of the world as the West Indies, it has a culturally diverse population of around 40 million. But it is divided into 27 independent states and dependent territories.

The practical reality is that Sukarno and the sceptics are both right: the sea divides and unites archipelagos in complex ways. The most powerful effect of the seas between the islands of an archipelago, however, is to separate those islands from each other, politically, economically, socially and culturally. The sea divides, because the process of moving people and cargoes safely from the shore onto the high seas is almost always more dangerous, more demanding of technology and more costly of time and effort than any such movement on land. A stretch of intervening sea magnifies the practical distance between two pieces of land. Yet the divisive force of the sea should not be overstated in comparison with that of land. In any large country sheer distance, whether overland or by sea, is divisive. So are differences in topography, climate and even time zone. The problems of governing the scattered islands of Indonesia are not demonstrably greater than those of governing the landmass of the Russian Federation or China.

The sea also unites because, paradoxically, it collapses distance in a way that land does not. That is to say, once a traveller is safely aboard

2 This issue is discussed in Cribb (1999).

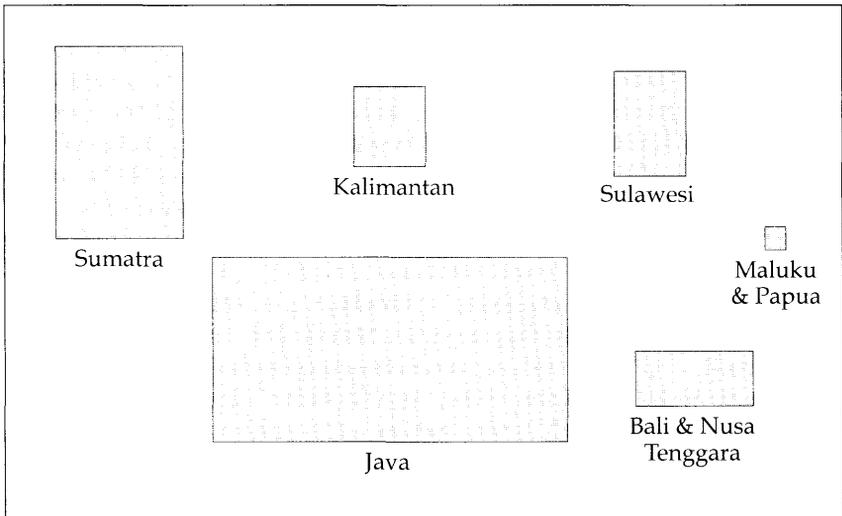
and away from the hazards of the coast, the difference in danger, difficulty and cost between a long journey and a short one is much smaller than the comparable difference on land. There is no clearer proof of the advantages of a long, unimpeded journey over one involving multiple disembarkations than the fact that the transit around the Cape of Good Hope became the preferred route for transport between Europe and Asia soon after its discovery, despite the availability of the much shorter passage involving land transport across the Isthmus of Suez. And even today, there is a thriving ferry service between Jakarta and Surabaya, both on the island of Java, despite the availability of an overland connection between the two ports. In Chapter 6 of this volume, David Ray illustrates the critical importance of loading costs to the overall cost of sea transport. The combined effect of the difficulty of going to sea and the collapsing of distance once at sea is that archipelagos, where mastery of sea-going technology is a necessity, tend to be well linked internally despite different distances between islands. These links are the basis for the separate political, economic, social and cultural identities of archipelagos. Sukarno's characterization of the archipelago may have been instinctive and naive rather than analytical, but his insight that archipelagos have a natural unity was entirely apt.

Indonesia's archipelagic character is qualified in two important ways. First, what we conventionally call the Indonesian archipelago is part of a much larger archipelagic assembly stretching between the continents of Asia and Australia and divided between Indonesia, Malaysia, Singapore, Brunei, the Philippines, Timor-Leste and Papua New Guinea. Indonesia even shares four islands—Borneo, Sebatik, Timor and New Guinea—with neighbouring countries. As parts of this larger archipelagic assembly, Indonesia's islands are easily drawn into relationships with the islands of its neighbours. In Chapter 13 of this book, Michele Ford and Lenore Lyons discuss the intimate relationship between the Riau Islands and Singapore. Comparable relations could be identified between Sumatra and West Malaysia, between Indonesian and Malaysian Borneo, and even between northern Sulawesi and the Philippines. The fact that, once one can get off an island and aboard a vessel, the sea offers the possibility of travel in almost any direction has a distinctly centrifugal effect. From a small island in the heart of Indonesia, one can sail directly to Singapore, or Hong Kong, or Port Moresby, or Darwin. The island of Bawean in the heart of the Java Sea, for instance, was a long-term provider of labour to British Singapore in the colonial era, despite its proximity to Java (*Encyclopaedie van Nederlandsch-Indië* 1917: 212). In contrast, from a small town in the heart of Siberia, one's movement to the outside world is largely constrained by the trajectory of a few roads. Apparently peripheral islands, therefore, have a capacity to be engaged

with the wider world that is mostly unavailable to peripheral land-bound regions.

Second, unlike many of the world's archipelagic states, Indonesia is actually a complex of archipelagos and large islands with a single dominant island, Java. In this respect it resembles Britain, Fiji, Japan and New Zealand – and is correspondingly unlike the Philippines, the Maldives and Tuvalu, where the pre-eminence of the main island is much less pronounced. The dominance of Java is not clear from simple geography, but it stands out if we represent the size of Indonesia's regions according to population (see Figure 1.1).

Figure 1.1 Indonesia's archipelago by population



The disparity between the islands in terms of population means that Indonesian politics has historically been marked by a centre-periphery tension that has given rise to one of the most enduring perceived divisions within Indonesia, that between Java and the outer islands (which the Dutch called the *buitengewesten*). Dutch dominance on Java was well established for at least a century and a half before major parts of the other islands came under effective Dutch control. This historical fact, together with Java's preponderance in population, its cultural self-confidence and its formidable economic assets, meant that Java set the model for the colonial governance of the archipelago (Dick 1996: 32). The inclusion in the Netherlands Indies of Sumatra – also with a substantial population and impressive economic resources – meant that the nation that emerged

within the shell of colonial rule in the first half of the twentieth century was more than merely Greater Java.

Javanese have always dominated Indonesian politics, but they have never been the defining ethnic group of the Indonesian nation in the way that Han Chinese, Kinh (Viet) and Thai peoples, respectively, define China, Vietnam and Thailand, relegating other ethnic groups to minority status. The emergence of Malay, rather than Javanese, as the lingua franca of the colony and later as the national language of Indonesia is only the most obvious reflection of Java's failure to capture the identity of the new nation. The qualified nature of Javanese dominance enhances the sense that Indonesia's unity is fragile. A dozen or more of the non-Javanese ethnic groups in the archipelago are large enough to claim credibly a separate national status. In contrast, independence for any of the minorities in Vietnam, for instance, is highly implausible. Indonesia's basic ethnic configuration makes separatism a believable political option, but it is the country's archipelagic character that makes it seem actually practicable. For this reason, despite the fact that there have been only four serious separatist movements in Indonesia's six decades of independence – the Republic of the South Moluccas in the 1950s, and the East Timor, West Papua and Aceh separatist movements more recently – Indonesia's rulers have displayed an obsession bordering on paranoia concerning the prospect of separatist movements (Emmerson 2005: 38).

Yet, even though Indonesia's archipelagic character seems, at least potentially, to exacerbate disintegrative trends, the fact of being part of a vast archipelago also unites. Pride in belonging to a great state is an element in the nationalism of most large countries – in China, the United States and Russia as well as Indonesia – and the very fact of inhabiting the world's largest archipelagic state is a source of satisfaction to many Indonesians. This satisfaction is evident in the inflation of the number of islands officially said to comprise the archipelago. In 1963, the number of islands was formally estimated at 13,667; this tally took on an iconic quality and was not influenced by the appearance and disappearance of islands as a result of siltation, erosion, land reclamation and tectonic movements,³ and not even by the 1976 annexation of the islands of Atauro and Jaco, off the former Portuguese colony of East Timor. In 1994, the figure was revised upward to 17,508. (This total, too, remained unrevised when Indonesia lost Atauro and Jaco to independent Timor-Leste in 1999.) In 2003, shortly after the loss of Sipadan and Ligitan to

3 An earthquake in 2007 produced six new islands near South Pagai off the west coast of Sumatra; two islands were lost in the construction of Jakarta's Soekarno-Hatta International Airport. In 2007, the State Ministry for the Environment estimated that Indonesia had lost 24 islands during 2005–07 (Muhammad 2008).

Malaysia under an International Court of Justice ruling, the figure was revised again to 18,108, an island being defined for this purpose as any piece of land surrounded by water and having an area greater than 30 square metres.⁴

Perhaps more important, there is some sense in Indonesia that being an archipelago is precisely what makes the country work, because it puts distance between groups that might otherwise clash. When former president Megawati Sukarnoputri announced her support for a bridge between Bali and Java in 2004, many Balinese opposed it because it would diminish Bali's isolation (Leinbach and Ulack 1999: 221; Pringle 2004: 220–21). Greg Acciaoli has argued that Soeharto's New Order used the myth of a maritime way of life among all the peoples of the archipelago across vast stretches of time to create a sense of identity that was effective because it sidestepped the practical political problems of life on land (Acciaoli 2001: 5–7).

A number of scholars have used the metaphor of archipelago to highlight the way in which dispersed institutions are able to share an identity because the physical distance that separates them is trumped by the social distance that detaches them from their immediate environment but unites them with each other. Alexander Solzhenitsyn (1974) coined the term 'Gulag archipelago' for the scattering of political prison camps across the face of the Soviet Union. These islands of incarceration shared a way of life and a complex social network in which people, goods and information were exchanged, but as islands they were detached from the society around them, except at those moments when they opened their gates to devour new victims. Alexander Randall used the term 'archipelago' to characterize the shared, self-contained culture of American overseas military bases and their social isolation from their host communities (Randall 1986: 61). Following Solzhenitsyn, many authors have given the term a somewhat sinister cast. Michel Foucault developed Solzhenitsyn's concept into the idea of a 'carceral archipelago' of state institutions whose purpose was to discipline and punish society and which were able to do so precisely because they were dispersed through society, much like an archipelago (Foucault 1982: 302). Others have described as archipelagos so-called 'gated communities', middle-class residential districts in large cities that protect themselves from urban criminality by building walls and setting up controlled entry points to whole clusters of houses (Rodgers 2004: 114).

4 'Indonesia "finds" 500 islands', *BBC News*, 20 February 2003, available at <http://news.bbc.co.uk/2/hi/asia-pacific/2784461.stm>, accessed 9 November 2008. For further discussion, see Hopper (1978: 35–8), Cribb (2000: 1–10) and Emmerson (2005: 11).

In Indonesia itself, the New Order's system of camps for suspected communist detainees following the 1965 coup also lends itself to an archipelagic metaphor (Cribb 2000: 171). More recently, Tom Boellstorff has identified a 'gay archipelago' characterized by what he calls 'islands of difference' – pockets of gay and lesbian culture embedded within but socially isolated from the majority heterosexual culture (Boellstorff 2005: 7). In this usage, 'archipelago' as a social term starts to approach the term 'diaspora' in meaning, differing only in that diasporas are generally presumed to relate to some (perhaps imagined) homeland, whereas an archipelago is unambiguously home to its people.⁵

In short, there is an archipelagic dynamic, in which a sense of unity emerges despite dispersal and distance, that appears to operate in metaphorical archipelagos as much as in real ones. Indonesia's archipelagic character creates special problems, and a few special opportunities, for the Indonesian state.

THE SEA IN INDONESIAN LIFE

Very different from the task of managing islands separated by the sea is the task of managing the sea itself. The vast area of sea that lies within and around the Indonesian archipelago is crucial to the Indonesian state for many reasons. The sea is an avenue of transport and communication. It connects Indonesia's islands with each other and it connects Indonesia with the rest of the world, carrying the imports and exports that sustain the economy. There are more than 750,000 dockings per year at Indonesian ports and those ports load more than 300 million tonnes of cargo per year.⁶ About 14 million Indonesians travel by sea each year to seek work, carry on business or visit family members.⁷ Marine transport is provided by 1,156 registered shipping companies and approximately 10,000 vessels (ESCAP 1999: 30).

5 For a study that comes close to conflating archipelagos and diasporas, see Goldstein (2000).

6 See Dick (1987); Rutz and Coull (1996); Statistics Indonesia, 'Inter island and international cargo loading and unloading, Indonesia 1988-2005', available at <http://www.bps.go.id/sector/transpor/sea/yearly/table4.shtml>, and 'Number of ship's call at commercial and non commercial sea port Indonesia, 1995-2005', available at <http://www.bps.go.id/sector/transpor/sea/yearly/table3.shtml>, both accessed 9 November 2008.

7 Figures record 14,737,000 passengers boarding commercial and non-commercial shipping in Indonesia in 2005, but only 13,664,000 disembarking; see Statistics Indonesia, 'Number of ship's passenger at commercial and non commercial sea port, Indonesia 1995-2005', available at <http://www.bps.go.id/sector/transpor/sea/yearly/table5.shtml>, accessed 9 December 2008.

The sea is also a source of vulnerability, a potential highway for enemies and a conduit for unwanted people and goods. Colonial rule arrived in the archipelago aboard the ships of foreign powers. Indonesia is not a major final destination for illegal immigrants, but there is a significant flow of illegal entrants from the Middle East who either intend to stay or end up staying (OECD 2003: 254; Hunter 2006). In 2007, around 1,000 Burmese seafarers were stranded in Tual after being discharged without papers by the Thai-flagged ships on which they were formerly employed (Higginbottom 2007: 19). The transit of illegal immigrants through Indonesia to Malaysia and Australia has been a significant problem in relations with those two countries. Large numbers of Indonesians also cross illegally into neighbouring countries, most often for work (Hugo 1993; Ford 2006). In addition, there is a vast number of illegal border crossings which are not expected to lead to permanent settlement. They include border crossings by small-scale traders, sometimes in illegal goods, and fishermen.

The sea is also an important economic resource. A wide range of marine life is harvested for human consumption – not just fish (including sharks) and shrimp, but also turtles, tripang and shellfish (Bentley 1996; Williams 2007: 40–42). It has been estimated that fish comprise 60 per cent of the protein consumed by Indonesians (Tomascik et al. 1997: 1,185; Williams 2007: 43–4). Marine life collected for commercial purposes also includes trochus, clams and other seashells, aquarium fish, coral and seaweed (Bentley 1999; Fougères 2008). The vast bulk of harvested marine life is caught wild. The Indonesian seas include some of the world's richest fishing grounds and Indonesia is the world's fourth largest producer of fish after China, Peru and India. There are enormous practical obstacles to measuring the size of the annual catch of any marine life, but plausible estimates of the current annual catch range from 3.7 to 7.7 million tonnes, compared with 2.8 million tonnes in 1994 (Delfs 2006).

Fishing has traditionally provided incomes for millions of people in coastal villages across the archipelago. Although capture fishing has been the most important source of employment in the marine sector, the farming of shrimp takes place on a vast scale in the coastal regions of western Indonesia, and the cultivation of milkfish (*bandeng*, *Chanos chanos*) is increasingly important. The government began to promote shrimp farming in the mid-1970s and to develop intensive farming techniques from the mid-1980s. In 1995 a catastrophic viral disease struck most of the shrimp farms, reducing production by 90 per cent, but production eventually resumed in southern Sumatra. Although an Indonesian firm, PT Central Proteinaprima, is the world's largest cultivated shrimp producer, the total area of shrimp farms declined from 231,460 hectares in 1989 to 132,800 hectares in 2005. A large part of the production (279,543

tonnes in 2005) is exported, and shrimp has become an important source of foreign exchange. Seaweed is also cultivated sporadically, and aquaculture is reported to employ about 2.5 million people in Indonesia.⁸

In recent decades the sea has become increasingly important as a source of minerals. The first mineral to be extracted from the sea was salt, which was harvested from early times on the beaches of many islands in the archipelago (Knaap and Nagtegaal 1991; Butcher 1996). The offshore dredging of tin began in the 1890s (Moolhuijzen 1972). Offshore extraction of oil began in 1971 with Arco's opening of the Cinta and Arjuna fields off West Java. This area remains the richest offshore oil region in Indonesia, though production is now in decline. Also important from the 1970s were the fields off the coast of Southeast Sumatra. More recently, both shallow and deep-sea oilfields have been discovered in the Makassar Strait (Ooi Jin-bee 1982: 12; Tangsubkul 1982: 82; Barnes 1995: 79).

Extraction of natural gas off the coast of West Java began in the early 1970s, and soon expanded to the eastern Java Sea and the seas around the Natuna Islands. The geomorphology of eastern Indonesia led many geologists to doubt that significant oil or gas reserves would be found there, but Arco discovered a huge offshore gas field at Tangguh in Bintuni Bay in 1997 and there are reports of major offshore fields in Aceh. In all, Indonesia is estimated to have around 2.8 trillion cubic metres of proven offshore natural gas reserves.⁹ Increasing attention is also being given to other seabed minerals. Early interest in polymetallic nodules (formerly known as manganese nodules) has been followed by attention to hydrothermal sulphides containing gold, silver, copper, lead and zinc, which have been reported from the Sulawesi Sea north of Manado, and to cobalt-rich ferro-manganese crusts.¹⁰ Indonesia is also estimated to have on its seafloor 24.3 trillion cubic metres of methane hydrate, regarded by some experts as a major future source of energy to supplement oil and gas.

In recent times, sand and coral have been mined on an increasing scale for building and construction purposes (Bentley 1998). Until 2002, there

8 See Siregar (1999); ADB (2006); USDA Foreign Agricultural Service (2008); 'Indonesia's CP Prima to spend US\$242 mln on shrimp production', *Panorama Acuicola*, 7 December 2007, available at http://www.panoramaacuicola.com/noticia.php?art_clave=4200, accessed 9 December 2008. On seaweed cultivation, see Backhaus and Wälty (1995).

9 'Official energy statistics from the U.S. government: Indonesia', available at <http://www.eia.doe.gov/emeu/cabs/Indonesia/NaturalGas.html>, accessed 3 March 2009.

10 'The dawn of deep ocean mining', *ScienceDaily*, 21 February 2006, available at <http://www.sciencedaily.com/releases/2006/02/060221090149.htm>, accessed 5 November 2008.

was a significant export of sand mined from the islands and seabeds of the Riau Archipelago to Singapore, where it was used for land reclamation purposes. This trade was banned in 2002 because of the environmental damage that mining was causing in Riau (Simamora 2002). The mining of sand to replenish tourist beaches has also been reported from Bali (Atmodjo 2008).

The sea can be a hazard to human existence. The perils of shipwreck from storm or reef, or simply of individual misadventure, loom larger at sea than do comparable dangers on land. Pollution may not only damage fish stocks but also cause human illness when it passes into the human population through fish. Indonesia is largely outside the tropical cyclone zone, so its coastal regions are generally not subject to the intense winds and storm surges that repeatedly cause enormous loss of life in neighbouring countries, but local storms at sea can be catastrophic for fishermen and ferries. Indonesia's location in a zone of geological instability means that many of its coastal regions are vulnerable to tsunamis. The 2004 tsunami that devastated Aceh and claimed an estimated 128,000 lives was the worst of a long series of such events associated with earthquakes and volcanic eruptions (Simkin and Fiske 1983). We are just beginning, moreover, to understand the role of the seas in climatic patterns. The consequences of the El Niño Southern Oscillation for rainfall in Indonesia have been known to scientists for nearly a century, but have only become part of broader public knowledge in the last decade or so (Nicholls 1992: 167).

The sea also has a special, if ambiguous, place in perceptions of Indonesian identity. Claiming a special affection for the sea, or an attachment to it, contemporary Indonesians often use a poetic term for the country, *tanah air* (land and water), to conjure up a sense of the unity of land and sea in the Indonesian national imagination (see, for example, Moertopo 1978: 73–5). Yet the expression appears to be a relatively recent one – it first appears not in the classical texts of Malay civilization but rather in the 1842 *Hikayat Abdullah* [The Tale of Abdullah], a work that is distinctively modern in vocabulary and world-view.¹¹ Moreover, the most celebrated appearance of the term *tanah air* in nationalist literature – in Muhammad Yamin's poem *Tanah Air* – refers to the fresh water that nourishes the land, not to the sea that surrounds it. Another commonly cited poetic term, *nusantara* (islands in between), draws attention to Indonesia's archipelagic character, but does not focus on the sea itself (Kusumaatmadja 1982). The best known sign of cultural attachment between Indonesians and the sea is the widespread belief in the legend

11 See the Malay Concordance Project, available at http://mcp.anu.edu.au/N/Abd.H_bib.html, accessed 6 November 2008.

of Nyai Loro Kidul, the goddess of the southern seas who is the spiritual consort of the rulers of Java according to one set of legends. These stories, however, suggest that the sea is a counterpoint to the human world of the land, a place where humans do not really belong rather than an integral part of human existence.¹²

Emotional connection with the sea, like attachment to land, is a real cultural phenomenon that is notoriously difficult to measure and seriously prone to platitude and exaggeration. It is partly a consequence of a prosaic sense of dependence on the sea for livelihood, especially in fishing communities. In more complex ways it has to do with the sense of having special knowledge about the sea—an ability to 'read' the sea, for instance, or to identify an underwater hazard such as a reef, or to foresee a change of wind or the approach of a storm—that enhances the prospects for survival in a dangerous environment.¹³ Such an emotional connection arises from and is expressed in the belief that the sea itself has a special spiritual character or is the home of spiritual beings, such as the 'sea wives' of pearl divers in the Aru Islands (Spyer 1997). It may even relate to the use of the sea for leisure activities. Although there is a substantial literature on the role of entertainment in Indonesian cultures, little attention has been paid to the place of leisure in general in modern Indonesia.¹⁴ Anecdotal evidence suggests that Indonesia has only a meagre culture of maritime leisure—surfing is mainly the preserve of foreign visitors, as is recreational sea-fishing, diving and yachting.¹⁵ A cultural history of Indonesian imaginings of the sea is yet to be written.

It is safe to say, however, that attachment to the sea is unevenly spread among Indonesia's many peoples. A few communities—the Orang Suku Laut (Sea People) of western Indonesia and the Bajau of eastern Indonesia—traditionally lived in intimate association with the sea, not only drawing their livelihood from it but living on it aboard their vessels (Chou 2003; Lowe 2003). For others—peasant farmers in Java, plantation workers in Sumatra, mountain dwellers throughout the archipelago—the sea is a remote and alien place, with no more than a minor part in their national imagining. There are strong signs, too, that the Orang Suku Laut and Bajau are losing their former close association with the sea. The

12 On Nyai Loro Kidul, see Jordaan (1984) and Wessing (1988: 56–7).

13 On the creation of attachment to land (and, by implication, the sea) that arises from surviving the hazards it presents, see Narangoa and Cribb (2003).

14 See, however, the important work by van Leeuwen (1997, 2005).

15 The late President Soeharto was fond of big-game fishing, but this enthusiasm did not spread widely within the Indonesian elite. On Indonesia as a destination for foreign surfers, see Lueras et al. (2002); for a glimpse of the early history of recreational use of the sea in Indonesia, see Rinkes, van Zalinge and de Roever (1927: 209–40).

need to educate their children is a powerful incentive for them to move onshore, and local governments also encourage it as a means of social betterment (Hajramurni 2008). As land-based communications improve, too, many coastal communities are becoming gradually less oriented to the sea in their day-to-day lives.

MANAGING THE SEAS

Governing the maritime realm has always posed distinct challenges to governments, different from those of ruling the land. The physical fluidity of the sea has three far-reaching consequences for governance. First, it is always difficult (and mostly impossible) to mark any clear border on the sea or to place an installation at any fixed point on the sea's surface. This absence of fixity greatly complicates any attempt to establish or maintain a governmental presence at sea or to make the extent of a government's claims clear to visitors. Second, the sea is dangerous. Most of the hazards found on land exist in one form or another at sea as well, but hardly anywhere on land is the possibility of death as close and as constant as it is at sea. Third, the sea is multi-layered. Governance regimes on land normally make a distinction between air column, surface and subsoil. Governance at sea, in contrast, must take account of air column, surface, water column, seabed and subsoil, each of them different realms. This multi-dimensionality means that different governance challenges may exist at different levels at a single spot on the map.

These difficulties of governance mean that most activities at sea require a higher level of technology and skill than do comparable activities on land. For this reason, changes in the mastery of technology have historically been of huge importance in determining access to and control of the sea. Developments in European shipping design and navigational technology brought European ships to Indonesia from the sixteenth century, leading to a profound transformation of the archipelago (Glete 2000: 87-8). The ability to mount cannon on ships cemented Western supremacy. Later advances in the technology of navigation and mapping have produced dramatic changes in the capacity to locate and harvest fish and minerals at sea.

Although Indonesians have a long history of seafaring prowess, they have been relatively weak in mastering new technologies that would enable the government to control its seas. Lack of capital and of state revenue is one source of the problem. Although Indonesia has enjoyed substantial income for many years from the export of natural resources, there has always been significant internal competition for that income, and the relatively high costs of marine technology have been a constant

disadvantage in the struggle for budget allocations. Indonesia's rulers, moreover, have a long tradition of making a virtue of the lack of access to technology by emphasizing political solutions over technological ones. During the independence struggle against the Dutch, leaders like Sukarno consciously adopted a strategy of embedding nationalist consciousness among the people, forecasting that Dutch power would fall away if Indonesians could be persuaded out of their deference to colonial authority. In stark contrast, for instance, to Leninist revolutionaries, the Indonesian nationalists paid little attention to the technologies of revolution that might have brought them to power (Legge 1972: 102-3, 115).¹⁶ The same reliance on popular will was evident when, faced with superior Dutch arms, Indonesia's military leaders developed the defence doctrine known as *Hankamrata* (*Pertahanan Rakyat Semesta*), or Total People's Defence, under which what was said to be an integral relationship between the people and the armed forces compensated for a lack of sophisticated weaponry (Cribb 2001).

Even under the New Order (1966-98), when significant sums were invested in infrastructure and technology, the dominant mood in cabinet tended to be hostile to interventionist, technological fixes. The so-called 'technocrats' who dominated New Order policy making for at least two decades from 1966 took a neoclassical approach that stressed macro-economic settings and avoided direct economic interventions. Only with the rise in influence of the technology minister, B.J. Habibie, in the second half of the 1980s did the so-called 'technologists' win a serious say in government, precipitating ambitious spending on projects whose attraction lay in attempts to master advanced technology (Hill 1995). Even then, Habibie was in constant conflict with those who favoured a more political and less technological approach to government.

The consequent lack of mastery of maritime technology has been reflected in several enduring management problems at sea. Indonesia has been generally weak in combating sea-borne criminal activities. Smuggling was widespread during the colonial era (Tagliacozzo 2005) and continued to be important after Indonesia became independent. During the war of independence, the Indonesian government itself sponsored clandestine trade to obtain funds for the struggle against the Dutch (Homan 1983; Cribb 1988). The problem was most acute in the 1950s and 1960s, when central government policies were hugely disadvantageous to exporters, many of whom were located close to alternative markets

16 Indeed, the communist leader D.N. Aidit evidently relied in much the same way on popular spirit and paid the same scant attention to technique in his attempt to shift political power towards the Communist Party in October 1965 (Roosa 2006).

across the maritime border. The scale of smuggling may have diminished during the New Order but it remained a serious problem (Simkin 1970). These days it includes, on the one hand, the import of drugs, of items that undercut Indonesia's own industries (ranging from processed steel to used clothing) and of contraband that circumvents Indonesian tariffs (such as alcohol and tobacco), and, on the other hand, the export of cash, endangered wildlife species, antiquities and subsidized fuel and fertilizer. The problem remains so serious that the government recently considered closing the Sumatran port of Bagan Siapi-API to foreign trade because of widespread smuggling and underinvoicing (Dameria 2008). Djoko Sumaryono (Chapter 8) notes both the difficulty of coordinating the different government agencies responsible for maritime affairs and the recent achievements of Indonesia's Maritime Security Coordinating Board (Badan Koordinasi Keamanan Laut, or Bakorkamla).

Piracy, especially in the Malacca Strait, is also a serious problem, although Sam Bateman (Chapter 7) notes significant improvement in recent times. In the aftermath of Soeharto's fall in 1998, there was a weakening of surveillance in maritime areas, with the consequence that there were 113 piracy incidents—more than a third of the world's reported pirate attacks—in Indonesian waters in 1999. In 2002, Indonesia commenced joint patrols with India in the Andaman Sea approaches to the Malacca Strait, and in 2004 Indonesia, Malaysia and Singapore began joint patrols in the strait itself. In 2005, the United States offered to donate 40 coast-guard ships, old but still serviceable, to the Indonesian authorities to help them patrol the Malacca Strait. Nonetheless, Indonesian authorities acknowledge that they still have difficulty marshalling the capacity to patrol the region effectively. In line with the government's traditional preference to seek a political rather than technological solution, counterpiracy measures have included efforts to improve the standard of living in coastal districts (*kabupaten*) along the Malacca Strait (Rokan Hilir, Bengkalis, Siak, Palawan, Indragiri Ilir, Karimun), as well as other regions near major sea lanes. The expectation is that improved economic conditions will diminish the attraction of piracy.¹⁷

Indonesia faces a similarly perennial problem with illegal fishing. During the 1970s, serious concerns began to arise over the possibility of overfishing in Indonesian waters, leading to the banning of trawling in 1980, except in the Arafura Sea. This measure was followed by others to limit catches and restrict the access of foreign vessels to Indonesian

17 See Dillon (2000); Eklöf (2006); Ho (2006: 565–6); Permal (2006); 'India, Indonesia hold joint patrol', *Jakarta Post*, 13 October 2008, available at <http://www.thejakartapost.com/news/2008/10/13/india-indonesia-hold-joint-patrol.html>, accessed 10 December 2008.

waters. Nevertheless, huge volumes of fish, shellfish and other marine life are caught illegally within the archipelago and substantial amounts leave in the holds of foreign fishing vessels operating without permits, or with permits that have been transferred illegally from Indonesian licence holders to foreign fishers (Agoes 2005; Williams 2007). As with piracy, the government's instinctive response to illegal fishing has been to emphasize political and social solutions, rather than simple surveillance and punishment, recognizing the poor social conditions in fishing communities that lead to the infringement of regulations.

Indonesia also has a relatively weak record in developing regulatory regimes for activities at sea. As Sarah Waddell indicates in Chapter 11 of this volume, the overall legal regime governing Indonesian fisheries is relatively underdeveloped, despite the passing of a new Fisheries Law (Law No. 31/2004) in 2004 (Patlis 2007).¹⁸ Indonesian waters encompass a vast range of ecological zones, including mangrove swamps, coral reefs, seagrass beds, open ocean and deep sea trenches. The conservation of these resources has been marked by sophisticated rhetoric in Jakarta and deficient delivery of results in the field (Arnscheidt 2009). The issue of marine pollution remains seriously underaddressed. As the country industrialized during the later decades of the Soeharto era, scant attention was paid to the dumping of industrial waste in rivers, which in turn polluted the seas (Cribb 1990: 1,124–5; Djalal 2000). The consequence was repeated instances of damage to coastal capture fisheries and aquaculture. The prosecution of offenders was infrequent.

Indonesia's lack of mastery of modern technology has also been apparent in its handling of *legal* economic activities at sea. In the legal fishing industry, Indonesian enterprises are generally outclassed by foreign ventures. The Indonesian section of the industry is dominated by small, artisanal fishers, while the high-tech sector is dominated by foreign or joint venture firms. Indonesia has maintained somewhat closer control of the extraction of oil, gas and other minerals from the sea but it remains largely dependent on foreign-owned technology and entrepreneurship in these sectors.

Marine safety is another major issue. As Erwin Rosmali demonstrates in Chapter 9 of this volume, Indonesia has witnessed repeated ferry disasters and accompanying loss of life. Several elements contribute to the problem of safety in Indonesian waters. Many vessels are old, and not all captains, navigators and other seafarers are properly trained. Many vessels lack basic navigational equipment. The checking of safety equipment is often rudimentary and vessels are often overloaded. Indonesia's search and rescue capacity is limited. As a result, accidents caused by bad

18 On the history of fishing in Indonesia, see Butcher (2004).

weather or faulty equipment can lead to extensive loss of life. Fishing and smaller commuter vessels are also regularly lost at sea.

Nor does Indonesia have a strong record in managing the interests of the approximately 72,000 Indonesians who are reported to work as seafarers, 60 per cent of them on Indonesian ships and the remainder on foreign-registered vessels (Sijabat 2002). Indonesia is one of the world's largest sources of seafarers for international shipping. Few of them speak English, however, or have the training to work on larger vessels, and a recent International Labour Organization (ILO) report suggests that conditions in the industry are poor (ILO 2002). Many seafarers do not receive the minimum wage,¹⁹ and work in conditions that breach standard safety requirements. Many have to pay up-front to get their jobs and are required to sign two contracts, one for the record that meets ILO standards and another that reflects actual conditions of work. The Indonesian Seafarers Union (Kesatuan Pelaut Indonesia, or KPI), established by the Directorate General of Marine Transport, has not been an effective negotiator with shipowners and is not recognized by the ILO. The extensive use of flags of convenience by vessels operating in Indonesian waters has added to the difficulty of monitoring conditions.²⁰

Indonesia has been slow to develop an efficient network of interisland passenger and cargo services. When the New Order came to power in 1966, there were no formal passenger services between Indonesia's islands; passengers had no choice but to travel by cargo ship, mostly on deck. Under the Perintis project, the New Order government agreed to subsidize specific regular services, but the initiative began poorly when the first ferry introduced under this venture, the state-owned, second-hand, roll-on/roll-off *Tampomas II*, sank in 1981 with the loss of 580 lives. Between 1983 and 1987, the government purchased six new vessels from Germany and with them provided regular passenger services between the major ports for the first time since 1957. Nine more ships entered service between 1987 and 1994 (Rutz 1987: 491; Rutz and Coull 1996: 278;

19 A 1996 survey indicated that Russian, Ukrainian, Croatian and Indonesian seafarers received the lowest rates of pay in the industry, regardless of the country of registration of the ships on which they were working (DeSombre 2006: 137).

20 'Seafarers demand better payment, welfare', *Jakarta Post*, 30 July 2002, available at <http://www.thejakartapost.com/news/2002/07/30/seafarers-demand-better-payment-welfare.html>; 'Uphold safety management in RI waters: seafarers', *Jakarta Post*, 9 April 2007, available at <http://www.thejakartapost.com/news/2007/04/09/uphold-safety-management-ri-waters-seafarers.html>; 'Shipping woes due to govt failings', *Jakarta Post*, 5 November 2008, available at <http://www.thejakartapost.com/news/2008/11/05/shipping-woes-due-govt-failings.html>, all accessed 9 November 2008.

Dick 2008). Until 1985 the interisland shipping system was highly regulated, with access to particular routes based largely on a licensing system, but reforms carried out between 1985 and 1988 removed many of these restrictions (Dick and Forbes 1992; ESCAP 1999). As we see from David Ray's chapter in this book, Indonesia has also lagged in managing its port facilities. Indonesian ports are notorious for their slow turnaround times, lack of facilities and general poor management, a situation that represents an unnecessary tax on interisland trade.

Still less impressive is Indonesia's management of its maritime heritage. Thanks to the archipelago's long history of maritime commerce, the Indonesian seas are littered with shipwrecks dating back at least two millennia. These wrecks are potentially a source of great insight into the early commercial and cultural history of the region (Flecker 2001), but Indonesia has not given high priority to protecting its marine archaeological heritage. Shipwrecks and other marine heritage sites do not come under the authority of the Ministry of Culture and Tourism, which is responsible for archaeological sites on land, but rather under the Ministry of Marine Affairs and Fisheries, which has little institutional reason to be interested in heritage. When a tenth-century shipwreck containing rubies, glass and thousands of pieces of pottery was discovered by fishermen off the northern coast of West Java in 2000, the response of the ministry was to retain 10 per cent of the cache and auction off the rest. 'It has more economic value than historical value, there is no need to take it for our heritage museums', said a ministry spokesperson (Cuno 2008: 46). The growing sophistication of underwater scanning technology has exposed increasing numbers of shipwrecks to illegal plunder for the international antiquities market, but it is still the case that most new shipwreck sites are discovered by trawlers and diving fishermen (Flecker 2002).

Indonesia's naval defences have not been tested in conflict since the 1960s. Indonesia's naval encounter with the Dutch off Vlakke Hoek (Tanjung Namaripi) in 1962 during the confrontation over West New Guinea (now Papua) ended in defeat, although the threat of naval action on a larger scale was one element in the eventual Dutch decision to give up control of the territory (Slot and Hendriks 2002). Throughout the period since independence, the Hankamrata doctrine has meant that Indonesian defence planning has given little attention to the navy as a first line of defence against foreign intrusion; the consequence has been small budgets and a relatively low general standing for the navy within the armed forces (Suryohadiprojo 1973; Dupont 1996).²¹ Indonesia's most

21 On the history of the Indonesian navy, see Cahyono (1992) and Leirissa (2006).

effective innovation in marine surveillance, in fact, has been a political rather than a technological one: the government has recruited fishermen as part of its national security system under an arrangement known as *sistem pengawasan masyarakat (siswasmas)*, or community surveillance system (Patlis 2007: 219). Pressure on Indonesia to enhance its technological capacity for surveillance has increased in recent times with the emerging fear of a possible terrorist attack in Southeast Asian waters. The principal fear has been that a hijacked vessel might arrive in Singapore via Indonesian waters as a floating explosive device, causing serious loss of life, extensive damage to infrastructure and a loss of confidence in the main container route through the Malacca Strait (Luft and Korin 2004; Sukma 2005; Ho 2006: 563–5).

If Indonesia has performed poorly in mastering the technology of managing the seas, it has also been unimpressive in its management of technology that might help to transcend Indonesia's archipelagic character. Except in the Riau Islands, where the then technology minister, B.J. Habibie, took the initiative to build a chain of six bridges connecting the islands of Batam, Rempang and Galang (Chou and Wee 2002: 351–2), Indonesia has not followed the example of other sea-bound countries, such as Denmark, Norway and Japan, in constructing bridges to connect islands. Although there has been a proposal for a bridge between Java and Madura, and between Java and Bali, neither has moved beyond the speculative stage (Leinbach and Ulack 1999: 221; Pringle 2004: 220–21).

Although the record of Indonesia's technological management of the sea is a somewhat dismaying account of indifferent performance, the Indonesian inclination to seek effective political solutions has generated an impressive record in developing a political regime to govern the sea. The challenge in creating a political regime in maritime areas lies not in making laws that are consistent with the national interest, social rights and natural justice, but rather in producing laws that reflect both the specific character of the sea itself and the current capacity of states to govern it. Laws that cannot be implemented serve little purpose, as was shown centuries ago by the Treaties of Tordesillas (1494) and Zaragoza (1529), in which Spain and Portugal agreed to divide the world, including the oceans, between them. Although this division was endorsed by the Pope, it quickly became a dead letter because the Iberian powers were unable to enforce their claims against the intrusion of the northern Europeans.

Indonesia's contribution to the Law of the Sea since the 1950s has been strong. The articles in this volume by John G. Butcher (Chapter 2), Arif Havas Oegroseno (Chapter 3), Hasjim Djalal (Chapter 4) and I Made Andi Arsana and Clive Schofield (Chapter 5) reflect the fact that, for more than five decades, Indonesia has been at the forefront in devising new laws to reflect changing governmental capacity at sea. Most important of

all has been Indonesia's development of the archipelagic state as a concept in international law. The consequence has been to create a new category of jurisdiction, archipelagic waters, which are recognized as part of the maritime territory of some two dozen archipelagic states around the world. The establishment of the concept of archipelagic waters has in turn required – in the case of Indonesia and the Philippines – the development of a regime for transarchipelagic passage known as archipelagic sea lanes.

In negotiating its maritime boundaries with Australia, Indonesia pioneered innovative means of recognizing the complexity of maritime resource exploitation. Under the Timor Gap Treaty of 1989, Indonesia and Australia shelved what had proven to be irreconcilable differences over the principle on which the maritime zone between Australia and what was then the Indonesian province of East Timor should be divided. Instead, they created a 'zone of cooperation', divided into three separate areas of exploitation, with each country having a different share of the responsibilities for each area (Prescott 1993c).²² Then, in 1997, Indonesia and Australia signed a further treaty demarcating the entire EEZ boundary between the two countries. The innovative feature of this treaty was that it created separate, overlapping EEZ regimes for the water column (including fishing rights, which went to Indonesia) and the seabed (including mining rights, which went to Australia) (Prescott 1993a, 1993b, 1997).

One of the challenges for contemporary Indonesia is to decide whether and how to extend the imaginative approach to marine territoriality to the issue of marine tenure. In Western law, which forms the principal basis of Indonesian law, private ownership of the sea is not possible, and there is no easy way to recognize the traditional rights of individuals over areas of sea. Where such recognition exists in practice, it most commonly takes the form of licences granted by the state, on its own authority, to individuals or groups whom it judges to be traditional users. Customary marine tenure – that is, the public recognition of traditional ownership of marine resources – is common in parts of eastern Indonesia, despite evidence that it is a relatively recent construction (Osseweijer 2001: 111–15; Bubandt 2005), but it receives no support in Indonesian law. The Indonesian constitution, moreover, is well known for explicitly subordinating private ownership of land to the broader national interest. Article 33(3) states succinctly: 'The land, the waters and the natural riches contained therein shall be controlled by the State and exploited to the greatest benefit of the people'. The legal environment for recognition of

22 This treaty became a dead letter in 1999 with the independence of the province as Timor-Leste.

customary marine tenure is thus unpromising. James J. Fox (Chapter 12) draws attention to the difficulties the Australian government has faced in regulating 'traditional' uses of marine resources in regions that are now within Australia's jurisdiction. An ironic consequence is that maritime and coastal communities such as the Orang Suku Laut have sought first of all to establish a claim to land. Cynthia Chou quotes a member of this community, which is famous above all for its identity with life at sea, speaking of territory purely in terms of land:

For us, we have been on this land since we were young children. This is *tanah kami* (our land) and not the *tanah* of others. ... [O]ur father, mother and siblings are all buried here. We do not want to disturb them. ... We do not want to move to another island. We just want to live and die in this one island, which is ours (Chou 1997: 616).

Within Indonesia, however, conservation groups have been developing creative measures to combine marine conservation with traditional exploitation of sea resources (Satria, Sano and Shima 2006). There is some prospect that this approach will lead to significant changes in maritime environmental management. Rili Djohani (Chapter 10) suggests that the Indonesian government performs best in environmental protection (as in defence) when it emphasizes the political rather than technical aspects of management.

Indonesia is at a vital juncture in the management of its seas. Partly for historical reasons, partly thanks to its vigorous contributions to the framing of the Law of the Sea, Indonesia is recognized as possessing 5.8 million square kilometres of sea, and may soon come to possess more if its proposal for an extended continental shelf is accepted. With this vast area come substantial opportunities – the seabed will be one of the great resource frontiers of the twenty-first century and new opportunities for productively managing the ecology of marine areas are constantly emerging. Yet with this opportunity come responsibilities and threats. As a contributor to the international order, Indonesia will be obliged to exercise more direct authority over the seas under its control – protecting them from degradation and ensuring the safety of those who traverse them, while ensuring its own security and economic interests. Success in bringing effective governance to this vast realm will be crucial in Indonesia's economic and social development.

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