

Traditional Fisheries and Dualism in Indonesia

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Indonesia is the world's most important archipelagic state. It comprises 13,667 islands (only 956 are inhabited) spread over a sea area of 79 million km² (including its EEZ), which makes up 81% of its total geographic area.

The country controls vast mineral, oil and gas deposits and some of the world's most important sea lanes. The wealth and diversity of its marine ecosystems and resources are unmatched by any other tropical nation; many valuable marine organisms reach their peaks in diversity within the boundaries of Indonesia.

The population of Indonesia reached 165.1 million in 1985, making it the fifth most populous nation. Some 100.3 million (61%) of these people reside in the agriculturally-rich volcanic island of Java.

Traditional agriculture and small-scale fisheries employ the vast majority of Indonesians; in 1983 an estimated 1.2 million were involved in full- or part-time fisheries occupations. Traditional uses of coastal and marine resources are as varied as the hundreds of different cultures and language groups. A few generalizations can be made, however, due to the prevailing Indonesian "world view" which exists to this day, surviving in the midst of the extreme diversity of their environment.

Traditional uses of marine resources and culture systems are largely confined

to the shallow-water inshore zones of coastal waters. This is due to an extreme "dualism" in Indonesian thought which originates in animistic religious beliefs but continues to be part of contemporary Indonesian thought even though the country is more than 87% Islamic. A symbolism exists regarding the opposite "poles" of life -- black and white, day and night, inner and outer, land and sea, plains and mountains -- and particularly pervades the Javanese and Balinese cultures.

The Javanese, inhabiting an extraordinarily rich agricultural island, are landward-looking people, and to them, the sea is the realm of spirits not connected to the human world. Similarly, the Balinese consider the mountains as home of the gods and the sea as the reservoir of all evil and filth. Even before the modern era of mass Indonesian transmigrations, the majority of coastal fishermen and sea traders in Bali were immigrants to the island from the more sea-going cultures of Indonesia.

The Timorese and Sumbanese have also carried out little traditional fishing activities due to their fear of the spirits in the sea as a final reserve of the dead. In contrast to them, other cultures in Indonesia, in particular the Mandarese, Makassarese, Butonese, Madurese, Buginese and Sanghinese islanders are famous for their long migrations and seafaring.



Traditional brackishwater fishponds (*tambak*) on the north coast of Java. In 1983 Indonesia had 242,308 ha of *tambak* producing 134,072 t of seafood valued at Rupiah 137,793 million or US\$121 million.

Legends regarding these wandering, sea-loving peoples speak of epic voyages to distant lands that could be the islands of Hawaii or the coasts of North and South America. Some of these people settled in Madagascar (Malagasy Republic).

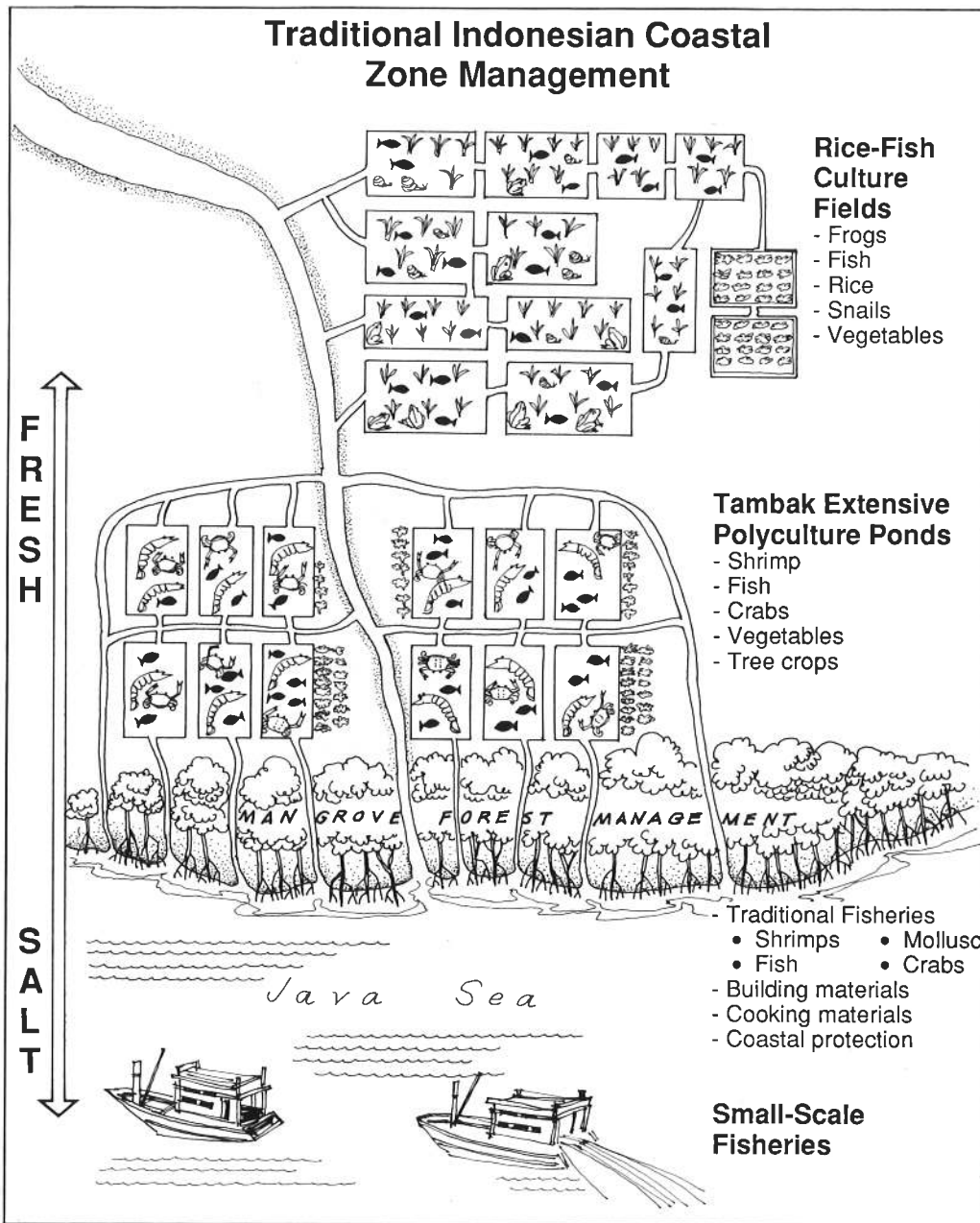
Over generations a blending of the coastal cultures of the Indonesian archipelago eventually arose, certainly due to their common bonds of labor and intermarriages, but also due to their isolation from the "upper" classes of people residing inland and the scorn these inlanders heaped upon those that plied the realm of the dead. Thus emerged a unique *pesisir* (coastal) culture in Indonesian coastal areas, a remarkably uniform blending of coastal people who pioneered trade within the islands of Indonesia, and of people who brought Indonesia to the outside world (and vice-versa).

The diversity of beliefs and strong geographic and cultural stratification (e.g., land and sea) in Indonesia can be appreciated through one example from the island of Sulawesi. Inland people of Sulawesi symbolically discard death, filth and diseases in rivers or the sea, while on the same island, on the southwestern peninsula, the Mandarese villagers seasonally carry out romantic and dangerous fishing journeys for their

Small-scale fisherfolk using a beach seine on the south coast of Java.



Traditional Indonesian Coastal Zone Management



areas beyond its neritic seas. The open ocean outside the neritic (but still within its EEZ) zone has thereby been viewed as a common property resource. Traditional ownership of sea resources, which, in the Pacific islands, is commonly intricately tied to adjacent land tenure systems, is only found among a few cultures of the eastern islands of Indonesia and is virtually defunct today.

Because of the traditionally bountiful marine resources nearly exclusively available to the *pesisir* people, few traditional marine conservation measures existed. No known traditional management systems surviving till today are strictly oceanic. While the open sea has played an obvious role in shaping the Indonesian nation, it is the coastal and inland ecosystem which has dominated the Indonesian mind (see figure). This is shocking when one considers that 81% of the nation is productive shallow water seas, but understandable when one realizes that it was only during the last 50 years, when the population of Indonesia has risen so dramatically, that the country's bountiful and most valuable marine resources began to exhibit the adverse impacts of man.

In modern times Indonesia has been very vulnerable to the advent of high-technology, long-distance trawlers due to the simple fact that policing the world's largest nation of islands is virtually an impossible task. The nation, however, still has some of the most extensive (last?) reserves of the most fabulous and diverse marine ecosystems and organisms on our planet, existing in a natural state. Is this partly due to the cultural perceptions of the sea which restricted access?

As the coastal population of the country has increased and continues to do so, new conflicts have emerged. Modern migrations and Islam have eroded the sharp distinctions between coastal and inland peoples, and the power of animism has declined. Few conflicts now exist between groups of small-scale or traditional fishermen, or between newcomers to the coastal zone involved in traditional fishing. The new battles, which have recently erupted into violence, are between the traditional *pesisir* people who practice small-scale fishing methods and the commercial and foreign fleets. Resolution of conflicts will only come about if the *pesisir* people are included in the future of the marine fisheries ecosystem to the level of their importance in numbers, and with the proper concern for their livelihood. ●

staple food, flying fish (*Cypselurus* sp.), during the eastern monsoon.

Dressing traditional fish traps (*buario*) with seaweed and palm fibers (*induk*) and setting them adrift in sets of six, the fishermen chant to the swarms of flying fish, which arrive "like a black storm". As the flying fish approach the traps, fishermen chant ancient erotic poems, exhorting the fish to strike, hit, enter and copulate with the "beautiful woman" (the *buario*) and to deposit their eggs on the *induk*. Perhaps no other culture has developed such a traditional knowledge of the behavior of the flying fish, or produced such an exotic marine oratory!

The eggs gathered from the traps are an important high-priced export commodity to Japan, while the *Cypselurus* are

salted and sun-dried, forming the major protein source for the people.

The *pesisir* people have played the major role in the exploitation of Indonesia's valuable marine resources. They have developed into a specialized class of harvesters who acquired an amazing and detailed traditional knowledge of fish populations, fish behavior and reproductive habits, star-based navigation, lunar forces and tides, and other oceanographic, current, and seabed conditions.

In contrast to Oceania, however, where islanders are said to have devised almost every form of basic marine fisheries conservation measures years ago, Indonesian dualistic perceptions of the sea have limited the exploitation of those