Coastal tourism development in Southeast Asia: relevance and lessons for coastal zone management

P.P. Wong

Department of Geography, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260

Abstract

The increasing demand for resorts has brought about substantial changes in the spatial and structural patterns of coastal tourism development in Southeast Asia. While unplanned resort development has resulted and will continue to have negative impacts on the coastal environment, integrated resort development will increase significantly in future. Islands, which often are ideal locations for resorts, are more vulnerable because of their limited resources and size. Coastal tourism development has often insufficiently understood the coastal environment. The tourism experience provides valuable lessons for coastal zone management: the necessity for Environmental Impact Assessment, management of increasing tourist numbers, evaluation of small-scale resort development, consideration of conservation, defining and revising planning standards, and aiming for sustainable development. © 1998 Elsevier Science Ltd. All rights reserved.

1. Introduction

Generally, tourism at the coasts is associated with a wide variety of development activities, environmental impacts and coastal management problems [1]. The impacts are classified variously: environmental, economic and sociocultural, positive or negative, direct or indirect, immediate or cumulative, short-term or long-term. A preliminary ESCAP [2] study has identified and classified the major impacts by tourism on the coastal resources of Southeast Asia.

As the coast is used for other purposes the trend is towards better management of coastal resources, including tourism development. For management purposes, the coast is considered in terms of coastal resources or ecosystems with various types of activities.
Southeast Asia is currently one of the most important and fastest growing tourist destinations in the world but enormous differences exist between the various countries [3, 4]. Singapore, Malaysia and Thailand are in the top league, with Indonesia and Philippines fast developing; Brunei allows its tourist industry to develop at a slower pace; and Vietnam, Cambodia and Burma have only began to develop their tourist industry.

Coastal resorts constitute a growing attraction of the Southeast Asian tourism. This paper focuses on aspects of immediate relevance to coastal zone management: the demand and distribution of coastal resorts, impacts of tourism resort development and insufficient understanding of the coastal environment. From the coastal tourism experience, this paper will consider the lessons that are useful for coastal zone management.

2. Demand for and distribution of resorts

Southeast Asia possesses the basic resources for coastal tourism — sandy beaches, coral reefs, thousands of islands and a rich cultural heritage to complement coastal tourism development. Coastal resorts in this region are basically a post-war phenomenon and they range from the basic A-frame huts to integrated resorts [5]. Their development could be approximated by various general evolutionary models of increasing complexity [6–8] including one proposed for bays between headlands [9].

2.1. Changing demand

Accessibility has remained a significant factor in coastal tourism development in Southeast Asia. Before the Second World War, poor accessibility was the single most important factor limiting tourism development [6]. Today, road access is still important for resorts near population centres, for example, Pattaya relies on its proximity to Bangkok for international tourists. For longer distances, the airport is necessary, as in the case of Bali, Phuket and Ko Samui. The provision of direct air links is often the key to improve visitor levels in resorts [10]. This factor will remain and influence the next generation of beach resorts.

Each major resort has its own colourful past and perhaps the best known is Bali, which caught the eyes of Western tourists in the 1930s [11]. Historically, the first beach resort in Southeast Asia is Hua Hin in southern Thailand, developed after the 1910 visit by a brother of King Rama IV [6]. However, coastal tourism in Southeast Asia in the immediate post-war years was slow to grow. Development was constrained by additional factors of political unrest, civil wars and economic instability. Only some isolated beach bungalow development took place, for example, Batu Ferringi in Penang, Malaysia.

The 1960s and 1970s saw a combination of rising affluence in the countries that generated tourists, i.e. the developed countries, and falling costs in real terms, of travel to this region. These created the boom period for coastal tourism [3, 12]. Other contributory factors included increased infrastructural support provided by the public
sector and active participation by private sector. Coastal resorts were virtually clones of one another giving rise to the typical resort of Southeast Asia: apartment-like blocks located near the beach, well-equipped with recreational amenities and facilities, and including a swimming pool.

From the 1980s, the move to create or cater to specific market segments saw a diversity of resorts, some classified as exclusive, upmarket, 'fantasy', etc. Some have distinctive architecture [13]. The trend was also to more integrated resorts that could provide a wider range of facilities and recreational activities.

Industry forecasts for coastal tourism development in Southeast Asia in the 1990s remain optimistic. The strong demand comes not only from Europe, East Asia and Oceania but Southeast Asia itself. There is a shift to more beach holidays at the expense of both business and holiday travel in the region, with Indonesia to gain most. Also, the private sector plays an increasing role in resort development in the region, in contrast to the 1970s and early 1980s when the government had a predominant role [14].

2.2. Distribution of coastal resorts

A comprehensive picture of the distribution and types of coastal resorts in region is difficult. This depends on the definition and classification of resorts, and the availability and reliability of information, particularly on resorts catering to domestic tourists [5, 6, 10, 15].

Fig. 1, a refinement and revision of an earlier map [5] shows coastal resorts in Southeast Asia that have generally gained an international status. These are grouped into pioneering, emerging and established resorts based on a classification used by Horwath Asia Pacific [16]. Selective major local resorts are indicated, and they predominate in Indonesia and Philippines, a reflection of the abundance of islands and a long coastline. The international resorts and better-known local resorts are well covered in international guides, but locally published guides sometimes provide additional information on minor resorts.

3. Impacts from coastal tourism resort development

Much has been written on the various impacts of tourism development in Southeast Asia, particularly on Indonesia [11, 17, 18] and Malaysia [19, 20]. The emphasis here will be on the impacts of tourism development on the coastal environment.

3.1. Unplanned development

Coastal resort development in Southeast Asia has largely been unplanned and spontaneous in order to meet tourist demand (Plate 1). This is encouraged by the developers' pursuit for profits, the slow response by governments to the rapid development and the lack of little or no enforcement, although legislation may be present. Many resort developers were also ignorant of the physical environment, even in simple aspects that affected their resorts.
Fig. 1. Coastal resorts of Southeast Asia. Note that some coastal resorts are incorporated under the names of islands that are better known to tourists, e.g. Kuta and Nusa Dua are on Bali (Indonesia). Batu Ferringi is on Penang (Malaysia).
Plate 1. Beach resort with some typical adverse impacts on the coastal environment—polluted water, stream mouth problem, and inadequate setback and coastal protection.

Pattaya presents the best example of unplanned and spontaneous development in Southeast Asia. It is the region's most intensely developed coastal resort and its image has been strongly associated with the existence of a distinct 300-m stretch of bars, nightclubs and massage parlours [10]. The consequences of its unplanned development on the coastal environment remain critical.
rapid hotel development with detrimental impacts on the coastal environment and concomitant neglect on other infrastructure, such as roads and sewerage treatment plants.

3.2. Integrated resort development

The integrated resort is a form of planned tourism development designed to avoid the consequences of unplanned development [28, 29]. The emphasis is on planned environments in which a number of hotels share the infrastructure and facilities. The hotels benefit from cost efficiencies and economies of scale in facilities, services and management not enjoyed by single entities. The use of a master plan ensures controlled development with effective use of resources while maximizing benefits for all. Although the hotels come under different developers and generate competition, the overall development of the resort is under one agency.

Nusa Dua in Bali is the first integrated resort in Southeast Asia in which several important resort-planning principles have been adopted [30]. The principles with implications for the coastal zone include staged development, the orientation of hotel sites to the beach with proper setbacks, public corridors for access to the beach, the provision of a separate sewage collection and treatment plant, integrated landscaped park with links to offshore islands and various zoning regulations. Nusa Dua is now used as a model by Indonesia in the development of other areas with tourism potential.

In contrast to Nusa Dua, which is a government-sponsored integrated resort, Laguna Phuket in Thailand is Southeast Asia’s first private sector integrated resort. Laguna Phuket adopts similar principles in planned environment and controlled development. But being under one company with wide experience in the hotel industry, it is able to maintain an appropriate pace in the development of hotels, so as not to cause an oversupply of rooms. It serves as an example of a successful private sector undertaking in integrated resort development.

However, the integrated resort cannot be a panacea for unplanned development. Over the years, uncontrolled development has taken place outside Nusa Dua [31]. This suggests that more comprehensive planning for the area larger than the resort is required. The problem has remained in Nusa Dua and serves as a reminder to others to consider a larger plan. The regional authorities will have to consider such plans that are outside the control of the resort development agency.

Also because of their size, adequate financial and supporting resources are critical for seeing integrated resorts through their development. Two integrated resorts have not achieved their objectives because of financial difficulties. Tanjung Rhu resort on Pulau Langkawi (Malaysia) was scaled down to one beach hotel and one condominium. The proposed Desaru resort on the east coast of Johore, Peninsular Malaysia, was aborted when the developers were unable to put up a completion guarantee.

Attention is now on the Bintan Beach International Resort south of Singapore (Fig. 2), which has certain differences from the other integrated resorts in Southeast Asia. With an area of 23 000 ha it is more than 60 times larger than Nusa Dua; in fact, it could be considered to be an amalgam of integrated resorts. As a joint project
Fig. 2. Bintan Beach International Resort.
between two governments (Singapore and Indonesia) it enjoys strong public and private sector support. Being close to Singapore, it has the advantage of easy and rapid access to a gateway with international tourists. It is estimated that the resort will receive 1.5 million visitors by the year 2000 [32]. A management agency takes charge of the resort and has completed the infrastructure for phase one in which individual lots are being developed.

Some additional insights to integrated resort development come from the development on Bintan. Although Environmental Impact Assessment (EIA) was required, some initial problems were encountered in implementation. Too much vegetation was cleared and mitigation measures were inadequate to cope with heavy rainstorms under equatorial conditions. Development guidelines were provided but more details have to be worked out to meet the needs of developers of individual lots. There was a need to resolve certain cross-boundary problems, such as the necessity to maintain a green belt, diverting drainage from shared catchment areas, or the provision of green corridors for animals to move about. As yet, co-ordination between planning inside and outside the resort is absent. The possibility of unplanned development at the boundary of the resort cannot be ruled out as has happened at Nusa Dua.

3.3. Small island tourism development

Islands are highly sought after for resort development, as they often provide an ideal combination of beaches, clear water, reefs and dramatic landforms. Small islands warrant more detailed attention. They are highly vulnerable as their resources, such as beaches, coral reefs, mangroves, etc., are often concentrated in small areas. Their fisheries and subsistence economies, if present, are in danger of being transformed by even modest scale tourism development. Compared with small continental islands, coral islands and atolls are even more vulnerable. They are small in area and barely above sea level, which increases their vulnerability. The tourist impacts on small islands can therefore be made more severe by their limited resources and small size and this can reach a critical level easily, with consequences for coastal zone management.

From field visits to various small tourist islands in Southeast Asia, potable water supply, sewage and waste-water treatment and solid waste disposal constitute the basic problems of both small islands and coral islands. Boracay provides a vivid reminder of the severity of these basic problems arising from unplanned tourism development on a small island [33]. With an area of about 1083 hectares, Boracay was developed as a destination for budget travellers from the early 1970s. By 1996, about 210 resorts catered to more than 151,000 tourists in the first 11 months of the year. Over the years, the island has suffered from a shortage of potable water as a result of continuous tapping of the groundwater. Also, the resorts have septic tanks, but no safeguard against leakage of waste-water into the groundwater. Tap water is considered not suitable for drinking, thus making the consumption of imported bottled water necessary. One resort has a desalination plant to treat the groundwater. Waste-water also threatens the quality of the seawater; in recent years, the pollution level became so critical that algal blooms occurred along the coast from January to
April. Some solid waste is buried, while some is burnt at an under-capacity incinerator. Recyclable materials are taken out. Several proposed large-scale tourist projects will place a demand for more water. A golf course under construction in early 1997 has to depend on water brought in daily by a water barge. The long-run solution to the water-supply problem on Boracay is a water pipeline from the main island of Panay.

The problem of potable water can be equally serious on other small tourist islands elsewhere in Southeast Asia. On some tourist islands off the east coast of Peninsular Malaysia the pumping of ground water has led to the ingress of salt water [34]. On Pulau Rawa, the local ground water can only be used for bathing; potable water has to be brought to the island in jerry cans and stored in a water tank. The laundry is taken to the mainland for washing [35]. Too small to generate its own water supply, Ko Nangyuan in the Gulf of Thailand depends on water brought in daily by boats from a larger and nearby island, Ko Tao. Pulau Manukan, which is off the coast of Kota Kinabalu in Sabah, supplements its well water from a desalination plant of 18,000–20,000 litres of water a day.

Solid waste on tourist islands continues to be a major problem. On Ko Samui, solid waste disposal, especially of glass bottles, is a major problem and the waste is buried in coconut plantations. The tourists generate 2.56 litre/man per day of waste, but district authorities can only collect 35% of this [101]. Solid waste disposal is also a problem on the tourist beaches of Ko Pha-ngan. To reduce the solid waste problem on Ko Nangyuan, plastic bottles are denied entry to the island. Drinking water is sold in glass bottles, which can be recycled.

4. Insufficient understanding of the coastal environment

Traditionally, knowledge of the coastal environment has been strong among fishermen and coastal villagers. Specific coastal problems, such as high wave energy during onshore winds, floods and coastal erosion, have not escaped the attention of authorities. For example, Malaysia has completed a nation-wide study on coastal erosion [36], which forms the basis of subsequent measures for coastal protection and river mouth training.
Tasik Ria on the north coast of Sulawesi, Indonesia, the coast has a narrow sandy beach that is protected by mangroves and a wide coral flat. The clearing of the mangroves had led to coastal erosion and further clearing of the mangroves at both ends of the resort will result in more erosion. To mitigate the erosion, sea walls have been constructed in front of the hotel and south of the hotel. In the tourism development proposals south of Kota Kinabalu, almost all the individual proposals show little physical justification for their reclamation or the consequent impacts on the adjacent coast (Fig. 3). Overall, the proposals show the need for a more coordinated approach to the coast, if the nearshore zone is to be reclaimed for coastal tourism development.

4.1. Monsoon effects

Within Southeast Asia, the reversal in wave action, sand movement and currents, seasonal flow and water levels in rivers and seasonal marine life are generally related to the monsoons or seasonal wind systems. The northern or winter monsoon occurs from November to February and the southern or summer monsoon is from May to September.

The monsoons have a strong bearing on the coastal resorts in three major aspects. The major aspect is the setback or minimum distance for buildings to be built beyond the reach of storm waves during the monsoon. On the east coast of Peninsular Malaysia, several resorts did not have a sufficient setback to avoid the impact of the north-east monsoon [37]. Similarly, on the west coast of Phuket, some hotels are affected by the south-west monsoon waves because of insufficient setback. Sand bags are used to prevent sea water entering one hotel. On the west coast of Lombok some hotels are located near to the storm berm.

The second major aspect is related to the location of a resort or its facilities near to a river mouth or channel that can be affected by the monsoon. Based on field observation on the monsoon-affected east coast of Peninsular Malaysia, the west coast of Phuket, the south coast of Bali, the west coast of Lombok, the east coast of Ko Samui and the north coast of Bintan, small river mouths close easily during the monsoons by sand bars and washovers. Attempts to stabilize the stream mouth or incorporate it into the resort setting have been difficult or not fully successful. The lagoon water gets putrid if a weir is constructed across the channel and the river mouth walls collapse easily and need maintenance.

The third aspect is related to the choice of rock headlands as sites for some resorts (Plate 2), a choice that is becoming increasingly popular. While offering superior views and a stable coastline, buildings on the headlands can be easily affected by strong winds and heavy rain during the monsoons.

4.2. Coastal erosion

Coastal erosion is a natural process, which is often caused or aggravated by coastal tourism development at some popular tourist coasts of Southeast Asia. When developers build their resorts near to the shore, they naturally wish to protect their
properties from coastal erosion. Coastal structures are often built without determining whether the threat is real or serious enough. Developers could have been misled by the seasonal beach changes.

The common approach to protecting coastal resorts has been sea walls of various types and of different materials. While most of the sea walls are of stone and concrete, local materials such as coconut tree trunks, bakau poles and bamboo, are often used
Plate 2. Resort development takes advantage of rock headland and integrates with the environment.

by the small resorts. It is generally recognised that sea walls discourage beach formation, and accelerate coastal erosion [38].

The most cited example of coastal erosion arising from tourism development in Southeast Asia is at the Tuban-Kuta beach in Bali. The erosion is caused by a combination of factors: coral mining from 1968 to the mid-1970s, the interruption to longshore drift by a 1-km extension of runway in the 1970s and 1980s across a coral reef flat that is too near its edge, and the construction of sea walls and other structures. The erosion on the northern side of the runway affected more than 300 m of beach [39]. Lubis, Kridoharto and Sikumbang [40] reported an erosion rate of 7.5 m/year north of the Pertamina Cottages, which are protected by a sea wall and tetrapods. The figure of 2 cm/year cited by Hussey [25] for Kuta beach is more likely to be 2 m/year.

The coast at Candi Dasa in southeast Bali provides a dramatic example of what hard structures can do to a sandy beach. Candi Dasa was a fishing village that had a beach and a fringing reef. Its popularity with budget tourists led to the rapid development of accommodation along the coast. With the removal of corals for construction, larger waves reached the coast [41]. As more sea walls and groins were built to protect the properties, the erosion worsened. A series of massive T-groins constitutes the latest measures to stabilize the situation (Plate 3). At low tide there is a narrow beach that can only be reached by staircases from the sea walls. As the beach erodes, tourism development declines as evident from the number of properties that are up for sale or left to the natural elements. Candi Dasa is a prime example of
Plate 3. T-Groin protecting the eroding coast at Candidasa.

a tourist coast that received hard coastal protection measures, which resulted in
Fig. 4. Tourism improvement projects for Pattaya.

to 22,500 tons/day to service Central Pattaya. North Pattaya and South Pattaya will be serviced by new plants with a capacity of 50,000 tons/day and 20,000 tons/day, respectively. The beach improvement includes seawalls, paths, seats and landscaping between the Pattaya Beach Road to the present beach. Land reclamation for a terminal complex is to be carried out south of the present pier, and beach nourishment is planned for the entire beach. A temporary tourist pier will be constructed and used until the land reclamation is completed. The Third Pattaya Coastal Road, which runs inland and parallel to the coast, is to provide access and relieve the pressure on the existing two beach roads [42].

Similarly, several strategies and measures have also been taken to alleviate the environmental degradation at Patong, the most developed tourist beach on Phuket.
The measures are related to coral reef protection, solid waste management and water quality management [24].

It is obvious that measures to alleviate unplanned tourism management must be considered in coastal zone management plans before the situation gets worse. While such measures are clear, there are implementation problems due to lack of finance, shortage of personnel, agency rivalry or lack of political will. For example, in the action plan for Ko Samui, the lack of managers is a major problem. For Boracay, the rivalry between private and public interests has delayed the construction of the water pipeline from Panay.

5.2. Necessity for environmental impact assessment

The impact of unplanned tourism development has clearly shown the need for the use of EIA for tourism projects. Although EIA exits in many Southeast Asian countries it is not required for all coastal tourism projects. For example, in Malaysia and Thailand, EIA is required only for resort projects with more than 80 rooms and developers bypass the process by breaking up the project into separate smaller entities. This has led the Thai authorities to implement additional legislation for resorts with less than 40 rooms. The maintenance of a proper setback is an important EIA requirement for coastal resorts. But having built too close to the coast, some have resorted to reclaiming the nearshore area to comply with the setback requirement.

In general, EIA legislation in Southeast Asia has not progressed far enough to include detailed checklists of short-term environmental impacts of beach-front hotel development. It also has to develop the suggested EIA guidelines for beach resort hotels that are provided in the ESCAP study more extensively [2].

5.3. Management strategies for tourist carrying capacity

As resorts continue to receive increasing number of tourists, the question is how to manage increasing numbers without incurring negative impacts. Knowing the limits to use or the tourism carrying capacity of a coastal sector or an island could help to avoid environmental deterioration, resources depletion or a decline in visitor satisfaction. Although the conceptual framework for various carrying capacities of the coastal environment has been around for some time [43], in practice it is difficult to apply.

At best, carrying capacities serve as guidelines rather than absolute limits. For example, the Japan International Cooperation Agency [44] recommended a limit of 200 rooms/km of beach for good environmental conditions in tourism development in southern Thailand. For small islands, the carrying capacity may be easier to measure as it is determined by water supply and land. Lim and Spring [45] have assessed the reef carrying capacity of Pulau Tioman based on various physical, environmental and social criteria.

The perspective on carrying capacities for coastal tourism has shifted from merely establishing the limits to identifying the conditions desired by a community and to develop management strategies to meet carrying capacity challenges. For example, the maximum carrying capacity of Ko Samui is put at 14 200 tourists/day in one study.
cited by Chudintra and Pintukanok [46], if the island is to maintain its identity. Since then, this has been translated into a revision of the island's action plan for development in the light of increasing tourists and ensuing problems [47]. Two broad development strategies have been adopted: Intensive Tourism Development to allow the island to develop its tourism services, and Sustainable Tourism Development to balance economic development and conservation of natural resources for appropriate benefits to the local population. Emphasis has been placed on the participation of more interest groups. Although the action plan is for 10 years, the development targets are identified for 5-year phases. Appropriate projects or programmes have been identified for the first phase together with statements of objectives, actions, time-frames, budgets and the agencies that are to take charge.

5.4 Small- or large-scale tourism development

While integrated resort development is likely to prevail and will find investors, the suitability, benefits and encouragement of small-scale tourism development should be considered. This is especially so for small islands with the need to integrate tourism into local economies, and at the boundaries of integrated resorts, in order to solve the problem of unplanned growth.

There is little doubt that benefits can be obtained from small-scale coastal tourism development. This is evident in the provision of accommodation, such as the 'losmen' in Indonesia or 'kampung' tourism in Malaysia, or the more ubiquitous chalet-type operations in Southeast Asia and the provision of other tourist facilities and services. The important issue is whether small-scale development is unplanned, and whether it has progressed to such an extent that it taxes the resources and creates more costs than benefits. For example, development should not be undertaken if it uses up scarce local water or food resources or creates negative impacts on the local environment.

Boracay demonstrates that small-scale tourism is workable. But when tourist numbers increase and development goes unplanned, the undesirable impact can be serious [33]. Even so, Boracay is viewed favourably by developers who planned to have large-scale development and proposed to provide a water pipe, a centralised sewerage treatment system and a proper electricity supply for the island. Elsewhere in Southeast Asia, small-scale development is also very successful, but again at a price. When not regulated it creates problems, often starting with environmental problems.

Planned small-scale coastal tourism development should be implemented more widely. Gili Tarawangan, one of three islands off the northeast coast of Lombok, Indonesia, provides a useful model. The original and unplanned 'losmen' were on the east coast of the island. They were removed in 1992 by the government to make way for a proposed large hotel and golf course. An area on the south-east end of the island was set aside for small-scale chalet development. Many former owners re-established in this area with lots laid out for tourist establishments to be at the front and residences at the back. All establishments and residences have septic tanks. Electricity is provided by a generator located at the north of the island. There are defined separate lots for shops and dive shops, a concrete jetty at the north end of the planned area, and a better path for the pony cart, which is the main transportation mode.
However, the coast fronting the new tourism area is not suitable for recreation, and tourists have to walk to the beach on the east coast where make-shift huts provide food, drinks and rental of snorkelling equipment. The potable water supply is still a problem and fresh water is brought in daily in jerry cans from Lombok. The local water supply is salty and pumped to tanks. The island continues to be popular with budget travellers, but it remains to be seen how planned small-scale development will evolve when the large hotel and golf course are established to attract large numbers of package tourists.

5.5. Increased attention for conservation

On some island resorts, the owners or developers have taken measures to protect the coral resources. But conservation measures that require the gazetting of marine parks and enforcement is necessary. There are many proposals for marine protected areas along the tourist coasts in Indonesia, Malaysia, Philippines and Thailand but problems are encountered in implementation and management [48].

For example, the Pulau Seribu islands north of Jakarta, were zoned into sanctuary, wilderness, intensive use and buffer zones in 1986 after a careful study of the conflicting uses [49]. A decade later, Yates' [50] analysis shows the major problem in implementation: there was no clear delineation of authority, inadequate funds and personnel. The success of conservation also depends a lot on local participation, going by the experience in the Philippines [51].

Tourism can be a contentious issue in areas marked for conservation. Bunaken Island off the northeast coast of Sulawesi was declared part of a National Park in
In defining planning standards, there is also a need to revise them as better technology is introduced. For example, better technology is available for sewage disposal but the main method is still the septic tank connected to a soakage pit. The main problems are costs, insufficient knowledge and not enough demonstratable projects. There is scope for demonstrating improved technology in pilot coastal tourism projects as part of the coastal zone management plan.

5.7. Sustainable tourism development

That coastal tourism should be based on the principle of sustainable development has recently been recognized in the Baguio Resolution on Coastal Resources Management, issued by the Policy Conference on Managing ASEAN’s Coastal Resources for Sustainable Development, March 1990 [52]. This resolution deserves to be further studied by countries looking at the development of coastal and marine areas of the South China Sea. There is still plenty of scope for developing guidelines on sustainable development of coastal tourism. Previous tourism experience indicates that the following aspects be included: local involvement is necessary, community responsibility and measures should be taken to avoid unplanned development outside the integrated resort, and that there is increased scope for coastal ecotourism.

Currently, coastal tourism operators in Southeast Asia can follow the sustainable development guidelines contained in the PATA (Pacific Area Travel Association) Code for Environmentally Responsible Tourism adopted at its 1991 annual meeting [53]. Although it is not mandatory or regulatory, the code provides useful guidelines for the resorts. In line with the code, the PATA Foundation has also supported specific sustainable tourism projects.

6. Conclusion

The tourist industry has become aware of the consequences of unplanned coastal tourism development, although at a rather late stage. Various measures are being taken by some resorts. Diving operators and ecotourism operators are particularly aware of the benefits of protecting the environment and have implemented various measures conforming to sustainable development.

Based on the ASEAN/United States Coastal Resources Management Project, 1986–1992, the guidelines for tourism are quite clear and evident in three areas: environmental, zoning and local involvement. Plans for tourism development should include guidelines for environmental management on sewage discharge, shoreline erosion, maintenance of beaches, coral reefs and other ecosystems and general zones appropriate for tourism. The local government and communities should be involved in implementation so that human and cultural displacement is minimized. Guidelines for use of marine areas by tourist boats, swimmers and fishermen can be developed" [54]. But coastal tourism development has yet to reach this level of integration.

There is a need to develop suitable CZM mechanisms or models incorporating tourism to suit local conditions. For example, the integrated resort cannot be applied
entirely to Southeast Asia. Each area or country needs to evolve its own model of sustainable coastal resources development in which tourism development can also bring benefits to the local population. The physical environment and the extent of local community involvement should be assessed fully for the appropriate type of coastal tourism development. Because of the high investment costs in development of coastal and marine tourism, there is decreasing support for budget tourism development. Island tourism development should be considered under integrated island/water management, as water is often a critical factor on islands. Also, CZM has to incorporate better technologies in sewerage disposal and water supply. Overall, the environment, zoning and local involvement have to be considered in a suitable or sustainable form of development.

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