

# The Role of Design in Creating Sustainability in Tourism Development: The Case of Bang Saen, Thailand

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## ABSTRACT

**T**ourism has become one of the largest and fastest growing economic sectors in the world, and it is predicted that the significance of tourism will increase in the future. This long-term trend has encouraged many governments in both developed and developing countries to adopt tourism as an engine of socio-economic development. The massive, rapid and promising growth of tourism provides greater opportunities for spreading prosperity but also contributes to the transformation of natural and cultural landscapes on which tourism depends. This paper will discuss the role of design in tourism development for maintaining the landscapes upon which the sustainability of tourism depends.

**Keywords:** *Design for sustainability, sustainable tourism development, five capitals*

## INTRODUCTION

Tourism at the international level has been rapidly growing since the early 1950s. However, from the 1980s onwards, the rapid growth of mass tourism has caused many negative environmental, social, and economic impacts that increasingly outweigh tourism's developmental benefits in many tourist destinations. In response to this situation, the concept of sustainable tourism development emerged (Sharpley, 2009). The United Nations World Tourism Organization (UNWTO) provided the definition of sustainable tourism development as follows:

'Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the

environment and host communities' (UNEP and UNWTO, 2005).

This definition tries to establish a suitable balance between economic, social, and environmental aspects of tourism development in order to secure long-term sustainability. However, this definition does not propose how the stakeholders involved in tourism should behave in order to achieve such a balance in tourism development.

Natural and cultural landscapes that function as vital factors of tourism are often negatively transformed by capital investment through the creation of new man-made landscapes such as accommodations, catering facilities, tourist attractions, and transport infrastructure. These projects were initiated by capitalists, for example governments and businessmen, in order to lure

more visitors or to cater to increasing numbers of visitors (Mitchell, 1998; Iwase, 2011). Moreover, tourism growth fueled by investment has contributed to climate change by pouring greenhouse gases into the atmosphere that are negatively fed back to those landscapes (UNWTO and UNEP, 2008). Investment seeking only to amass greater profits disrupts the balance between the economic, social, and environmental aspects of tourism development. While investors create new landscapes for visitors, they hardly touch on the maintenance of natural and cultural landscapes upon which profit-making depends. When those landscapes are largely damaged by development and visitor arrivals are decrease, investors inject fresh capital for creating new man-made landscapes to attract more visitors and make more profits. However, sustaining tourism through the creative destruction and destructive creation of landscapes will one day reach a tipping point, and tourism will collapse.

The importance of maintaining stocks of the five capitals for sustainable economic development cannot be overstated. Nevertheless holistic viewpoints that reflect the voice of all stakeholders involved in tourism initiatives as an organization sharing a common destiny is largely lacking. Tourism directly and indirectly involves various stakeholders such as international organizations, national and local governments, large and small tourism related companies, local people, tourists, non-profit organizations, etc. The stakeholder’s collective actions contribute to the negative transformation of natural and cultural landscapes. If capital investment in reserve of the five capitals is made for creating proper collective actions, they will be able to make collective decisions and maintain those landscapes (Iwase and Silokwanich, 2013).

## THE FIVE CAPITALS FRAMEWORK

The Forum for the Future (2000) presented the five capitals framework to sustain activities of organizations in the long term. The five capitals composed of physical, human, social, natural, and financial capitals, are stocks, or reserves, that have the capacity to produce flows of desirable economic outputs (Table 1). Therefore, maintenance of the stocks of five capitals is necessary for sustainable economic development (Porriitt, 2007).

## STUDY AREA AND METHODOLOGY

### Study area: Bang Saen

This study was conducted in Saensuk town located on Chonburi Province in the Eastern Region of Thailand, approximately 90 kilometers from Bangkok (Figure 1). The town, more commonly known as Bang Saen, was established in 1943 as the first weekend resort for the Thai public. As of 2010, Bang Saen consists of 19 communities with a registered

**Table 1:** Definition of Five Capitals

Types of capital	Definitions
Physical capital	Assets that are used to produce products and services, such as infrastructure, buildings, and equipment.
Human capital	Productive potential of individual people, such as work skills, training, and knowledge that contributes to the improvement of production of products and services.
Social capital	Social networks, norms, and institutions that support a cohesive society and facilitate collaboration and cooperation among members. It refers to stocks of social trust, norms and networks that people can use to create social cohesion and collectively solve common problems that threaten sustainability.
Natural capital	Natural assets such as biodiversity and ecosystems that provide ecological services that directly and indirectly link to production of products and services.
Financial capital	Money that is used to start or maintain operations of governments and companies such as personnel expenses and maintenance costs.

Sources: Ekins (2008); Porriitt (2007)



Figure 1:  
Map of Thailand and Location of Bang Saen  
Reproduction from Google Map, accessed on July 13, 2012

population of 43,840 people. The land area of the town is 20.268 km<sup>2</sup>. The economy of Bang Saen is largely dependent on tourism. The majority of visitors travel by private car from Bangkok. There were 1,343,897 registered tourist arrivals in 2009 generating revenue of 3.17 billion baht (1 USD = 30.80 Baht) (Saensuk municipality, 2010a). Bang Saen was chosen as the case study site because Bang Saen is one of the few tourist destinations in Thailand that has experienced a serious decline in tourism in terms of tourist arrivals in the past. The development of tourism led to the collapse of tourism in Bang Saen in the past and various transformations of landscapes by stakeholders has newly revived tourism in the town.

## DATA COLLECTION METHODS

First, the researcher collected documents related to Bang Saen tourism published by public and academic sectors such as Thai government agencies, the Japan International Cooperation Agency (JICA), Saensuk municipality, and Thai universities. Types of document included annual reports, statistics, research reports, treatises, declarations, development plans, anniversary issues, newspaper articles, dissertations, brochures, and public relations materials. Secondly, in-depth interviews were conducted with 75 people from August 2010 to March 2011. The researcher chose 75 interviewees in order to achieve diverse yet verifiable information. The stakeholders were divided into two groups: municipality officials and locals. A purposive sampling method was utilized to select interviewees in the first group, which had a sample size of eleven. This group was comprised of the mayor, town councilors, municipality officers, and waste workers. This method of selection was employed because informants who held necessary technical and detailed information on tourism development in Bang Saen were limited to this group. Data from interviewees in this group is represented using 'M' (e.g. M1, M2, ...Mx), which stands for municipality officials. A snowball sampling method was employed to select interviewees in the second group, which had a sample size of 64. This group included beach vendors, restaurateurs, hoteliers, proprietors of convenience stores, owners of other businesses, formal and informal recyclers, and householders. Snowball method was selected because it was useful for finding people who have a vested interest in Bang Saen tourism. Data from interviewees in this group is represented using 'L' (e.g. L1, L2, ...Lx), which stands for locals.

## DATA ANALYSIS METHODS

Capital investment in tourism development in Bang Saen was analyzed based on the definitions of the five capitals as shown in Table 1. Secondly, content analysis of qualitative data obtained from in-depth interviews was conducted by summarizing how investment in each type of capital supported activities of the stakeholders and how their activities have transformed the landscapes of Bang Saen throughout history. The history period was divided into three phases. The first phase covers from the early 1940s to the late 1960s. The second phase is from the late 1960s to the late 1980s. The third phase ranges from the late 1980s to 2011. The phases were divided in this way because the landscape of Bang Saen was transformed in different ways by stakeholder activities within each phase.

## RESULTS

### Landscape of Bang Saen in the first phase (from the early 1940s to the late 1960s)

Before the early 1940s, Bang Saen was a quiet rural community where reserves of natural capital were abundant. The northern highland of Bang Saen is called Khao Sam Muk hill. While trees covered the upper part of the hill, mangroves and reefs covered the lower part. Moreover, the hill was also a habitat for snakes, wild rhesus monkeys, crabs, small fish, and shells. The southward area of the hill jutting out into the sea is called Laem Tan. This area had many trees, and reefs covered its coastline. The reefs provided habitats for small fish, crabs, and shells. The coastline further south of Laem Tan was called Bang Saen beach and Wonnapa beach. The beaches were covered by pine trees, rain trees, ebony trees, sugar palms, coconut trees, mangroves, beach morning glories, and puncture vines (Mahakhan, 2009). This vegetation helped prevent the coastal erosion of the beaches, and some of the plants were used for medicines (L8, pers. comm. Sep 6, 2010). The beaches provided habitats for small crabs and bean clams and feeding grounds for domestic animals. Marine debris, such as water plants and wood, drifted ashore onto the beaches (L7, pers. comm. Sep 23, 2010; M6, pers. comm. Aug 8, 2010).

Locals were engaged in fishing, agriculture, and trade. They reaped the benefits of the flow of natural

capital stocks (Saensuk municipality, 2010b). Fishing villages dotted the shore, a farming village was established situated on the right side of the provincial road, and a market for trading, called Non Mong market, was set back from the provincial road (M3, pers. comm. Aug 5, 2010). This provincial road was a dirt road and served as the only road connected to national highway that led to Bangkok (Kakizaki, 2002). Additionally, one local road connected Bang Saen to Ang-Sila, situated to the north of Bang Saen. The total population before the early 1940s was estimated around 1,000 people (Iwase, 2014). Figure 2 shows the landscape of Bang Saen before the early 1940s. However, since the early 1940s onwards, the landscape was gradually transformed into a seaside resort area by tourism development that aimed to establish the first leisure-place for all Thai citizens. This could not have happened in Bang Saen without interventions such as direct investment from major investors PlaekPibunsongkhram<sup>1</sup> and SaritThanarat<sup>2</sup>. They invested in the physical capital of constructing of the seaside resort and its supporting infrastructure (e.g. roads, sidewalks along the beach, and water and electricity supply), and used financial capital that was necessary to establish a state enterprise that managed the resort (Mahakhan, 2009). Their capital investment improved the infrastructure of Bang Saen, but at the same time, pine, rain, and ebony trees, sugar palms, mangroves, beach morning glories, and puncture vines were removed from Bang Saen beach, and more coconut trees were planted to welcome visitors. After Sarit died suddenly on December 8, 1963, the major investor was absent for the rest of this phase. Consequently, direct investment ceased until Bang Saen became a *Sukhaphiban*<sup>3</sup> Saensuk in 1968. The resort staff confronted difficulty in running their business because they could not create enough financial capital by themselves, an issue caused by insufficient human capital (Iwase, 2014; NEB, 1978). Although locals were engaged in fishery, agriculture, and trade, many of them started to become involved in tourism, as tourism development provided impetus for them to change their jobs. The direct investment encouraged locals to invest in physical capital,

such as construction of catering facilities, purchase of beach vendors' equipment, purchase of beach chairs and swimming rings in order to rent, and production of tourist boats (TOT, 1965; L27, pers. comm. Aug 3, 2010; M8, pers. comm. Aug 20, 2010; L35, pers. comm. Sep 1, 2010). Furthermore, tourism development in Bang Saen attracted people from outside, and they invested in physical capital, including the construction of restaurants, souvenir shops, grocery shops, and grilled chicken shops around Bang Saen beach (L37, pers. comm. Nov 25, 2010; L9, pers. comm. Aug 2, 2010; M8, pers. comm. Aug 20, 2010). The population of Bang Saen in the late 1960s was 16,494 people, an increase of about 16 times compared to the early 1940s (Pirapinyo, 1985). The influx of people caused developers to invest in physical capital such as shop houses and townhouses in Bang Saen in order to accommodate the increasing population (L48, pers. comm. Sep 1, 2010).

Tourism developments initiated by the stakeholders described above started to attract Thai visitors to Bang Saen. They came from Bangkok and its vicinity during the weekend and on public holidays for pleasure seeking. Modes of transportation included sailboats from Chonburi, private cars, tour buses, and scheduled route buses. The number of tourist arrivals during this phase was difficult to estimate because interviewees were not able to estimate. Visitors experienced the place through picnics<sup>4</sup>, natural walks, sea bathing, gathering crabs and shells, and recreation activities e.g. tourist boating, renting beach chairs and swimming rings, beach showers, beach hawking, and buying snacks, drinks, dried marine products, and souvenirs) (L48, pers. comm. Sep 1, 2010; L26, pers. comm. Oct 15, 2010; L9, pers. comm. Aug 2, 2010; L52, pers. comm. Nov 15, 2010).

Investment in physical capital destroyed natural capital stock in Bang Saen and transformed the landscape of this place from a quiet rural community into a nationally important seaside resort. The changes of the five capital stocks in the first

<sup>1</sup> 3rd Prime Minister of Thailand between December 16, 1938 and August 1, 1944 and April 8, 1948 and September 16, 1957.

<sup>2</sup> 11<sup>th</sup> Prime Minister of Thailand between October 20, 1958 and December 8, 1963.

<sup>3</sup> Sanitary districts were sub-autonomous entities that existed in Thailand until 1999.

<sup>4</sup> Many tourists bought seafood at Nong Mon market and enjoyed barbecues on the beach (L48, pers. comm. Sep 1, 2010; L7, pers. comm. Sep 23, 2010).

phase, which increased the physical capital stock and decreased the natural capital stock, resulted in positive impacts, such as the improvement of

infrastructure, job creation, and increase in local revenues, but at the same time, it generated negative impacts, such as the growth of slum

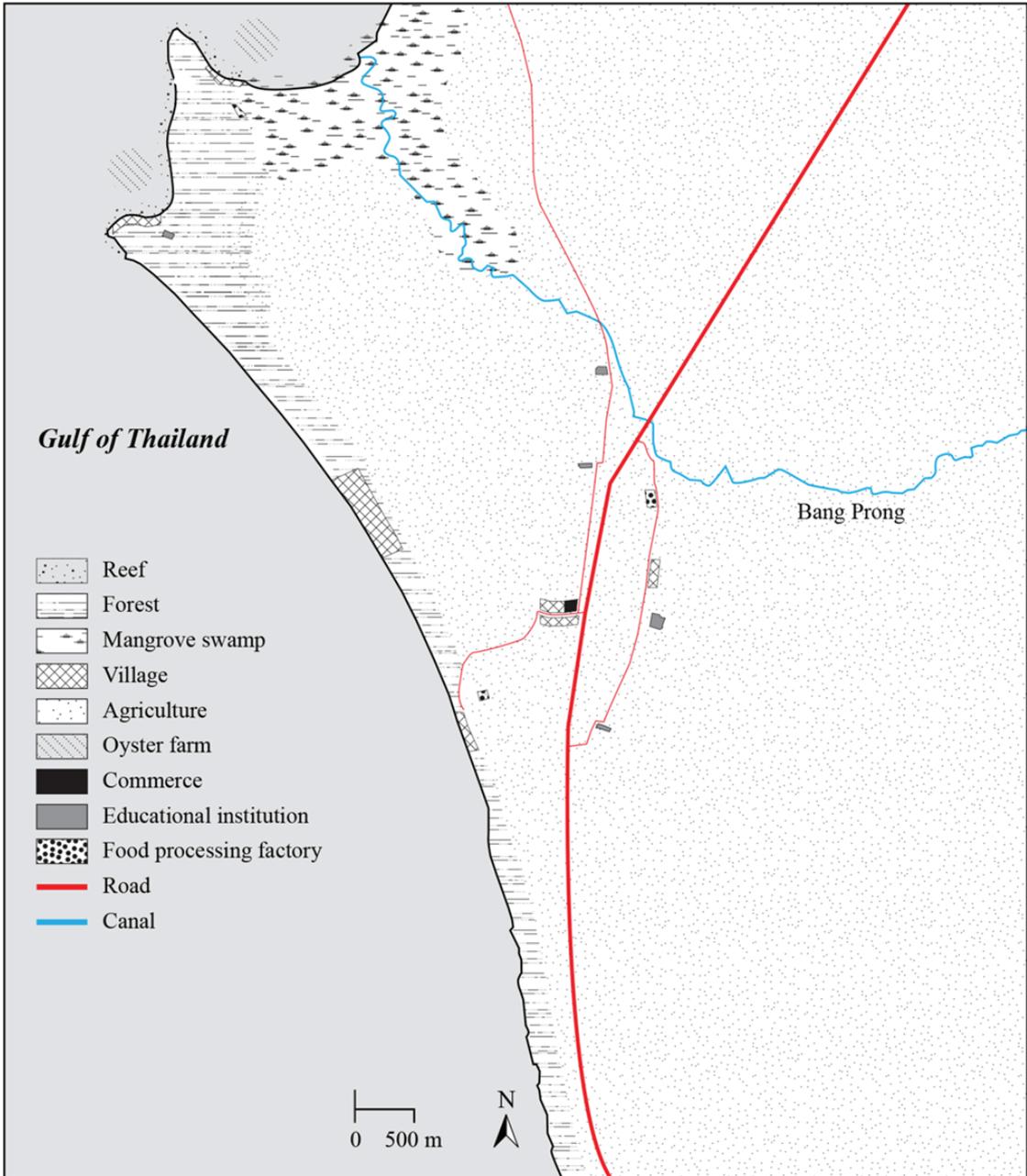


Figure 2:  
Landscape of Bang Saen before the early 1940s  
Source: Iwase (2014)

communities, waste problems, and the disappearance of sea animals. Moreover the stakeholders could not cooperate in addressing those negative impacts

due to the absence of investment in social and human capitals. Figure 3 shows the landscape as transformed by stakeholder activities in the late 1960s.

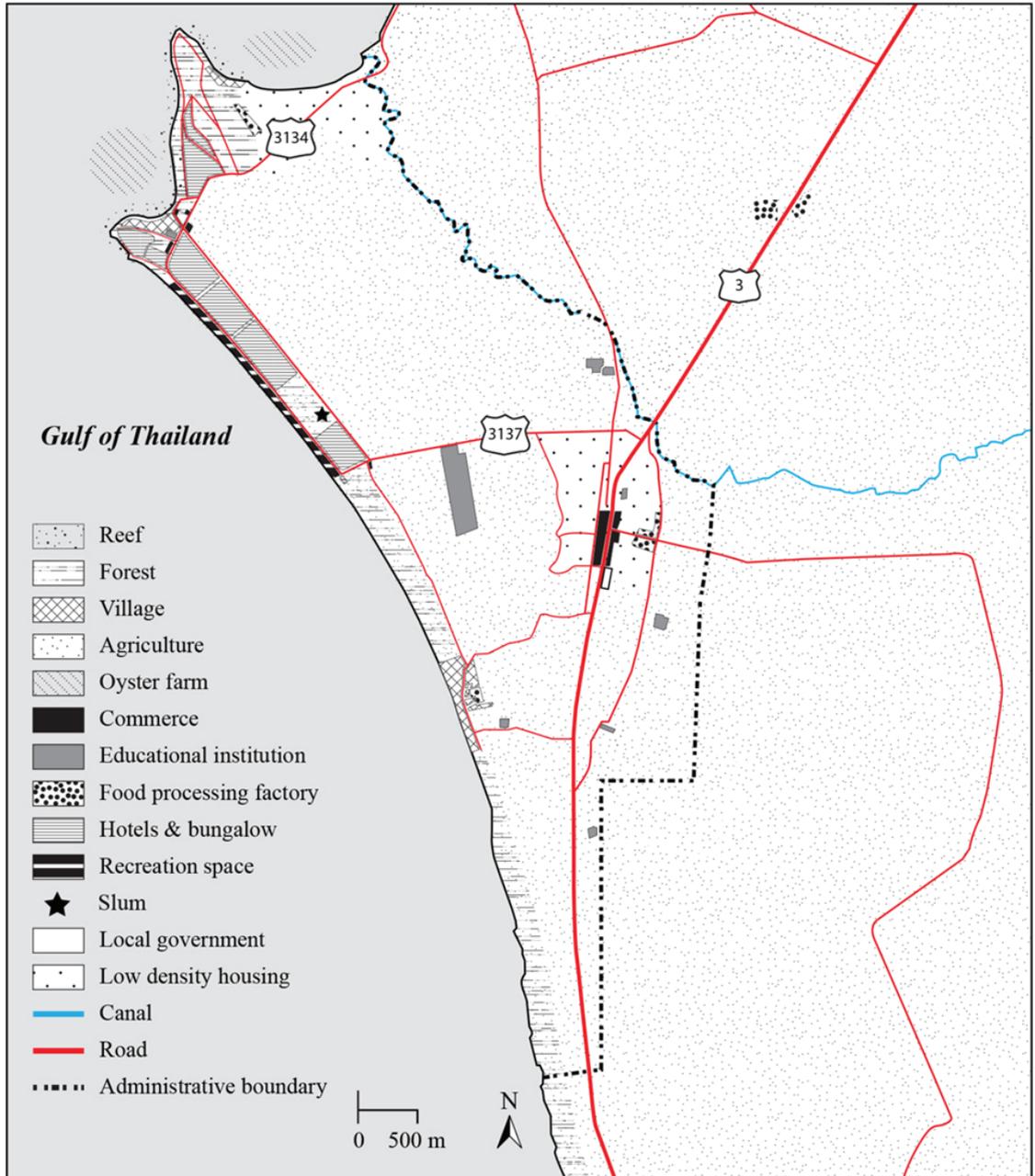


Figure 3:  
Landscape of Bang Saen around the end of 1960s  
Source: Iwase (2014)

## Landscape of Bang Saen in the second phase (from the late 1960s to the late 1980s)

In response to the revision of *Sukhaphiban* Act, Bang Saen became a *Sukhaphiban* in 1968. The administrative area (15.2 km<sup>2</sup>) was determined, and a *Sukhaphiban* or “sanitary committee”<sup>5</sup> was established (M3, pers. comm. Aug 5, 2010). This revision forced the committee to take the role as one of the major investors in tourism development during this phase. The committee had two main revenue sources, consisting of the Ministry of Interior’s annual budget and locals’ payments (e.g. store taxes, signboard taxes, and housing taxes) (Pasong, 1999; JICA, 2001). However, the Ministry of Interior restricted the political power of the committee for local development because statutory responsibilities were confined to public health issues (e.g. solid waste management) in the designated area only. Therefore, at most, all the committee could do was investment in physical capital, such as facilities that would improve public health. For example, they constructed a parking lot to be used exclusively by buses to reduce traffic jams, and they constructed commercial buildings (Thai-style 1-story shop houses) to organize tourism-related businesses (e.g. pay toilets and showers, restaurants, and bike rental shops) in the name of the management of public health in the beach area (Figure 4). Since the *Sukhaphiban* lacked both the financial power and authority to develop Bang Saen tourism, Somchai Khunpluem, popularly known as Kamnan Poh, became another major investor in tourism development during this phase. He made large investments in Bang Saen tourism development beginning in the early 1980s. By taking advantage of his status as Kamnan (sub-district headman) of the *Sukhaphiban*, he undertook the *Sukhaphiban*’s sanitary projects and built most of the roads in Bang Saen from the late 1970s (MeawKanmuang, 2013). Moreover, he invested in physical and financial capitals to establish tourism-related businesses such as constructing and managing hotels, business spaces, and seafood restaurants in Bang Saen beach and Laem Tan (L7, pers. comm. Sep 23, 2010). Further tourism development fueled by those major investors caused locals to change their

jobs from fishery to tourism-related livelihoods and attracted more people from outside. They invested in physical and financial capitals to start tourism-related businesses (e.g. bicycle rentals, motorcycle rentals, scooter boats, banana boats, beach vendors’ equipment, guesthouses, street stalls, seafood restaurants, grocery stores, pay toilets and showers, souvenir shops, etc.) around Bang Saen beach and Laem Tan. The population of Bang Saen at the end of 1980s was 32,997 people (National Statistical Office, 1993). The influx of people fostered the urbanization of Bang Saen and degraded the rural atmosphere because it encouraged developers to invest in the physical capital of shop houses, townhouses, and apartments in Bang Saen in order to accommodate the increasing population (Iwase, 2011; L37, pers. comm. Nov 25, 2010; L9, pers. comm. Aug 2, 2010; L52, pers. comm. Nov 29, 2010; L10, pers. comm. Jan 19, 2011; M8, pers. comm. Aug 20, 2010).

Tourism was further developed by the aforementioned stakeholders, and as a result, more Thai visitors were attracted to Bang Saen. They came from Bangkok and its vicinity during the weekend and on public holidays by private cars, tour buses, and

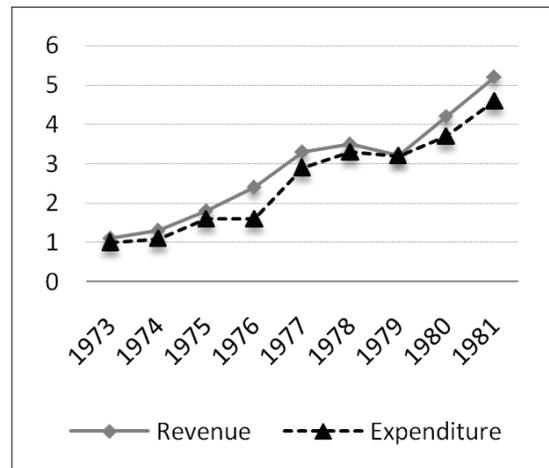


Figure 4: Revenue and Expenditure of Sukhaphiban Saensuk between 1973 and 1981  
 Reproduction from: National Statistic Office (1980, 1981)  
 Unit: million baht  
 Note: Data between 1982 and 1988 not available in records.

<sup>5</sup> The Sukhaphiban committee was composed of a district chief officer from the MOI, assistant district chief officers from the Ministry of Interior, Kamnan (sub-district headman), Phu Yai Ban (village headmen), and elected members from residents (Pasong, 1999).

via scheduled route buses. They experienced the place through enjoying picnics, natural walks, sea bathing, gathering crabs and shells, and recreation activities provided by the stakeholders. The above stakeholders invested only in physical and financial capitals to offer pleasure to the visitors, and therefore

visitors did not take any interest in helping to maintain the cleanliness of place where they were spending their holidays (L48, pers. comm. Sep 1, 2010; L26, pers. comm. Oct 15, 2010; L9, pers. comm. Aug 2, 2010; L52, pers. comm. Nov 15, 2010).

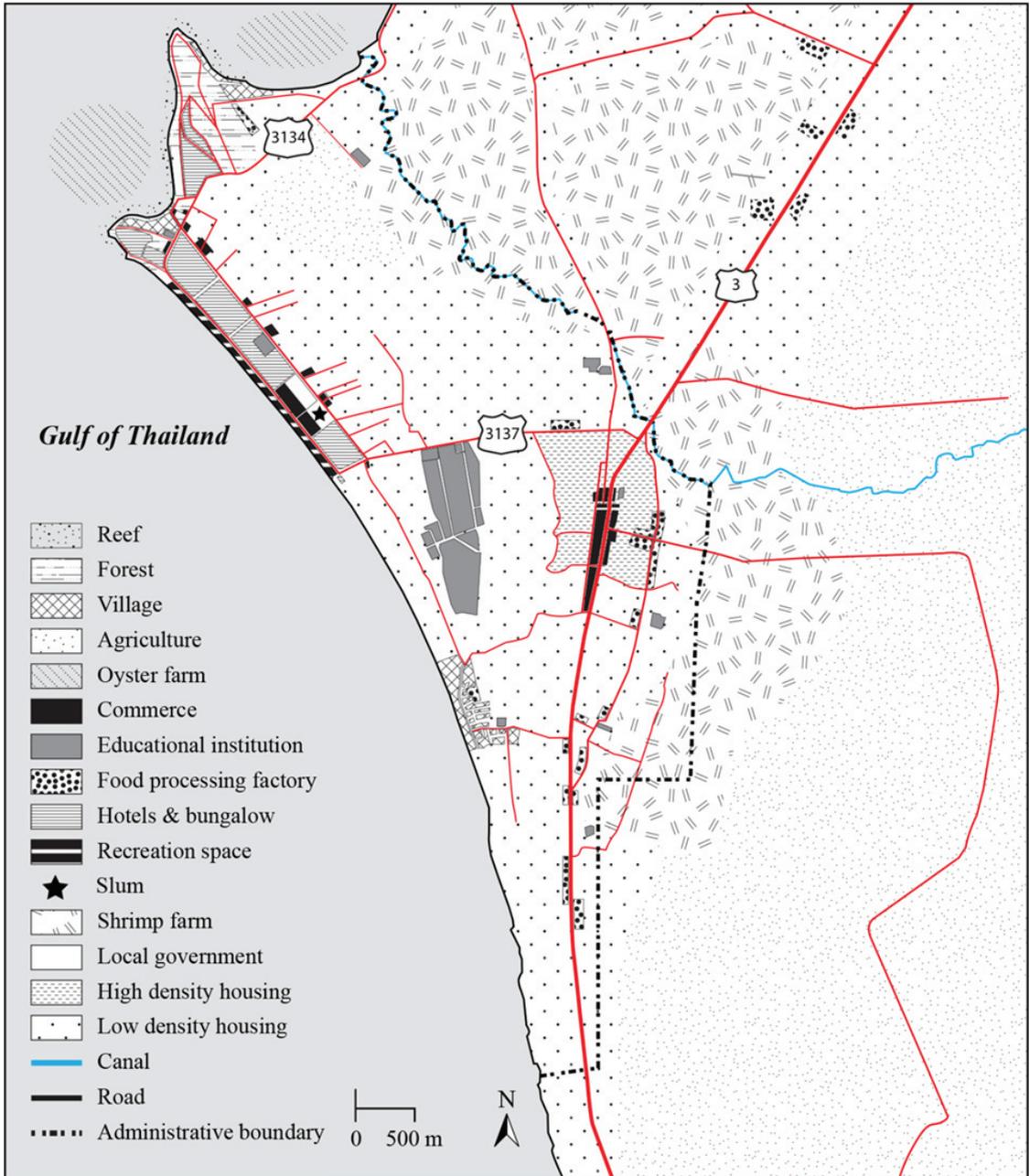


Figure 5:  
Landscape of Bang Saen in the late 1980s  
Source: Iwase (2014)

Investment in physical and financial capitals, without coordinated tourism development policies, plans, and management systems, destroyed more natural capital stocks in Bang Saen and transformed the landscape of this place to attract more visitors and to make more profits. Figure 5 shows the landscape as transformed by the stakeholders' activities in the late 1980s. The changes of the five capitals in the second phase, which increased more the physical and financial capital stocks and decreased the natural capital stock, resulted in positive impact, such as the improvement of infrastructure, job creation, and an increase in revenues, but at the same time, they generated more serious negative impact than the first phase, such as more littering, disappearing sea animals, traffic jams, a rise in slum communities, overcrowding, air pollution, seawater pollution, and noise pollution, than the first phase (NEB, 1978; L50, pers. comm. Sep 22, 2010; L26, pers. comm. Oct 15, 2010; L21, pers. comm. Oct 15, 2010; L15, pers. comm. Oct 18). Moreover, seawater pollution affected tourism in Bang Saen; the pollution was caused by the expansion of shrimp and oyster farming and food processing factories stimulated by the government's agro-industry policies (L25, pers. comm. Aug 9, 2010; National Economic and Development Board, 1972; Paitoonpong and Abe, 2004). However, the stakeholders could not cooperate in addressing negative impacts due to the absence of investment in social and human capitals.

Finally, negative impacts began to overwhelm positive ones, and the environmental degradation gradually kept visitors away from this place. As a result, tourism revenues were lower starting in the late 1970s (Figure 6).

### Landscape of Bang Saen in the third phase (from the late 1980s to 2011)

As a result of the capital investments made by KamnanPoh for tourism development (e.g. slum replacement and road construction) during the late 1970s, he became the first Mayor of the *Thesaban*(municipality) Saensuk when the *Sukhaphiban* Saensuk was upgraded to the *Thesaban Tambon* (town) status in 1988 (L38, pers. comm. Sep 21, 2010; L34, pers. comm. Dec 2, 2010; Akagi, 1995; Bangkok Post, 1989). This upgrade led to increases in revenue, expenditure limits, and political power of the *Thesaban* (Figure 7). As a result, the *Thesaban* became one of the major investors in tourism development in this phase. However, this gave Kamnan Poh more room to direct tourism developments based on his own initiatives through formal power of the *Thesaban*( Praditsil and Thinbangtieo, 2008). Therefore, he could make any policies he wanted and could control the development of Bang Saen to suit his own agenda (M3, pers. comm. Aug 5, 2010; M8, pers. comm. Aug 20, 2010; M13, pers. comm. Aug 21, 2010). From 1994 to 2005, the *Thesaban* invested heavily in physical capital on a large scale with special subsidies from the central and provincial governments in order to revive and boost tourism in Bang Saen. First, the *Thesaban* undertook huge projects to improve Bang Saen and to expand a road along the beach. Secondly, a project to improve Nong Mon market and to expand a road around the market was initiated. Thirdly, a large construction project was launched in Laem Tan in order to turn this area into a new tourist destination. Fourthly, large-scale road construction and building construction projects began at Khao Sam Muk hill to turn the dormant site into a tourist attraction. Fifthly, road construction occurred at Wonnapa beach in order to convert a fishing village into a new tourist spot. Lastly, sanitary landfill and wastewater treatment plants were constructed, along with rubbish traps that prevented marine debris from drifting, in order to manage public health (Iwase, 2011). Although KamnanPoh disappeared in 2005, the *Thesaban* continued to invest heavily

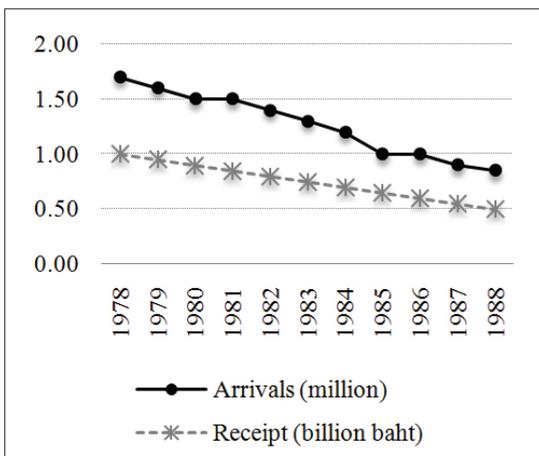


Figure 6: Tourist Arrivals to Bang Saen and Tourism Receipts between 1978 and 1988 Sources: NEB (1978); Jiemsripong (1998)  
 Note: Data between 1978 and 1988 was estimated by the researcher based on information available in the references.

in physical capital for tourism development (Table 2). The *Thesaban* invested little in natural capital or environment and resource management (e.g. in the management, monitoring, and rehabilitation of natural resources and the environment), as this category accounts for an average of only 12.3 per cent of the total development budget. The *Thesaban* mostly invested in human capital, such as social and quality of life development projects (e.g. education and health), which account for an average of 35.6 per cent of the total budget. Investment in physical capital for tourism and economic promotion (e.g. development of infrastructure and tourist attractions) made up 30.5 per cent, and human capital related to good governance (e.g. improvement of municipal services) made up 21.6 per cent, falling in second and third places. Kamnan Poh also continued to be

one of the major investors in tourism development during this phase. He personally invested in physical capital all over Bang Saen, including projects to construct accommodations for slum dwellers, commercial properties, hotels, seafood restaurants, condominiums, housing estates, shop houses, shopping malls, and pubs in order to attract more visitors and make more profit. Massive investment in physical capital to revive and boost tourism in Bang Saen stimulated investment by locals and people from outside in physical and financial capitals to start tourism-related businesses (e.g. seafood restaurants, food corners, convenience stores, small hotels, guesthouses, Thai massage shops, and laundries) in new areas developed by the *Thesaban* (Iwase, 2011; L37, pers. comm. Nov 25, 2010; L9, pers. comm. Aug 2, 2010; L52, pers. comm. Nov 29, 2010; L10, pers. comm. Jan 19, 2011; M8, pers. comm. Aug 20, 2010). The population of Bang Saen in 2011 was 43,322 (Saensuk municipality, 2012a). The influx of people has turned Bang Saen into a city and the rural atmosphere is gone.

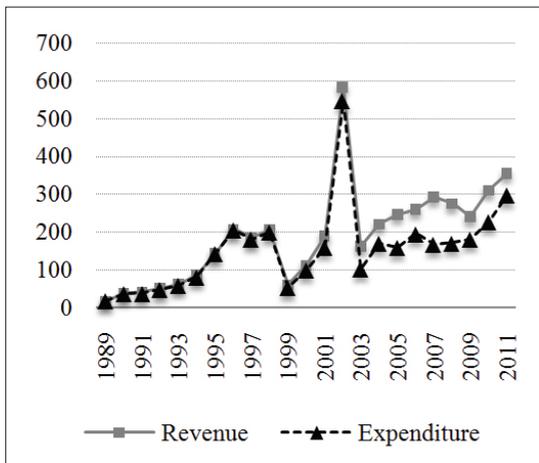


Figure 7:  
Revenue and Expenditure of ThesabanSaensuk between 1989 and 2011  
Sources: Saensuk municipality (2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009b, 2010c, and 2012a)  
Unit: million baht

The large-scale renovation of Bang Saen attracted more Thai visitors who had more buying power. Most visitors came from Bangkok and its vicinity during the weekend and on public holidays by private car. They came for pleasure-seeking and consumed the place through enjoying various recreational activities offered by stakeholders. The above stakeholders invested only in physical and financial capitals to encourage tourists to indulge in pleasure, and thus visitors did not take any interest in helping the environment (e.g. maintaining the cleanliness of place and preserving the environment), during their holidays in Bang Saen (Iwase and Silokwanich, 2013). Moreover, this widely publicized environmental degradation attracted volunteers for cleaning up Bang Saen beach. They came from large companies as part of corporate social responsibility (CSR) activities (L35, pers. comm. Sep 1, 2010; L27, pers. comm. Aug 3, 2010).

Table 2: Investment of the ThesabanSaensuk between 2005 and 2010 (in Thai baht)

Project types	2005	2006	2007	2008	2009	2010	Total
Tourism and economic promotion	104	17	15	9	17	18	180
Environment and resource management	41	2	21	3	2	3	72
Social and quality of life development	12	8	19	111	22	39	201
Good governance	48	23	9	9	10	10	109

Source: Saensuk municipality (2006, 2007, 2008, 2009a, 2010c, 2012a)  
Unit: million baht

Massive investment in physical and financial capitals in order to revive tourism by attracting more visitors largely destroyed natural capital stocks in Bang Saen and transformed the landscape of this place from a rural seaside resort into an urban seaside resort.

Figure 8 shows the landscape as transformed by stakeholder activities in 2011. As a result, visitor arrivals and tourist receipts increased (Figure 9). The changes of the five capitals in the third phase, which increased more and more the physical and financial

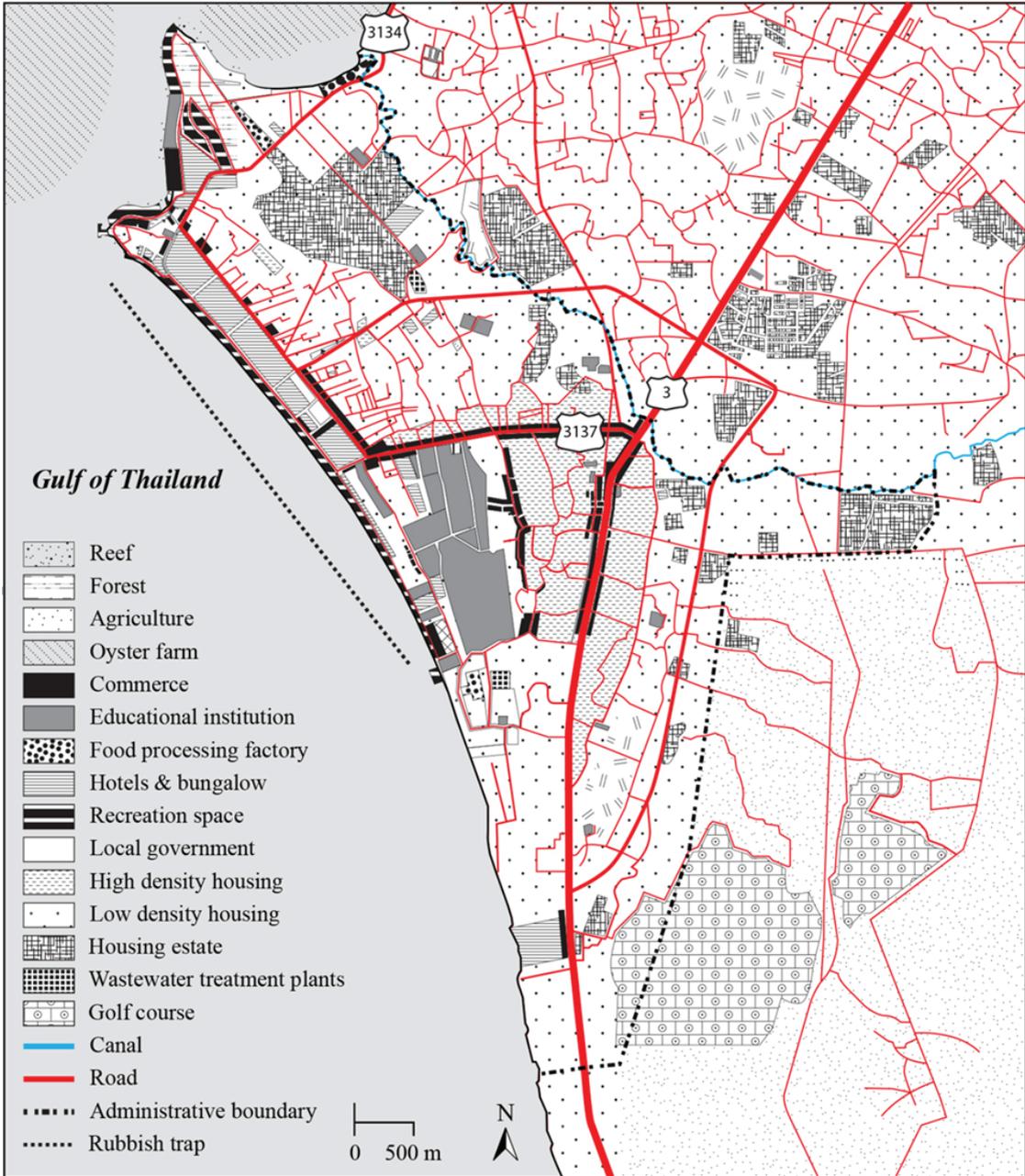


Figure 8:  
Landscape of Bang Saen in 2011  
Source: Iwase (2014)

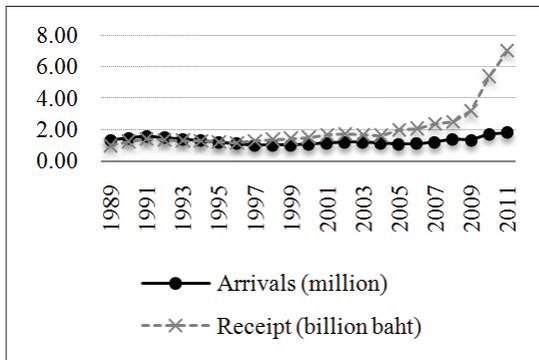


Figure 9:  
Tourist Arrivals to Bang Saen and Tourism Receipts  
between 1989 and 2011  
Sources: Jiemsripong (1998); TAT (2008); Saensuk  
municipality (2010a, 2012b)

capital stocks and decreased the natural capital stock than the second phase, resulted in positive impacts, such as the improvement of infrastructure and public health, job creation, and an increase in revenues, but at the same time, it generated more serious negative impacts, such as beach erosion caused by overdevelopment, disappearing sea animals, littering, noise pollution, aesthetic pollution, air pollution, overcrowding, and traffic jams, than the second phase (Iwase, 2011). It was difficult for the stakeholders to cooperate in addressing negative impacts due to the absence of investment in social and human capitals.

## DISCUSSION

Tourism development processes were trapped in a vicious cycle because investment in physical and financial capitals for attracting more visitors and increasing profits destroyed the natural landscape upon which Bang Saen tourism is dependent. In short, capital investment has been focused on tourism growth, or tourism promotion, rather than on maintenance of the landscape. As a result, investment in tourism promotion thoroughly decreased resilience of tourism landscapes, which can be defined as the capacity of a given tourist destination that overcomes certain disturbances caused by tourism development without losing the ability to maintain natural and cultural landscapes, because of improper balance between the stocks of five capitals necessary for maintaining the landscapes. This is true of many tourist destinations (Butler, 2006). Once tourism

development is set to a growth mode, it requires incremental capital investment in order to maintain the growth (Harvey, 1985). In the case of Bang Saen, the landscape was transformed to the extent that natural capital stocks could no longer be used as ecological services, especially recreational services, over the long term because of beach erosion caused by overdevelopment as a result (Millennium Ecosystem Assessment, 2005). The creation of more physical and financial capitals to maximize profits is where the field of design and designers have been contributing, by designing new business activities, beach scenery, land uses, resorts, hotels, condominiums, roads, business spaces, and restaurants. Investment has never been made in physical, financial, social, human, or natural capital in order to maintain the landscape by, for example, enhancing the environmental quality, restoring environmental degradation, fostering cooperation among all stakeholders, building capacity for better environmental management, creating environmentally and socially meaningful holidays, and facilitating public participation in decision making. This oversight stems from the absence of holistic viewpoints from all stakeholders as a larger group sharing a common destiny, and from the lack of understanding of the need to invest in all five capitals in order to create sustainability in economic development (Porritt, 2007). This case study suggests that major investors in particular must realize that tourism sustainability is dependent on natural and cultural landscapes. Investment for maintaining these landscapes so that natural capital can be used to regenerate recreational services in the long term must be set as the central goal of tourism development policies, rather than growth. This kind of approach does not seek to establish a balance between the needs of tourism development and the needs of the environment; rather, it seeks integration through the concept that maintaining landscape and developing tourism are one and the same process (Hawken, 2010). However, instigating such revolutionary change in tourism development requires shifting the paradigm of capital investment among major stakeholders from quantitative expansions of tourism activities into qualitative improvement (Iwase, 2014). This qualitative improvement is where design must intervene for playing a role in creating sustainability in tourism development. Design as a planning activity would create sustainability by including the five capitals in design object, which requires planning how to make a balance between the stocks of five capitals necessary for maintaining natural landscapes rather than planning how to increase physical and financial

**Table 3:** Design Targets in the Five Capitals

Types of capital	Design Targets
Physical capital	Green buildings, environmentally friendly transport systems, sustainable waste management systems, renewable energy systems, etc. to reduce negative impacts and increase positive ones
Human capital	Training programs, educational activities, etc. to improve knowledge, skills, and creativity
Social capital	Environmental volunteer activities, awareness raising, community volunteer work, company's social contribution activities, etc. to create environmentally and socially meaningful holidays and to foster collaborative thinking, commitment, ethical responsibility, and public participation in policy-making
Natural capital	Environmental preservation and conservation activities to repair and enhance natural capital stock
Financial capital	Environmentally, socially, and economically meaningful tourism-related businesses and administrative activities

capital necessary for maximizing profits. Designers should help major investors and make investment targets in the five capitals for strengthening resilience of tourism landscapes (Table 3). In this way, investment can be made in the five capitals for creating sustainability in tourism development.

a holistic understanding of the five capitals and to realize the role of design in the era of sustainability.

## CONCLUSION

It is impossible to sustain tourism development unlimitedly if capital investment is made only to increase physical and financial capital for capitalists. In order to sustain tourism development, investment must be integrated with maintenance of natural and cultural landscapes rather than trying to balance the needs of tourism development and the needs of the environment as the UNWTO's definition of sustainable tourism development suggests. Investment for maintaining these landscapes so that natural capital can be used to regenerate recreational services in the long term must be set as the central goal of tourism development policies, and it should be made across the five capitals to enable stakeholders to achieve this goal. This requires shifting capital investment from quantitative expansions of tourism (e.g. attraction of visitors and development of infrastructure) to qualitative improvement of tourism (e.g. improvement of the natural environment, human resources, social cohesion, and visitor's behaviors). The role of design in tourism development must change from creating more physical and financial capital to creating investment targets of the five capitals necessary to strengthen resilience of tourism landscapes. However, such a shift requires designers to develop

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