

Promotion of Eco-tourism and Livelihood Development in the Tonle Sap Lake of Cambodia

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សារគន្លឹះ:

- ជាងពាក់កណ្តាល (65.3%) នៃអ្នកឆ្លើយសំណួរជឿថា សហគមន៍របស់ខ្លួននៅក្នុងបឹងទន្លេសាបមានភាពទាក់ទាញគ្រប់គ្រាន់ ដែលសមល្មមនឹងក្លាយជាតំបន់ទេសចរណ៍ធម្មជាតិ។ ជាងនេះទៅទៀត ទេសចរណ៍ធម្មជាតិគឺជាប្រភពជំនឿនៃជីវភាពរស់នៅរបស់ប្រជាជនក្នុងការបង្កើនប្រាក់ចំណូល (70.1%) ការទាក់ទាញទេសចរណ៍ (43.8%), បរិស្ថានល្អ (19.6%), ការគាំទ្រប្រព័ន្ធអេកូឡូស៊ី (15.4%), តម្លៃវប្បធម៌ (9.9%), និងផ្សេងៗទៀត (1.0%)។
- ខេត្តសៀមរាបមានសក្តានុពលខ្ពស់ជាងគេក្នុងវិស័យទេសចរណ៍ធម្មជាតិនេះដោយសារវិស័យនេះមានសេវាកម្មមួយចំនួនរួចស្រាប់ទៅហើយ ដូចជាការជួលទូក (6.4%), ការលក់អាហារ (4.3%), និងមគ្គុទ្ទេសក៍ទេសចរណ៍ (3.6%) ជាដើម។ នៅខេត្តបាត់ដំបង 1.6% នៃអ្នកឆ្លើយសម្ភាសន៍អាចរកចំណូលបានពីការជួលទូកជូនភ្ញៀវទេសចរណ៍ និងប្រមាណ 1.1% អាចរកចំណូលបានពីការផ្តល់សេវាមគ្គុទ្ទេសក៍ទេសចរណ៍។
- ជាទូទៅ អ្នកឆ្លើយសំណួររកកម្រៃបានជាមធ្យម 159.6 ដុល្លារក្នុងមួយខែ។ អ្នកឆ្លើយសំណួរនៅខេត្តសៀមរាបអាចរកចំណូលបានពីទេសចរណ៍ធម្មជាតិ ជាមធ្យម 721.4 ដុល្លារក្នុងមួយខែ ចំណែកអ្នកឆ្លើយសម្ភាសន៍នៅខេត្តបាត់ដំបង និងបន្ទាយមានជ័យស្ទើរតែមិនមានប្រាក់ចំណូលពីសេវាកម្មទេសចរណ៍ធម្មជាតិទេ។ ពួកគេបានបណ្តាក់ទុន 78.2 ដុល្លារ ដែលក្នុងនោះ ដើមទុនផ្ទាល់ខ្លួន 76.2 ដុល្លារ ទៅលើការផ្តល់សេវាទេសចរណ៍ធម្មជាតិ។
- អង្គការមិនមែនរដ្ឋាភិបាល (NGOs) បានដើរតួនាទីយ៉ាងសំខាន់ក្នុងការកសាងសមត្ថភាព និងក្នុងការផ្តល់ការគាំទ្រផ្នែកបច្ចេកទេសតាមរយៈការបណ្តុះបណ្តាល និងការគាំទ្រជាប្រចាំដើម្បីដំណើរការសេវាកម្មទេសចរណ៍ធម្មជាតិនេះ។ អ្នកចូលរួមឆ្លើយសំណួរបានទទួលការបណ្តុះបណ្តាលពីអង្គការមិនមែនរដ្ឋាភិបាល (5.0%), ពីមិត្តភក្តិ (4.3%), និងពីស្ថាប័នរដ្ឋ (2.9%)។
- ទេសចរណ៍ធម្មជាតិគួរតែត្រូវបានលើកកម្ពស់តាមរយៈការកែលម្អហេដ្ឋារចនាសម្ព័ន្ធរូបវន្ត និងការកសាងជំនាញក្នុងវិស័យទេសចរណ៍និងបដិសណ្ឋារកិច្ច។ ដើម្បីបង្កើនការយល់ដឹងនិង

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ការគាំទ្រជាសាធារណៈ បណ្តាញទេសចរណ៍ធម្មជាតិបឹងទន្លេសាបគួរតែ ត្រូវបានបង្កើតឡើងដើម្បីឱ្យអ្នកពាក់ព័ន្ធទាំងអស់ អាចចូលរួមបង្កើនសេវា កម្មទេសចរណ៍ធម្មជាតិ តាមរយៈការធ្វើវិនិយោគ និងការធ្វើទីផ្សារ។ ការ វិនិយោគរបស់រដ្ឋឯកជន គួរតែត្រូវបានទទួលស្គាល់ថាមានសារៈសំខាន់ ខ្លាំងណាស់ក្នុងការកែលម្អហេដ្ឋារចនាសម្ព័ន្ធរូបវន្ត និងការធ្វើឱ្យសេវាកម្ម មានភាពសម្របសម្រួល។ ជាងនេះទៅទៀត អាជ្ញាធរមូលដ្ឋានគួរពិចារណា ក្នុងការបង់ចែកថវិកាមូលនិធិឃុំឃ្លោះពី 5% ទៅ 10% ដើម្បីបង្កើន ដីវិភាគក្នុងវិស័យទេសចរណ៍ធម្មជាតិ។

Key Messages

- More than half of the respondent (65.3%) believe that their communities in the Tonle Sap Lake are attractive enough to be eco-tourism sites. Moreover, eco-tourism is an important source of people’s livelihood in terms of income generation (70.1%), tourist attraction (43.8%), good environment (19.6%), ecosystem support (15.4%), cultural value (9.9%), and other (1.0%).
- Siem Reap has higher potential for this sector; respondents indicated they already provided some services such as boat rentals (6.4%), selling meals (4.3%), and tourism guide (3.6%). In Battambang, services provided included boat rentals (1.6%), and tour guides (1.1%).
- On average, the respondents earned 159.6 US\$ per month, while the respondents in Siem Reap earned an average of 721.4 US\$ per month from eco-tourism, there was little income generated from eco-tourism in Battambang and Banteay Meanchey provinces. They invested 78.2 US\$ with 76.2 US\$ from their own capital to eco-tourisms service provision.
- Non-governmental organization (NGOs) have played very important role in building capacity and providing technical support through training and daily support to operate eco-tourism services. The respondents received training from NGOs (5.0%), friends/relatives (4.3%), and government agencies (2.9%).
- Ecotourism should be promoted through improved physical infrastructure and skill-building in tourism and hospitality. To increase public awareness and support, the Tonle Sap Eco-Tourism Network should be established to connect all the stakeholders to enhance eco-tourism services through

investment and marketing. Moreover, private sector investment should be recognized as important to improve physical infrastructure, and services diversification. The local government should consider allocating 5-10% of the communal budget to the development of livelihoods in the area of eco-tourism.

Tourism and ecotourism in Cambodia

Cambodia has globally significant resources for tourism that are diverse and well placed to be a pillar for socio-economic development, as identified by the Royal Government of Cambodia (RGoC). The main attractions are the world heritage site of Angkor Wat, religious and cultural sites, pristine beaches, islands, and wildlife. Therefore, Cambodia has significant potential to develop ecotourism. The country is gifted with rich historical, cultural, and natural resources representing the Khmer culture that thrived in Southeast Asia for many centuries. Tourism has been a critical driver of rapid economic expansion in Cambodia in the past decades. Annual Gross Domestic Product or GDP growth averaged 7.2% in 2011-15 and is expected to continue for the next five years (OECD, 2018). Since 2000, tourism development has improved apace. Most visitors to Cambodia are tourists, which have increased more than ten times to 5.6 million people annually. Tourism’s share of Gross Domestic Product (GDP) has risen from 6.2% in 2010 to 16.3% in 2017.

Considering indirect contributions, i.e., investment in tourism-related projects from other industries, the World Travel & Tourism Council estimated tourism’s total contribution to Cambodia’s GDP at 32.4% in 2017 (WTTC, 2018). Regarding its contribution to employment, the tourism sector accounted for 13.6% of jobs and 30.4% of jobs in related industries. Moreover, the rapid growth of the tourism sector has attracted strong interest from investors, and accounted for 15.8% of total investment in Cambodia last year. In 2017, the Ministry of Tourism developed a master plan for promoting high-quality tourism and hospitality in Cambodia. The plan consists of many initiatives to create necessary psychical infrastructure, form environmentally-friendly resorts, maintain social order, deliver good

services, and guarantee hospitality. The master plan also includes a carefully drafted outlook for each tourist area, and calls for information and communication technology to improve the organization of management activities (Chan, 2017).

In 2001, a study by the Asian Development Bank (ADB) showed that out of 209 tourist sites in Cambodia, 98 were suitable for developing ecotourism (OECD, 2016). Currently, the country has about 50 ecotourism sites in operation, with a handful being major eco-tourism attractions. They include seven national parks, nine wildlife sanctuaries, and four so-called 'Ramsar areas', which protect wetlands of international importance (ODC, 2018). The government of Cambodia showed an interest in developing ecotourism as early as the late 1990s and has spoken of promoting it in several national plans. In the National Strategic Development Plan 2014-2018, the government set out its intention to strengthen the conservation of national resources and encourage linkages between conservation and ecotourism. The plan also identified nature-based ecotourism in the country's northeast as one of four priority areas for developing tourism products. Therefore, the Ministry of Tourism is working on drafting a national strategic policy for ecotourism to coordinate efforts among government agencies in developing the sector. Meanwhile, in its Tourism Development Strategic Plan 2012-2020, the government admits that ecotourism needs to be improved and expanded as part of a vision for sustainable development in the tourism sector.

Ecotourism and community-based tourism can be practical tools to promote nature conservation and generate income and employment for residents. However, development partner assistance for such ventures should be subject to rigorous financial and market feasibility assessments. Experience shows that it is challenging to establish community infrastructure (such as homestays) as viable enterprises in many areas (ADB, 2021). Cambodia is rich in natural resources and biodiversity, primarily concentrated in 57 protected areas covering an area of 7,439 hectares (including national parks, wildlife

sanctuaries, landscape protection areas, multi-use areas, Ramsar sites, Natural Heritage Sites and biodiversity corridors). In addition, there were 9 protected forest areas, including the cardamom mountain tropical forest, which has some of the last members of rare species in Asia. These areas are included in the top 10 ecotourism destinations in the world, and including marine flora and sea creatures, and a lot of biodiversity. For example, especially the largest mangrove forest in Southeast Asia, covering an area of 50,000 hectares and 70 species of coral in the coastal areas of Cambodia. Cambodian natural areas also have excellent potential for ecotourism with highlands, national parks, Mekong River landscape, forest sea, waterfalls, Mekong dolphins, rare species and biodiversity, as well as ethnic communities. Overall, the development of tourism in natural areas, especially ecotourism, is a form of sustainable development that benefits the local economy and society, contributes to adequate environmental protection, and plays an essential role in promoting Cambodia's competitive advantages (RGoC, 2021).

According to the Ministry of Tourism statistics, international arrivals came from 50 countries in 2018. Cambodia has can be categorized as a mixed emerging market due to five indicators: population, market share, outbound population, economic-social demand, and market needs. Chinese tourists make up the largest share of visitors, with 1,210,782 million in 2017 and 2,024,443 in 2018, exceeding Vietnamese which numbered 835,355 in 2017. Between 2009 and 2016, Vietnamese tourism made up the largest share, reaching 209,516 and 959,663 visitors, respectively (Ministry of Tourism, 2018). Despite preliminary achievements in expanding destinations, the Angkor temple complex remained the leading attraction site in Cambodia. Arrivals to Siem Reap province, where the temple is located, account for 60% of international arrivals by air. The current jump in tourist arrivals has significantly boosted revenue collected from foreign tourists visiting the Angkor Wat temple complex, following an increase in the entrance fee. The income from Angkor Wat entrance fees reached US\$ 60.3 million during the first seven months of 2017, an increase

of 68% from the corresponding months in 2016.

Simultaneously, there has been progress in diversifying destinations, especially in the coastal regions, where the potential for ecotourism remains untapped. Tourist destination diversification efforts have positively boosted foreign visitors to coastal areas, which received 15% of the total international arrivals, up from 10% a year ago. Ecotourism is merely incipient, with only a 2% share of total arrivals, although enormous potential exists. There is a plan to promote ecotourism, mainly in the north and northeastern parts of Cambodia, by introducing wildlife adventure parks, trekking, and other activities. In addition, recent construction expansion helps other emerging urban areas (beyond Phnom Penh and Siem Reap) to become more tourist-friendly destinations by improving tourism infrastructure, facilities, and accessibility, which would help support diversification in tourism destinations. Several new and rising attraction sites include Sihanoukville, Battambang, and Kampot. Moreover, RGC efforts to attract international tourists, especially from China, tend to be paying off, with a rapid growth in arrivals in 2017 (Work Bank, 2017).

This policy paper aims to promote ecotourism and livelihood development in the Tonle Sap Lake of Cambodia by focusing on: (1) the importance of ecotourism on people’s livelihood in the Tonle Sap Lake; (2) service delivery and investment in ecotourism; and (3) best practices for eco-tourism development.

2. Materials and methods

This policy paper was based on a survey conducted in the west of Tonle Sap Lake, consisting of areas of Battambang, Banteay Meanchey, and Siem Reap provinces (Fig. 1). Sampling procedures and methods were primarily purposive, starting from the provincial level to the west Tonle Sap Lake (Battambang, Banteay Meanchey, and Siem Reap), then to the district level (Aek Phnum in Battambang, Krong Serei Saophoan in Banteay Meanchey, and Prasat Bakong, Krong Siem Reap, and Sotr Nikom districts in Siem Reap province). Banteay Meanchey has 189,588 households (equal to 853,252 people, including 51% female), with 64% of households living in rural areas. In Battambang, there was 227,237 households (980,328 inhabitants, including 51% females), with 80% of households residing in rural areas. The total population in

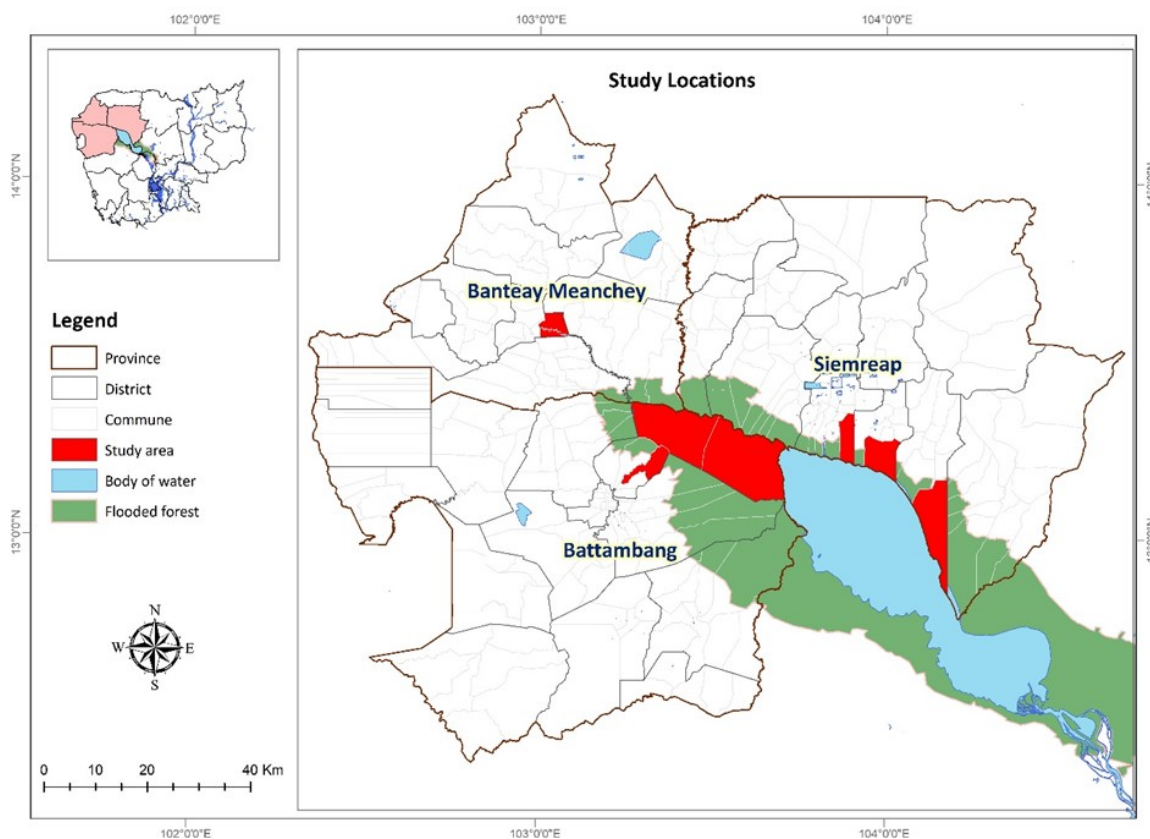


Fig. 1. Map of the Tonle Sap Lake highlighting the study provinces

Siem Reap comprised 224,672 families (994,540 people, including 51% female), with 70% living in rural areas. A Yamane method (1967) was applied for the sample size calculation. The formula calculated the sample size between a 7% and 8% precision level in each of the study provinces. The adjustment of the level of precision from 7% to between 7% and 8% was made after the fieldwork. The sample size of 505 households were contacted for the interviews, including 182 households in Battambang, 183 in Banteay Meanchey, and 140 in Siem Reap.

3. Results and discussion

3.1 Importance of eco-tourism on people’s livelihood in the Tonle Sap Lake

Overall, 65.3% of the respondents confirmed that their communities were attractive enough to eco-tourism; 89.3% in Siem Reap, followed by 58.3% in Battambang and 53.8% in Banteay Meanchey. A Chi-square test confirms that the respondents in Siem Reap shared a higher perception of the attractiveness of their communities for eco-tourism (Table 1). The group discussion also agreed that there was much greater potential for developing eco-tourism in Siem Reap compared to the other two provinces. Siem Reap is already the most attractive destination for cultural tourism, so some of the respondents wished to increase activities in eco-tourism as well.

The respondents identified some important aspects of eco-tourism in their communities. These included income generation (70.1%), tourist attraction (43.8%), good environment (19.6%), ecosystem support (15.4%), cultural value (9.9%), and other (1.0%). In Siem Reap, the respondents pointed to income generation (81.4%), tourist attraction (60.0%), and pleasing environment (22.9%). More than one-fifth of the respondents recognized excellent climate (24.2%) and ecosystem support (20.3%) (Fig. 2).

The results from group discussion among local people and key informants, including primary stakeholders, have identified some potential eco-tourism communities. For example, in Battambang, the Preak Lung, Prey Chas, and

Attributes	Battambang			Banteay Meanchey			Siem Reap			X ²	P-value
	Yes	No	Total	Yes	No	Total	Yes	No	Total		
Do you think your community is attractive enough to provide eco-tourism?	98	84	182	107	76	183	125	15	140	49.882	0.000
Do you support establishing eco-tourism in your community?	167	15	182	179	4	183	137	3	140	10.310	0.006

Table 1. Eco-tourism activities in the community

Koh Chiveang communes. In Siem Reap Chreav, the Kampong Khlaing, and Kampong Phluk communes. In Banteay Meanchey, the Phniet Pong Satv commune. Eco-tourism has already been established in some communes such as Kampong Khlaing, Kampong Phluk, Chreav, and Koh Chiveang. In those locations, the local people have been engaged in providing tourism-related services with support from NGOs and local government agencies. Some communities already attract tourists to visit, and service provision creates local jobs. But the COVID-19 pandemic halted their services and income generation activities.

3.2 Service delivery and investment in eco-tourism

In Siem Reap, the respondents provided services such as boat rentals (6.4%), selling meals (4.3%), and tourist guides (3.6%). In Battambang, 1.6% of the respondents rented boats; 1.1% of the

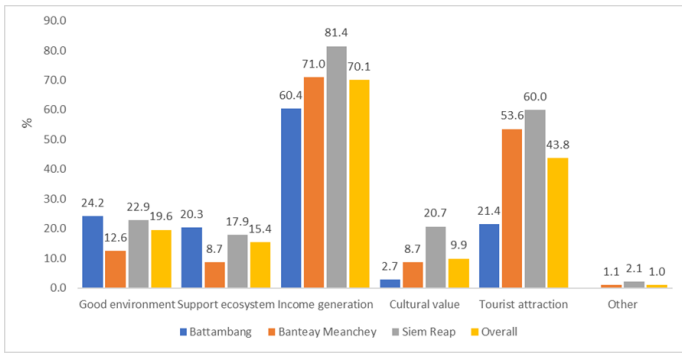


Fig. 2. Importance of eco-tourism

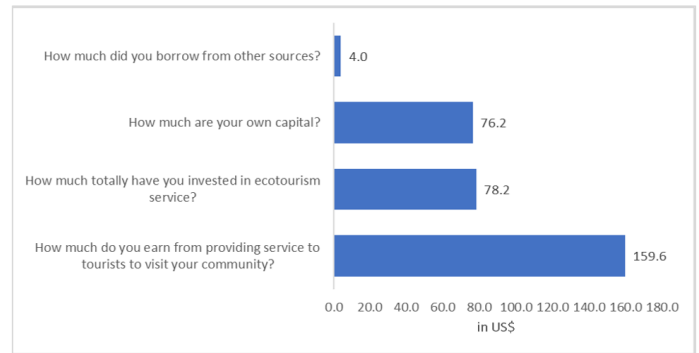


Fig. 4. Investment in eco-tourism

respondents in Banteay Meanchey served as tour guide (Fig. 3). The households in the studied areas thought that their communities had the potential for offering eco-tourism. According to the fieldwork findings, a few households also did not support ecotourism in their communities because they did not have the investment capital and skills to provide services for the ecotourism sector. The local people raised the point that services like homestays were significant investments and risk losing money. For example, Chreav is one of the most attractive communities for tourists to enjoy nature, but it is not far from town. Therefore, tourists may consider returning to the city because they may have better facilities and services at a similar cost.

Simultaneously, non-governmental organizations (NGOs) provided capacity building and technical support through training and everyday assistance for operating eco-tourism services (Fig. 5). The respondents received training from diversified agencies and sources, including NGOs (5.0%), friends/relatives (4.3%), and government agencies (2.9%). In Battambang, only 1.1% of the respondents received training from the government, and 0.5% of the respondents received training from friends/relatives in Banteay Meanchey.

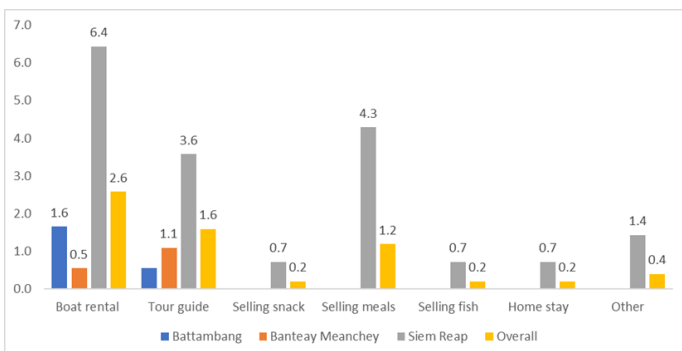


Fig. 3. Services delivered to tourists

On average, the respondents earned 159.6 US\$, they invested 78.2 US\$ with 76.2 US\$ coming from their own capital. While the respondents in Siem Reap earned an average of 721.4 US\$, there was almost no income generated from eco-tourism services in Battambang and Banteay Meanchey. Concerning investments to support eco-tourism, most respondents indicated that they spent their money buying or decorating boats to attract tourists and buying materials for providing homestay and meal services (Fig. 4).

Key informants from local authorities were invited to participate in developing the annual commune investment plan (CIP). Physical infrastructure has always been prioritized as the budget is allocated. However, the available budget is small and does not have sufficient resources to fully respond to local priorities. Every year, a commune has funding for road construction in the communities, and people are also required to restore ponds, irrigation systems, and dykes.

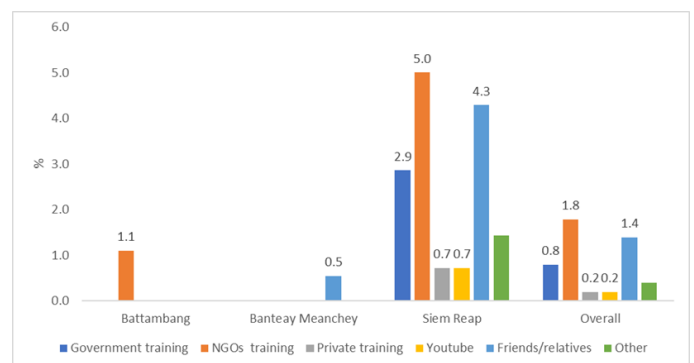


Fig. 5. Providers for training on Eco-tourism

3.3 Best practice for eco-tourism development

Table 2 outlines the best practices for ecotourism in five countries, including Cambodia,

Thailand, Vietnam, Indonesia, and Malaysia. In short, ecotourism is successful when they gain support from government agencies from national to sub-national levels. In particular, NGOs play a significant role in helping the communities start-up their services, such as establishing committees, developing regulations, and capacity building for communities.

Meanwhile, NGOs also contribute by providing capital and technical support for the daily operations of start-up ecotourism services. The communities require technical support and follow-up regularly for at least five years before operating their services successfully. Experiences from the five communes also draw attention to local leadership and participation. None of the communities are successful without good leadership and management by the elected committees in their communities. The committees do not require a high degree of education, but they need good management and leadership skills. In general, NGOs and local government agencies are working with CBO committees to augment their financial and human resources in order to operate their daily services successfully.

In the communities studied, local government, Commune Councilors (CoC), and NGOs play essential roles in supporting ecotourism development. Unfortunately, the survey shows that the respondents did not fully participate in the development of CBOs, such as Community Fishery (40.1%), ecotourism (2.6%), Community Forestry (0.2%), and savings groups (0.2%). Some villagers are not registered or involved in the communities. In other words, they are not members of any group in the community. Being a member, they can get various benefits such as regular engagement in community development activities, joining training, study tours, learning exchanges, etc. Some people did not identify themselves as members of any community groups. But, it can be seen that most of them are members of a Community Fishery because the study areas mainly in Battambang are community fishery zones. Of the sample size of 140 in Siem Reap province, Chreav commune is had the largest number of members with around 120 people in that community. During the survey, researchers were unable to meet those community members (Fig. 6).

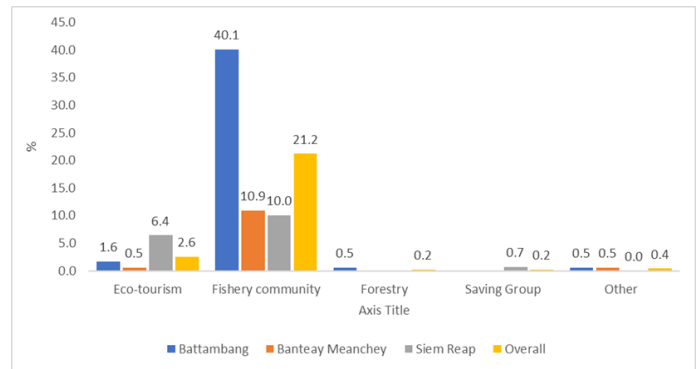


Fig. 6. Membership of community-based organizations

Ecotourism should be promoted through improved physical infrastructure and skill-building in the tourism and hospitality industries. The survey shows that more than half of the respondents (65.3%) believe that their communities are attractive enough to provide for ecotourism, and they expect to earn income from this sector (43.8%). However, the survey confirms that revenue generated from ecotourism was still minor, as the percent of people engaged in tourist related activities was low: boat rental (6.4%), selling meals (4.3%), and tourist guide (3.6%). In this regard, ecotourism has potential in the three study provinces because the sites are uniquely natural and environmentally friendly. In addition, local people are willing to participate and help ecotourism service providers to create alternative livelihoods. The Ministry of Tourism should support communities in establishing ecotourism by providing legal support, guidelines, and capacity building regarding tourism and hospitality service provision. Physical infrastructure and making the community clean are necessary to attract and provide for visiting tourists. Hygiene and safety must be the priority, and to that end, strict quality control and maintenance should be strengthened. Improved physical infrastructure and improved environment of the communities should be the priority for CoCs, NGOs, community, and community members. Regular follow-up and technical support by NGOs are helpful to increase the productivity and success of CBOs.

To increase public awareness and support, the Tonle Sap Ecotourism Network should be established to connect all the stakeholders to enhance eco-tourism services for investment and marketing purposes. In addition, group tourism and packages should be promoted to initiate marketing

Table 2. Best practices for ecotourism development in different countries

No.	Eco-tourism	Country	Best Practice
1	Trapeang Sangkae Eco-Tourism	Cambodia	<p>Trapeang Sangkae Eco-Tourism is a man-made resort. It provides services which provide access to boat rides, sunsets, mangrove forests, food, fishing, swimming, accommodations, mountain views, and trekking.</p> <p>Key to success: Local participation, local empowerment and leadership, local employment and incomes, and natural resource management.</p> <p>The income distribution from ecotourism: patrol cost (10%), emergency budgeting (5%), administration (5%), community development (40%), capacity-building (35%), and other activities (5%).</p> <p>Source: Sreymom et al., 2016</p>
2	Shrimp Parade	Thailand	<p>Shrimp Watching tourism (or the Shrimp Parade festival) was first promoted as nature-tourism under the "Amazing Thailand" campaign in 1998-1999 when the federal government aimed to stimulate the tourism economy. From 2012 to the present, locals and school children from many villages around the tourist site have been invited to join the opening ceremony of the Shrimp Parade festival. Students have been involved in designing a shrimp mascot costume to represent the environmental issues in that</p>

			<p>area. Locals are invited to sell their products (e.g., local fruits, local foods, and textiles) at the tourist site.</p> <p>Key to success: Policy support, engagement of students, and local participation</p> <p>Source: Hongjamrassilp et al., 2021</p>
3	Indonesia Sustainable Tourism Practices in Raja Ampat, West Papua	Indonesia	<p>Raja Ampat is part of the Bird's Head Seascape in West Papua, an epicenter of marine biodiversity. Therefore, the ecosystem in this area is a significant source of livelihood for the people. The marine biodiversity and ecosystem provide a beautiful underwater experience for diving and snorkeling.</p>
			<p>Key to success: Strong multi-stakeholder participation and coordination among NGOs in Raja Ampat.</p> <p>Source: Baya, 2017</p>
4	Tabin Wildlife Reserve (TWR)	Malaysia	<p>Tabin Wildlife Reserve (TWR) was established to conserve and protect the natural forest and wildlife in Lahad Datu, Sabah. The TWR is under the custodianship of the Sabah Forestry Department, which has the mandate to carry out conservation activities encompassing the protection of fauna species in the reserve. Over the years, this aim has broadened to include education and ecotourism. Nowadays, protected areas all over the world are essential tourist destinations. Ecotourism at</p>

			<p>this site shows a good example of the direct monetary value provided by nature. Based on this case, on can see how increasing interest in nature-based tourism has made ecotourism one of the largest and fastest-growing types of tourism.</p> <p>Keys to success: Maintaining or enhancing biodiversity through the protection of plants, animals, ecosystems, and sensitive areas; maintaining or enhancing cultural diversity through the preservation of landscapes and cultural heritage; respecting the integrity of local cultures, cooperating with local communities and people; and, providing</p>
			<p>opportunities for local people to work as tour guides.</p> <p>Source: Baya, 2017</p>
	Viet Nam National Administration of Tourism (VNAT)	Vietnam	<p>Vietnam National Administration of Tourism (VNAT) was established in 2004 in Kim Bong village in Hoi An, a World Heritage site. Like Hoi An, Kim Bong Village also has a rich cultural and natural heritage. Tourists made trips to its traditional carpentry workshops and scenic riverside landscapes. However, its tourism industry did not grow, and sales of its products remained low as it was not able to capitalize on the 'spillover effect' from Hoi An's booming tourism industry due to deficiencies</p>

of eco-tourism services. The targets should be university students, company staff and government officers to induce them to bring their study tours, field visits, retreats, and vacations. Investment by private sector is very important to improve physical infrastructure, and diversify services. The local government should consider allocating 5-10% of the communal budget to the development of ecotourism-based livelihoods.

Investing in eco-tourism activities is necessary for income generation and resource management. The surveys found that 65.3 of the respondents revealed their communities were

attractive enough to ecotourism: 89.3% in Siem Reap, followed by 58.3% in Battambang, and 53.8% in Banteay Meanchey. The respondents in Siem Reap agreed at a higher rate that their communities were attractive for ecotourism. The respondents identified some importance outcomes from eco-tourism such as income generation (70.1%), attracting tourists (43.8%), landscape beauty (19.6%), ecosystem support (15.4%), and valuing the culture (9.9%), and other (1.0%). In Siem Reap, the respondents pointed to income generation (81.4%) and tourist attraction (60.0%), and environment protection (22.9%). More than one-fifth of the respondents recognized the

excellent climate (24.2%) and ecosystem support (20.3%) as reasons for ecotourism. The service provided by the respondents in Siem Reap included boat rentals (6.4%), selling meals (4.3%), and tourist guides (3.6%). Of the respondent in Battambang, 1.6% of the respondents rented boats, and 1.1% in Banteay Meanchey served as tour guides. On average, the respondents earned 159.6US\$; they invested 78.2US\$ with 76.2US\$ from their capital. While the respondents in Siem Reap earned an average of 721.4US\$, they earned almost nothing in Battambang and Banteay Meanchey. Concerning eco-tourism, most of them spent their money on decorating boats to attract tourists and buying household and kitchen materials to serve homestay guests and meal services. The respondents received training from NGOs (5.0%), friends/relatives (4.3%), and government agencies (2.9%).

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Declaration of competing interest

None.

References

- ADB (2021) *Tourism sector assessment, strategy, and road map for Cambodia, Lao People's Democratic Republic, Myanmar, and Vietnam (2016-2018)*. Manila: Asian Development Bank.
- Chan, S., (2017) Master plan for tourism development, *Khmer Times*, 12 April 2017, <https://www.khmertimeskh.com/news/37450/master-plan-for-tourism-development/>.
- Ministry of Tourism (2018) *Tourism Statistics Report Year 2018*. Phnom Penh: Ministry of Tourism.
- ODC (2018), "National parks and wildlife sanctuaries, Open Development Cambodia, <https://opdevelopmentcambodia.net/topics/national-parks-and-wildlife-sanctuaries/>.
- OECD (2016), *Economic Outlook for Southeast Asia, China and India 2016: Enhancing Regional Ties*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/saeo-2016-en>.
- OECD (2018) *Economic Outlook for Southeast Asia, China and India 2018: Fostering Growth through Digitalisation*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264286184-en>.
- RGoC (2021) *Roadmap for Recovery of Cambodia Tourism During and Post COVID-19*. Phnom Penh: Royal Government of Cambodia.
- WTTC (2018), *Economic Impact 2018: Cambodia, World Travel & Tourism Council, London*. <https://www.wttc.org/media/files/reports/economic-impact-research/countries-2018/cambodia2018.pdf>.
- World Bank (2017) *Cambodia economic update: Cambodian climbing up the manufacturing value chains*. Phnom Penh: World Bank.