BJNRD (2020), 7(2): 1-11
Bhutan Journal of Natural Resources & Development

**Article**

www.bjnrd.org

Open Access

ISSN 2409–2797 (Print)
ISSN 2409–5273 (Online)

DOI: https://doi.org/10.17102/cnr.2020.47

# Ecotourism Destination Assessment using Tourist Potential Index in Zhemgang Dzongkhag, Bhutan

Jigme Dorji[1, *], Dhan Bdr. Gurung[2] and Om Katel[2]

**Abstract**

Zhemgang is increasingly becoming a preferred destination for nature-based tourism with the increasing number of international visitors from 165 to 346 between 2013 and 2019. The attractions that contribute to the increasing number of visitors are 225,361.47 ha (94.17%) of area under forest cover, rich biodiversity, unexplored scenic beauty and unique Kheng culture. In the past years, five local standard hotels, five ecolodges and two homestays have added bed nights of international visitors from 420 in 2013 to 931 in 2018. This study was conducted to assessed 10 potential ecotourism destinations in Zhemgang on the basis of resource availability and preferential appeal by promoters for tourism resources using Tourist Potential Index (TPI). The TPI was found ranging between 17 and 31.75.The mean rank of the destinations varies between 1.47 and 9.47 and there is significance difference in resources appealed by the tour operators on resources availability in the destinations considered for this study; ($\chi^2_{(2)} = 229.07$, $p = 0.00$). The TPI may be useful indicator in developing practical guidelines for tourism resources development in the region.

**Keywords**: Biodiversity, destination, ecotourism, nature tourism, tourist potential index

## Introduction

Ecotourism is fast gaining impetus in the sustainable tourism industry with focus on wildlife conservation, environmental protection, poverty alleviation and economic development (Rinzin, Vermeulen, and Glasbergen, 2007; UNWTO, 2020). The term ecotourism emerged in the late 1980s as a direct result of the global acknowledgment and appreciation to sustainable ecological practices which was coined by Hector Ceballos Lascurain in 1983 to describe the nature-based travel to relatively undisturbed areas with an emphasis on education. Ecotourism is one of the preferred mechanisms for conservation and community development in many rural areas (Gurung and Seeland, 2008; Neth, 2008). Its effectiveness depends on its potential to provide local economic benefits by maintaining ecological resource integrity through low-impact and non-consumptive use of local resources (Gurung and Seeland, 2008). Ecotourism is an alternative form of tourism which embraces tourism in the biophysical environment in natural areas (Schroeder, 2015). It in-

[1]Zhemgang Forest Division, Ministry of Agriculture & Forests
[2]College of Natural Resources, Lobesa
*Corresponding Author: fearless.thunderbolt@gmail.com
Received: July 13, 2020
Accepted: November 7, 2020
Published online: December 31, 2020
Editor: Ugyen Thinley, College of Natural Resources, RUB, Lobesa, Bhutan

corporates ecologically sustainable activities, conservation supporting measures and involvement of local communities.

Bhutan's tourism industry started in 1974 with the primary objective of generating revenue in the form of foreign currencies (Dorji, 2001). This has opened Bhutan to the outside world with the showcase of the country's unique culture and traditions guided by the strategic policy of sustainable tourism. Since then the number of tourists visiting Bhutan has increased from just 287 in 1974 (Dorji, 2001) to 315,599 in 2019 (TCB, 2019).

Bhutan received 315,599 visitors comprising both regional and international tourists in 2019. The visitor numbers have increased by 15% from 2018 to 2019 and the foreign currency earnings have increased from USD 53.76 million in 2012 to USD 88.65 million in 2019 (TCB, 2019). The GDP contribution from the tourism sector was more than nine percent and generated numerous employment opportunities in the country (NC, 2016). Bhutan's tourism development policy is guided by sustainable socioeconomic growth and development with emphasis on "high value, low impact" control mechanism. All the international tourists are required to route through registered tour operators for any activities and their movement within the country is guided by licensed guides (Brunet, Bauer, Lacy, and Tshering, 2001; NC, 2016). In addition, all tourists are required to wire minimum tariff prior to their entry into Bhutan. Despite sound guiding policy the tourism industry faces a number of emerging challenges like poor regional spread of visitors across the country, minimal local benefits, relevance of pricing or tariff model and unregulated regional tourists (Brunet, Bauer, Lacy, and Tshering, 2001).

Bhutan has forest cover of 70.77% and 51.44% of the total land area declared as protected areas (FRMD, 2017). This has enabled the country to become one of the negative car-

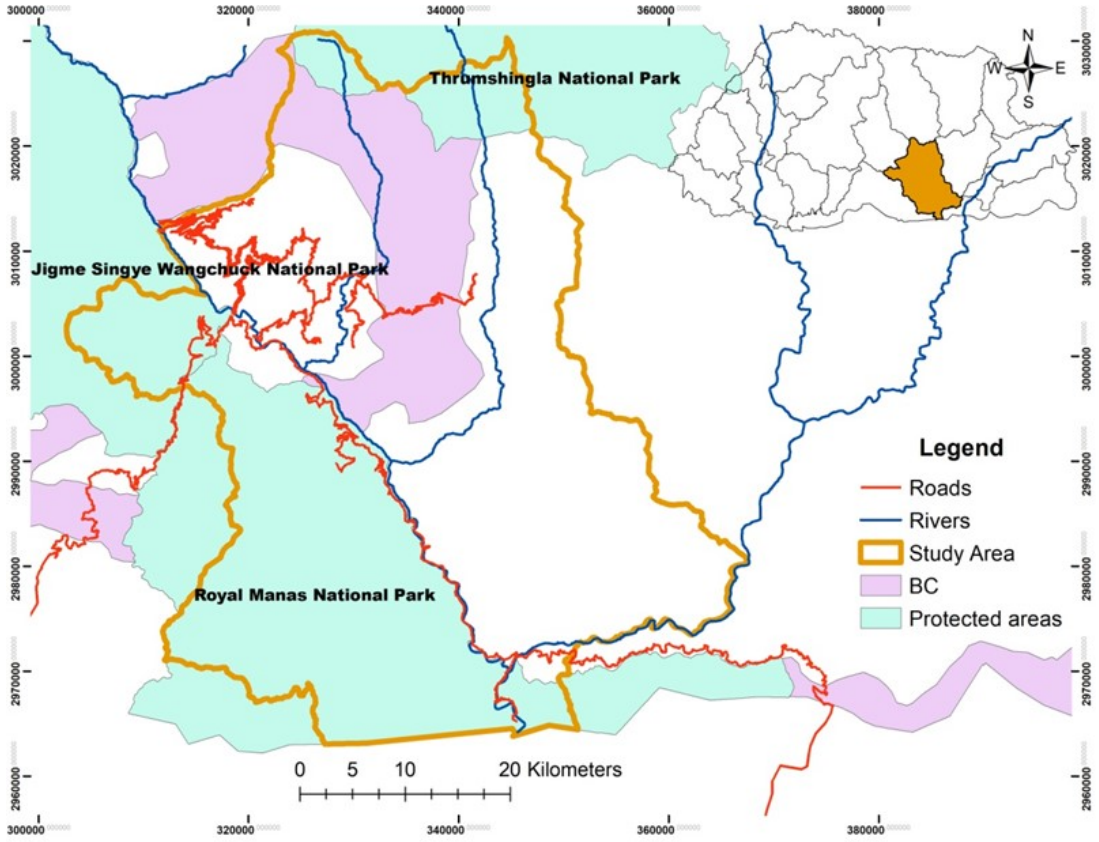


**Figure 1:** Study area map with some important destinations

bon sink nations in the world and awarded Green Destinations Gold by the ITB Berlin Germany in 2019 (TCB, 2019). Despite such nature-based attractions and international recognition, only 14% of the total arrivals came for nature-based tourism and rest were for cultural activities (TCB, 2018). The visitor numbers had increased from 287 in 1974 to 315,599 in 2019 but the proportion of the spread of tourists across 20 Dzongkhags remained same. The introduction of Tourism Levy Act in 2018 only helped to increase visitors by 0.7% from 2017 to 2018 in the Eastern Dzongkhags. Zhemgang's annual visitors share remained 0.1% of the total arrival in the country. The government's socioeconomic acceleration plan in 2009 have increased regional tourists to 77% of the total arrivals in the country in 2019. But the regional distributions across 20 Dzongkhags remained same.Given the government's drive to promote tourism on one hand and challenges emerging on other, there is a need to conduct research on tourism to guide formulation of sound policy decisions based on available data. This study was intended to understand the relationship between the resource availability and current flow of tourists in Zhemgang. The biodiversity and cultural attractions are described and destinations were evaluated based on popular index known as Tourist Potential Index (TPI).

## Materials and Methods

The field work was done from January to December 2018. The Field work involved identification of key destinations within the study area; raking of those destinations to determine potential supply of facilities and services; and demand or appeal for key destinations. The listing of major destinations was done through spot observation, past visit record of tourists and popular media publications.

*Identification of tourism destination/resources*

The list of potential destinations was identified through focus group discussion of Community-based Tourism Committee. The members of focus group discussion were mostly civil servants from Forestry, Agriculture, Livestock, Planning, Land and Environment sectors with few others from local government and independent guides. The 20 destinations listed through focus group discussion were validated with the author's spot observation and past record of tourist arrivals. This list of destinations has been distributed to experts from relevant fields for short listing through email. The expert group comprises members from Dzongkhag administration (Planning, Livestock, and Agriculture), local administrations (Dungpa and Gewog Adm.), Parks, Tourism Council of Bhutan, Lampelri Royal

**Table 1:** The criteria of destination assessment and their descriptions

| Criteria | Descriptions |
|---|---|
| Importance | It is essentially comparison between destination with similar potential resources and readiness of facilities and services that can be offered to tourist. |
| Accessibility | How easily the facilities and services within the destination is available to tourist determines the physical access. We considered conditions of road connecting each destination. |
| Seasonality | Which are the preferable months that the tourist can opt to visit selected destinations and how many months in a year those destinations can be promoted. |
| Popularity | The areas that are preferred by tourist and have gained the attention tour operators through their past visit and through social media. |
| Fragility | How much tourist a destination can accommodate over a fixed period of time without posing negative impacts. |
| Admission | The need for permission to visit destinations and special restrictions complied. |

**Table 2**: Ranking scheme for tourist destination in Zhemgang

| Criteria selected | Rating scale | Weight |
|---|---|---|
| Importance | Best attraction | 2.0 |
| | Good standard attraction | 1.5 |
| | Medium standard attraction | 1.0 |
| | Low standard attraction | 0.5 |
| Accessibility | High access | 2.0 |
| | Moderate access | 1.5 |
| | Limited access | 1.0 |
| | Difficult access | 0.5 |
| Seasonality | >7 months | 2.0 |
| | 5-7 months | 1.5 |
| | 4-5 months | 1.0 |
| | <3 months | 0.5 |
| Fragility | High development capacity | 2.0 |
| | Medium development capacity | 1.5 |
| | Limited development capacity | 1.0 |
| | No development capacity | 0.5 |
| Popularity | >100 visitors (both foreign and local) | 2.0 |
| | 50-100 visitors | 1.5 |
| | 30-50 visitors | 1.0 |
| | <30 visitors | 0.5 |
| Admission | Permission not required | 2.0 |
| | Partial permission required | 1.5 |
| | Full permission required | 1.0 |
| | Permission restricted | 0.5 |

Botanical Park and Independent Experts. The expert for the purpose of this study refers to individuals who have ideas about the places in Zhemgang and basic knowledge on visitors to Zhemgang through their association by profession or current working station. Of the 17 experts responded, 10 of them listed 10 common destinations with highest potential value of 5. These destinations were taken as final destinations to use for calculation of Potential Tourist Index (PTI). The list was returned to 10 experts for ranking based on the six criteria adopted from (Das, 2013; Gurung and Scholz, 2010) (Table 1).

The above mentioned criteria were rated by adopting a nominal scale ranging between 0.5 and 2. This scale is adopted to estimate the supply component of resources in the identified destinations (Table 2).

*Questionnaire survey of tour operators*

A survey using questionnaire was conducted to assess visitor's preference over selected destinations in the study area. Unlike in other countries, tour operators in Bhutan promote destinations and they determine the willingness to pay for facilities and services (NC, 2016). The list of tour operators who promoted tourists in Zhemgang was obtained from Tourism Council of Bhutan (TCB) and questionnaires were emailed to them. Only 32 tour operators and guides have responded and returned their responses.

To determine the potentiality of destination to promote international tourists, the appeal component was rated against nine appeals or attractions for all 10 destinations. In destinations where there are nine attractions visible, the respondents are asked to rate from value 1 to 5 indicating lowest to highest preferences by them. In absence of those attractions, they are asked to leave it blank. The values were then averaged and converted into a nominal scale of 1 to 10, with 1 being very low preference to 10 very high preferences (Das, 2013). The ratings provided by the respondent were averaged and converted into nominal scale where weight 5 is given 10 in the scale. The scale was introduced to counterbalance the demand component of the destination assessment. These data from the respondent are verified through spot observation by researcher on presence and absence of attraction parameters for each destination.

*Resource availability and appeal assessment*

The potentiality of a destination to develop as a tourist spot depends on the availability of resources and corresponding appeal by visitors. One of the important components of the destination assessment is calculation of Tourist Potential Index (TPI). This was calculated by averaging the sum of value determined for supply and demand (Das, 2013; Deng and Selin, 2012). The resource inventory for this study was purposely designed for 10 destinations and the tour operators and guides were asked to make their choice based on the nine attractions parameters. This assessment was made to compare destinations within the study area to guide local authorities to make future investment in the tourism sector (Table 3).

**Table 3:** Destination and descriptions in the study area

| Destinations | Descriptions |
|---|---|
| Trong Heritage Village | Trong Heritage village is in the heart of Zhemgang town overlooking the Dzong. This village is recognized by the government for unique ancient architecture and rural livelihoods in urban dwelling. Government has declared it as a Heritage village recently and encouraged local residents to maintain the original architectural structure with incentives of land allotted to them in the town area. There are homestays managed by the community in the village. |
| BuliTsho and Village | Buli is the centre for Nangkorgeog in Zhemgang. This place is very popular for local visitors due to the presence of a lake known as BuliTsho. There is rich cultural significance attached to this lake and people observe annual banning of visitors to the lake known as Tsho Dam. The lake is protected with Heritage Forest around, which was declared by the Department of Forest and Park Services in 2015. There are homestays run by local residents. |
| Tingtibi Birding Camp | Tingtibi is a popular halting place for birders. There are small towns and few local hotels for tourists. This is the venue for Bhutan Bird Festival conducted annually in November. Numerous birding trails radiate from this location. The popular birding trails are: Tingtibi to Dakphel trail; Tingtibi to Wangdigang trail; Tingtibi to Berti trail, Tingtibi to Gomphu trail; and Tingtibi to Tama trail. White-bellied Heron is commonly sighted in this area. |
| Bermoo Botanical Garden | Bermoo Botanical Garden is located on the edge of Trongsa – Gelephu highway, about seven kilometres from Tingtibi town. This in-situ garden was established in March 2015 with the objectives to promote conservation and protection of native plant species in the sub-tropical broadleaf forest ecoregions within an area of 21 acres. The garden consists of tree nursery (one acre), Bambusetum (one acre), Fern garden (one acre) and Musa orchard (one acre). The orchidarium was constructed as a part of the compensatory plantation scheme of the species lost through clearings of transmission corridors to rescue and rehabilitate the endangered species of orchids. In the garden, visitors can see different species of birds including giant Rufous-necked hornbill and White-bellied heron; and mammals like common leopard, golden Langur, sambar deer, barking deer and many small wild cats. |
| Berti Village and Ecocamp | Berti village is located 5 kilometers from Tingtibi. Located at the confluence of Mangdechhu and Bertichhu, the local community manages capture fisheries. They are also known to produce local rice and vegetables through organic farming. White-bellied heron is commonly sighted adjacent to this village. Agriculture farming is the major source of income for the community. The community manages ecolodge within their Community Forest supported by Zhemgang Dzongkhag. |

**Table 3:** Destination and descriptions in the study area continued …

| | |
|---|---|
| DuenmangTshachhu | DuenmangTshachu is a popular destination for local visitors in Zhemgang Dzongkhag. More than thousand local tourists from across all 20 Dzongkhags visit Tshachu every year. Located at the deep valley of Mangdechhu basins, it takes one hour walk from Praling and two hours while returning back. The Tshachu remain open from October to April every year. The history of discovery of Tshachu dates back to 8$^{th}$ century as there is evidence of the meditation cave of Guru Rimpoche. The local people believe that the Tshachu is blessed by Guru Rimpoche and therefore possess high healing power and it is believed to cure joint pain, sinusitis, headache, fracture, gastric and piles. |
| Leelang Twin Waterfall | Leelang waterfall is located on the Highway between Pantang and Panbang Village. This waterfall offers outstanding scenic beauty for the visitors. Many photographs have been taken by both local and international visitors and posted on social media. Located just seven kilometres away from Panbang, people visit this area to bathe with water vapour in summer and for picnic in winter. |
| Panbang River Adventure | Panbang is a Dungkhag (sub-district) under Zhemgang Dzongkhag. Located adjacent to Manas camp, at the confluence of two major tributaries of Manas River, Panbang is the most preferred destination for both international and domestic tourists. With two large rivers merging at the heart of the area, one of the major attractions is white water rafting operated by a local youth group, namely the River Guides of Panbang. This is also a buffer area of Royal Manas National Park and shares internal boundary with Buxa District of Assam, India. Located at 13 kilometers from the international boundary at Mathanguri, Panbang receives many day visitors from across the border through Manas National Park in India. |
| Royal Manas National Park Camp | The Royal Manas National Park (RMNP) is Bhutan's oldest Protected Areas. Established as Game Sanctuary in early 1960's, it was formally declared as Wildlife Sanctuary in 1964 and subsequently notified as National Park in 1993. Located adjacent to Manas Tiger Reserve, World Heritage Sites and Manas National Park, India, RMNP holds high significance in terms of Bhutan's Biodiversity Conservation. Many large mammals such as Royal Bemgal Tiger, Asiatic Water Buffalo, Gaur, Sambar, and Asian Elephants are commonly sighted. Eight of eleven cat species found in Bhutan occur in RMNP. |
| Bjoka Castle | The castle of BjokaKhoche is the unique architectural monument in Zhemgang. The three storey building is a residence of a descendant of a nobility family known as Khoche. It is believed that the building was constructed by taxpayers from Bhutan and Assam and there are two different designs of stone walls. Bjoka is also famous for bamboo crafting. Almost all the households are involved in bamboo crafting with women taking the lead role. |

## Results and Discussion

Based on the questionnaire survey, the choices of the destinations are assessed on the ground of willingness to pay (promote) (WTP) for various facilities and services. This information was necessary to supplement the calculation of Tourist Potential Index for 10 destinations that are identified for purposeful resource assessment.

**Table 4:** Tour operator's willingness to promote and pay for different destinations

| Size of tourists | Respondents % (*n* = 32) | Expected length of stay | Respondents % (*n* = 32) | Season | Respondents % (*n* = 32) |
|---|---|---|---|---|---|
| 1 pax | 0% | Just one day | 0% | January-March | 90% |
| 2-3 pax | 0% | Two-day trip | 0% | April-June | 37% |
| 3-5 pax | 84% | Three-day trip | 34% | July-September | 0% |
| > 5 pax | 16% | > three day trip | 66% | October-December | 100% |

*Willingness to promote tourists in Zhemgang*

Based on the questionnaire survey, 56% (*n* = 32) of the respondents are willing to pay at the cost ranging from Nu. 1,500-3,000 per tourist per night (Table 4). This cost was inclusive of lodging and food. The spot assessment cost for local hotels available during the study period vary between Nu. 700 and 1,500; the costs of tent vary from Nu. 350 to 700; and cost of homestay was Nu. 900 (Table 5). The willingness to pay by the promoters was within the existing rates provided by the local vendors. From the questionnaire survey, 84% of the respondents said they were willing to pay for group size of 3-5 pax and for the duration of three days and above (Table 4).

According to TCB (2018) the international visitors spent an average 6.63 nights and regional tourists spent 5 nights in the country. The preferred season for visit to Zhemgang was October to December (100% respondents) and January to March (90% respondents). In the last five years, Bhutan received maximum international tourists from March to April and September to November (TCB, 2018).

The willingness to promote tourists in Zhemgang by the travel agencies was in line with the potentiality of the national tourism trend and practices. However, the past record shows that the potentiality and number of tourists decreased with the increased distance to destinations from the point of entry/exit. The visitor trend from 2013 to 2019 shows that the number of visitors decreased by 3.8% from 0 to 50 kilometres and decrease by 96.1% from 250 to 350 kilometres travel distance in Bhutan (Table 6). Zhemgang Dzongkhag head office is located 364 kilometres from Paro which is a

**Table 5**: The cost of logistics for different accommodations available in Zhemgang

| Name | Cost of rooms/tents | | | | Tent | | Cost of food | | |
|---|---|---|---|---|---|---|---|---|---|
| | Single | Double | Triple | Deluxe | Single | Double | BF | Lunch | Dinner |
| Valley View Hotel | 500 | 1,000 | | 1,000 | | | 130 | 180 | 180 |
| TYP Hotel | | 800 | | 1,000 | | | 100 | 160 | 160 |
| T-Wang Hotel | 1,500 | 1,500 | 1,500 | | | | 300 | 500 | 500 |
| Manas Hotel | 700 | | 900 | 900 | | | 120 | 190 | 190 |
| Ogyen Ziloen Hotel | 700 | 900 | | 900 | | | 180 | 350 | 350 |
| Jungle Lodge | 1,500 | 1,500 | | | 400 | | 160 | 450 | 450 |
| Panbang Ecolodge | 750 | 750 | | | | 350 | 150 | 350 | 350 |
| Pantang Ecolodge | | 700 | 1,000 | | | | 120 | 180 | 180 |
| Gomphu Ecolodge | | 700 | | | | | 150 | 200 | 200 |
| White-bellied Heron Lodge | | | | | 700 | 700 | 120 | 200 | 200 |
| Tshewang Buthri | | 900 | | | | | Included | | |
| Tshering Yuden | | 900 | | | | | Included | | |

Note: BF = Breakfast

**Table 6**: Number of visitors decreasing with increase in distance to destinations from point of entry/ exit (Source: Bhutan Tourism Monitor 2013-2019)

| Travel distance in Km | 0 | 0-50 | 50-100 | 100-150 | 150-250 | 250-350 |
|---|---|---|---|---|---|---|
| Average visitors in last six years | 55,804 | 53,696 | 43,845 | 17,394 | 6,348 | 247 |
| Decrease in numbers | | 2,108 | 9,852 | 26,451 | 11,046 | 6,101 |
| Percentage decrease | | 3.8 | 18.3 | 60.3 | 63.5 | 96.1 |

**Table 7**: The potentiality index of tourist and ranking of different destinations

| Destinations | Demand value | Supply value | Index value | Ranking* |
|---|---|---|---|---|
| Trong Heritage Village | 31 | 9.5 | 20.25 | Low |
| Buli Tsho and Village | 53 | 10.5 | 31.75 | High |
| Tingtibi Birding Centre | 51 | 11 | 31 | High |
| Bermoo Botanical Garden | 35 | 9 | 22 | Medium |
| Berti Village and Ecocamp | 40 | 8 | 24 | Medium |
| DuenmangTshachu | 33 | 8.5 | 20.75 | Low |
| Leelang Twin Waterfall | 31 | 9.5 | 20.25 | Low |
| Panbang River Adventure | 32 | 9.5 | 20.75 | Low |
| RMNP Camp | 39 | 8.5 | 23.75 | Medium |
| Bjoka Castle | 27 | 7 | 17 | Low |

major entry point for international visitors by air and received an average of 247 tourists against the national average of 190,530 tourists from 2013 to 2018 (TCB, 2013; TCB, 2019). This accounts for one percent share of the total visitors in the country.

*Tourist potential index*

The potentiality index of ten destinations in the study area were calculated based on the availability of resources as supply component and willingness to promote by travel agencies as demand or appeal component. The values of potentiality for different destinations range from 17 to 31.75. On the preference ranking based on potential index, Buli and Tingtibi were group in high potential areas while Bermoo Botanical Garden, Berti ecocamp and Royal Manas National Park camp were ranked moderate potential areas (Table 5). These rankings are necessary to provide good basis for future development of tourism product diversification. Similar classifications of regional nature-based attractions were used in Central Coast Region of Western Australia (Priskin, 2001). The 50% of the destinations identified for the purpose of this study ranked low potential areas (Table 7).

The ranking category is given to compare different destinations in Zhemgang based on the TPI values. The TPI value ranging from 17-21.92 is considered as low, 21.92-26.83 as medium and 26.83-31.75 as high.

The Friedman test for resource availability showed that the mean rank of destinations varies from 1.47 to 9.47 (Table 8). The ranking based on the Friedman test showed that Buli Tsho, Village and Tingtibi Birding Centre were potential ecotourism destinations with mean rank of 9.44 and 9.47 respectively (Table 8). There was a significant difference in resources appeal by the tour operators on resources availability in destinations considered for this study; ($\chi^2_{(2)} = 229.07$, $p = 0.00$). In addition, the Pearson correlation showed that there was significant correlation between the resources appeal by the tour operators and the resources availability at the sites; ($r = .667$, $p = .035$).

Based on a similar study conducted by Das (2013), the areas with high value of supply and

**Table 8:** Mean rank for different destination

| Destination | N | Mean | Std. Deviation | Mean Rank |
|---|---|---|---|---|
| Trong Heritage Village | 32 | 1.819 | 0.1432 | 3.98 |
| Buli Tsho and Village | 32 | 2.903 | 0.1971 | 9.44 |
| Tingtibi Birding Centre | 32 | 2.885 | 0.2121 | 9.47 |
| Bermoo Botanical Garden | 32 | 2.014 | 0.1432 | 5.55 |
| Berti Village and Ecocamp | 32 | 2.194 | 0.3026 | 6.78 |
| DuenmangTshachu | 32 | 1.906 | 0.217 | 4.73 |
| Leelang Twin Waterfall | 32 | 1.743 | 0.168 | 3.14 |
| Panbang River Adventure | 32 | 1.795 | 0.2312 | 3.77 |
| RMNP Camp | 32 | 2.205 | 0.1937 | 6.88 |
| Bjoka Castle | 32 | 1.438 | 0.1291 | 1.27 |

demand were found to offer high attractions and larger choice of products to see by the visitors. This confirms that both locations rated high (Table 7 and 8) are most preferred and receives high numbers of local and international visitors. While the potentiality is a simple comparison between destinations within the landscape, the actual flow of tourists may be affected by factors such as accessibility, distance from point of entry and availability of tourism infrastructure. Gurung and Scholz (2010) identified accessibility and tourism facilities as the most important factors for orienting future scope of community tourism. Zhemgang dzongkhag as a tourist destination can suffer from lack of both these important factors. Tourism annual report indicated that there was not a single hotel that met TCB standard of certification and most existing facilities were of local arrangement that were currently used by the tourists in the study area. Priskin (2000) identified lack of good accessibility as a hindrance for development of tourism. Zhemgang is a centrally located district but poorly connected by road with two major blockages disconnecting from neighbouring districts of Trongsa and Sarpang. In terms of regional distribution of tourists, Zhemgang was ranked last 5 districts in 2018 and 2019 (TCB, 2019). The spread of tourists by distance from the point of entry indicated that only 0.1% of the tourists reach Zhemgang when they enter from Paro. All these factors would conversely undermine the potentiality of Zhemgang as a destination though the TPI would guide overall development of tourism resources in the Dzongkhag. The other important consideration can be tourism by activity wherein Bhutan receives 86% for cultural and only 14% for nature-based activity (TCB, 2018). The resource availability in Zhemgang indicates the contrast of 90% nature -based and 10% cultural activity (RLP, 2017). The destinations that are of cultural importance ranked low in the potentiality and therefore, Zhemgang is potential destinations for community-based nature tourism.

While the potentiality for nature-based tourism is evident from the resources availability and choice of tour operators, the engagement of local residents and securing their income depend on factors like transferability of skills, training opportunity for new skills and competitive ability with national guides (Jianying, Yihe, Liding, and Yang, 2009). The cooperation of tour operators to reorient of tourism policy and resource control at the local level would be essential to boost number of visitors in remote Dzongkhags like Zhemgang.

## Conclusions

Community-based tourism is a viable option for rural development in Zhemgang. The tour operators prefer to promote 3-5 pax (84%) for duration of more than three days (66%). The current tourist arrival of 0.1% of the total visi-

tors in the country halts in Zhemgang for an average of two nights. The arrival of visitors has increased from 165 to 346 between 2013 and 2019.

The Tourist Potential Index (TPI) of 10 destinations assessed for Zhemgang range from 17 to 31.7. Two destinations were ranked TPI of 26.83 – 31.75, three destinations were ranked medium with TPI of 21.92 – 26.83 and five destinations ranked low with TPI of 17 – 21.92 respectively. The destinations of the low potentiality were mostly of historical and cultural significance. While the assessment reveals high potential for ecotourism for some areas in Zhemgang, the overall annual arrival for nature based tourists accounts only 14% including trekking and adventure.

Bhutan is almost a monopoly destination of cultural tourism with 86% opting for cultural activity. Promoting Zhemgang as destinations for Nature-based activities would increase the diversification of products and services for the tourism industry and help in enhancing regional distribution of visitors. Tingtibi and Buli are two destinations that the local government, Dzongkhag Administration and Tourism Council of Bhutan can invest in development of tourism infrastructure given the high TPI values. However, the distance factors need to be addressed with the opening of entry/exit points at the nearby airports to may help to increase visitors to Zhemgang Dzongkhag.

**Acknowledgement**

We are grateful to NORAD project management of the College of Natural Resources for funding the research. We would also like to thank the Tourism Council of Bhutan for providing with a list of tour operators who promoted tourists in Zhemgang and Department of Forests and Park Services for granting approval to conduct the research. We also acknowledge the inputs provided by the expert group and members of the Community-based Ecotourism Committee of Zhemgang Dzongkhag.

**References**

Brunet, S., Bauer, J., Lacy, T.D. and Tshering, K. (2001). Tourism Development in Bhutan: Tensions between Traditions and Modernity. *Journal of Sustainable Tourism*, 9(3), 243-263.

Das, N. (2013). Assessment of ecotourism resources: An applied methodology to Nameri National Park of Assam-India. *Journal of Geography and Regional Planning,* 6(6), 218-228.

Deng, J. and Selin, S. (2012). Application of the Delphi method to ecotourism destination Application of the Delphi method to ecotourism destination. *Journal of Ecotourism,* 11(3), 224-229. DOI: https://doi.org/10.1080/14724049.2012.725520

Dorji, T. (2001). Sustainability of Tourism in Bhutan. *The Journal of Bhutan Studies,* 3(1), 84-104.

Gurung, D.B. and Scholz, R.W. (2010). Community-based ecotourism in Bhutan: Expert evaluation of stakeholder-based scenarios. *The International Journal of Sustainable Tourism and World Ecology,* 14(5), 397-411. DOI: https://doi.org/10.3843/SusDev.15.5:1

Gurung, D.B. and Seeland, K. (2008). Tourism in Bhutan: Extending its benefits to rural communities. *Annals of Tourism Research,* 35(2), 489-508.

NC. (2016). *Review report on tourism policy and strategies.* Thimphu: National Council of Bhutan.

Neth, B. (2008). *Ecotourism as tool for sustainable rural community development and natural resources management in the TonleSap Biosphere Reserve.* Kassel: Kassel University.

Priskin, J. (2001). Assessment of natural resources for nature-based tourism: the case of the Central Coast Region of Western Australia. *Tourism Management,* 22, 637-648.

Rigden, T. and Pelgen, U. (1999). *Khengrig Namsum: A historical profile of Zhemgang Dzongkhag.* Zhemgang: Integrated Sustainable Development Program.

Rinzin, C., Vermeulen, W.J. and Glasbergen, P. (2007). Ecotourism as a mechanism for sustainable develop-

ment: the case of Bhutan. *Environmental Sciences,* 4(2), 109-125.
RLP. (2017). *Community Based Tourism Action Plan for Zhemgang Dzongkhag.* Zhemgang: Rural Livelihood Project III.
Schroeder, K. (2015). Cultural Values and Sustainable Tourism Governance in Bhutan. (R. Matthew, Ed.) *Sustainability,* 7, 16616-16630.
TCB. (2014). *Annual Report: Bhutan Tourism Monitor 2013.* Thimphu: Tourism Council of Bhutan.
TCB. (2015). *Annual Report: Bhutan Tourism Monitor 2014.* Thimphu: Tourism Council of Bhutan.
TCB. (2016). *Annual Report: Bhutan Tourism Monitor 2015.* Thimphu: Tourism Council of Bhutan.
TCB. (2017). *Annual Report: Bhutan Tourism Monitor2016.* Thimphu: Tourism Council of Bhutan.
TCB. (2018). *Annual Report: Bhutan Tourism Monitor 2017.* Thimphu: Tourism Council of Bhutan.
TCB. (2019). *Annual Report: Bhutan Tourism Monitor 2018.* Thimphu: Tourism Council of Bhutan.
UNWTO. (2017). *World Tourism Barometer.* Madrid: World Tourism Organization.
UNWTO/GTERC. (2016). *UNWTO/GTERC Annual Report on Tourism Trends - 2016 Edition, Executive*