Economic benefits of natural tourism: driving community's participation for conservation in Halimun Salak National Park, Indonesia

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Abstract. Natural tourism development is expected to provide added value for ecological and economic aspects of protected areas. Natural tourism activities can generate revenue which can be allocated for conservation as well as provide economic benefits for local communities. With the proviso that tourism activities still benefit communities' economy, then it possibly will increase their awareness and participation in conservation activities. This research aims to determine the contribution of tourism activities for households’ economy and national park management. Particularly, the contribution of Halimun Salak National Park tourism household income sharing, total household expenses, as well as stakeholder perception related to the conservation at HSNP. The results determine the economic benefits of natural tourism for the community. 66% of local household income was generated from natural tourism and tourism income meets 91% of household expenditure of local communities. Tourism activities could driving community's participation for conservation in Halimun Salak National Park due to their economic dependencies on tourism.

1. Introduction
Halimun Salak National Park (HSNP) is a conservation area which covers three districts in Indonesia, i.e. Lebak, Sukabumi, and Bogor Districts. In 1992, Halimun Mountain was designated as a national park by the Decree of the Minister of Forestry (Number 284//Kpts-II/1992), with total area of 40,000 hectares. Further, by taking into account the encouragement of those who concerned about nature conservation, in 2003 Halimun Salak National Park expanded to Salak Mountain and surrounding areas. The former status of the area is a limited production forest and protected forest managed by Perhutani. Presently, conservation area of Halimun Salak National Park (HSNP) was authorized by decree of the Minister of Forestry No. 175/Kpts-II/2003 with the total area reach 113,357 hectares. HSNP expansion that include residential areas, agricultural land, and areas for other economic activities has the potential to lead a conflict of interest between ecology (conservation) and economic (livelihood) aspects. National parks in Indonesia are designed for non-exploitative use; thus, to overcome the trade-off, natural tourism is expected as suitable concept to apply in National Park (HSNP) since it can execute the exploitation of forest resources. Natural tourism development in protected areas is expected to provide added value for the region, i.e. the ecological function as well as economic function [1] [2] [3].
Natural tourism development in limited zones of conservation area can provide income for the management and be allocated for conservation, as well as offer economic benefit to surrounding community [4][5][6]. Despite economic benefits which can be obtained [7], tourism development can increase awareness and community participation in conservation activities [7], especially when the natural tourism activities have provided substantial economic benefits for them. The community will be motivated to protect HSNP, since natural tourism activities require natural settings and sustainability of environment and natural resources. As it is recognized that tourism activities in natural area will benefit the surrounding communities in term of economic aspects [9][10][12], natural tourism could also provide financial support for the conservation of national parks [13][2][14]. Therefore it needs to recognize how much the economic impact for the community and how economic impact from natural tourism can cover conservation activities in HSNP. Accordingly, three natural attractions at HSNP i.e. Gunung Bunder, Cigamea Waterfall, and natural hot springs were selected as a site research.

2. Methodology
This section consists of the area of study, sampling method, and data analysis used in this research.

2.1. Study site
Research sites were selected purposively in two villages, i.e. Gunung Bunder Village and Gunung Sari Village. In two locations, the specific tourism object chosen as research location Gunung Bunder, Cigamea Waterfall, and Pemandian Air Panas (natural hot spring water). Data was collected in March to November 2015, especially from local business and tourism worker in HSNP.

2.2. Sampling methods
The sampling technique was purposive sampling which consist of local business and local labour involved in natural tourism activities at three research sites in HSNP. The number of selected respondents were 95 persons for owned local businesses and 32 persons who being employed by local businesses. The respondents were interviewed to gather the data related to economic benefits of tourism at HSNP. This data was used to estimate the share of income and household expenses attributable to tourism income. Additionally, a Focus Group Discussion (FGD) was conducted with stakeholders from the government and key-informants from the community around the research sites.

2.3. Data analysis
Local community income related to tourism activities was calculated from the total revenue from tourism activities minus by the total cost from tourism activities. The share of income from these activities within total income of household was derived according to the following equation:

\[
\text{Tourism Income Share} = \frac{\pi_w}{\pi_t} \times 100\%
\]

Description:
- \(\pi_w\) = household’ income derived from tourism activities (IDR/year)
- \(\pi_t\) = total income of the local business’ and local worker’ household (IDR/year)

Tourism income covering for household expenditure involved in tourism activities was estimated in order to determine the extent of tourism activities that can fulfil the community’s needs. The formula of household expenditures covered by tourism was:

\[
\text{Tourism income covering} = \frac{\pi_w}{B} \times 100\%
\]

Description:
- \(I\) = Tourism income covering for household expenditures (%)
- \(\pi_w\) = Income from tourism activities (IDR/year)
- \(B\) = Household Expenditure (IDR/year)
A descriptive quantitative analysis using number and percentage which is presented by tables was also employed to explain stakeholders’ perception on the need of national parks conservation fund.

3. Results and discussions

Based on Focus Group Discussion (FGD) about the benefits of natural tourism in HSNP, economic benefits were of foremost importance to the stakeholders (figure 1). The economic benefits are elaborated from tourism income that meets household needs. Other benefits of tourism activities perceived by stakeholders in Gunung Sari and Gunung Bunder Villages were environmental benefits. Environmental benefits include reforestation and natural amenities of the HSNP area. Social benefits are only perceived by stakeholders in the Gunung Sari Village.

The existence of economic benefits encourages people to get involved in conservation. Conservation activities related tourism in Gunung Sari and Gunung Bunder villages are tree-planting on certain paths near tourism site and collecting trash around village and natural areas. Other activities employed by stakeholders in Gunung Sari village are offering tour packages with a focus on education and socialization that emphasizes the importance of HSNP preservation.

3.1. Share of Tourism Income to Community Total Income

Tourism activity in HSNP is supported by the availability of facilities for visitors which is provided by community or HSNP management. Those tourism facilities is expected can ensure the benefits to visitors and communities as tourism service providers. Visitors can participate in tourism activities more readily given the increased number of tour packages. Meanwhile, community members who provide tourism services receive economic benefits from visitors’ spending at the tourism sites.

Figure 1. The Benefits of HSNP

Figure 2. Share of tourism income and covering to expenditure in research area
Figure 2 shows that the revenue from the tourism sector has become an important part of household income with an average share of tourism income to the total incomes is 66.33%. The value of this share is categorized as a high estimate, based on research conducted by [15]. Based on the results, tourism accounts for 90.70% of household expenditure, on average.

![Figure 3. Income Share of Tourism Business Owner](image)

Based on figure 3, business owners are divided into two types, namely regular and occasional. Regular business characteristics in the third location is dominated by food stalls, while the occasional business is dominated by peddlers and other impromptu merchants every weekend. The average tourism revenue earned per month on a regular business are higher than occasional business for a third location. Revenues acquire from regular or occasional business was important in contributing to the total household income. The greater share of tourist income against household income imply the greater dependence of the business owner against tourism in the HSNP area.

Basically, in Cigamea Waterfall and Hot Springs, tourism revenues provide a share of more than 50% to the total household income. Meanwhile, in Gunung Bunder, the share of tourism revenues for total income is still less than 50%. Based on the standard to define the main types of income, a tourism activity is categorized as main income (very high) if it contributes more than 75% of the total household income [15]. Referring to these criteria, only regular business in Curug Cigamea that can be categorized that the main income come from tourism sector. Income from the tourism in hot spring and Gunung Bunder, although obtained regularly, remains side income.
Tourism labor in HSNP area were also divided into two types of work, namely regular labor and occasional labor. On average, tourism labor revenue from the tourism activities is largely achieved over 75% (figure 4). Thus, tourism can be categorized as the main source of household income in the third tourism site, particularly for regular time labor. The lowest share of tourism activities are obtained by occasional labor in Curug Cigamea. Since they are occasional labor, generally they have greater non-tourism income.

3.2. Covering of Household Expenditure from Natural Tourism

The economic benefits of natural tourism considered by communities around the HSNP is shown by the covering of income from tourism activities toward household needs. Household needs, which we analyse in this study, include monthly household needs such as food consumption, electricity, water, gas, transport, education and other spending.

Figure 5. Covering tourism income against business owner household expenditure

Average business owner household expenditure amounted to IDR 1,390,517 per month, which is less than the standard living cost in Bogor Regency by 2015 (IDR 1,900,000). This is allegedly because the communities in these tourism sites are primarily rural. Moreover, in rural areas of Indonesia, food is more available and cheaper. However, income from tourism activities in HSNP could cover households’ expenditure (> 35%). The data demonstrates that household expenditure in these three locations, except for regular business owner in Curug Cigamea, needs to be supplemented by non-tourism income. Regular business owners have excess income that can be used to invest in their business, through the addition of physical capital.

Figure 6. Tourism income covering against labor household expenditure
Based on figure 6, tourism income compared to household expenditure was smaller for occasional labor than regular labor. Most of the labor in the research site does note equal 100% of total expenditure. Therefore, most of the labor in the research site has not been able to meet the needs of the household if only relying on tourism activities. Only labor in hot springs can cover the household expenditures from tourism income. Labor which had no income except from the tourism activity should make an effort to fulfil their household expenditure. Hence, some laborers became a broker of villa rental. Generally, labor has higher dependency on tourism income than tourism business owners, since they have larger tourism income share as well as limited alternative income.

3.3. The Preservation Activities in Halimun Salak National Park

Natural tourism in HSNP relies on nature as the services offered to tourists. Well conserved natural areas are a major factor in attracting and sustaining tourism activities [16][17]. Thus, the conservation efforts towards the natural resources in the area of HSNP is necessary. Based on the FGD results, all stakeholder involved in tourism activities expressed the need for the preservation of natural resources in the HSNP area. This indicates the stakeholders recognize the link between the conditions of natural resources in the area of HSNP and tourism activities. However, forest conservation and management requires a large budget. Based on FGD result, all respondents agreed that conservation efforts will require a large budget so that funding is needed for these activities.

| No. | The Need of Additional Conservation Fund | Stakeholder in Gunung Sari Village (%) | Stakeholders in Gunung Bunder Village (%) |
|-----|------------------------------------------|---------------------------------------|------------------------------------------|
| 1.  | Need to fund preservation of national park | 64.3 | 85.7 |
| 2.  | Do not need the funds for preservation     | 35.7 | 14.3 |
| Total |                                           | 100.0 | 100.0 |

Based on the table 1, 64.3% of stakeholder in Gunung Sari state that stakeholders also have to spend money to maintain the cleanliness of the environment and preserve the surrounding environment in HSNP. However, there is still a 35.7% stakeholder in Gunung Sari who assumed that the stakeholders do not need to spend additional funds because the effort of preservation of HSNP should be sourced from the Central Government (APBN). In Gunung Bunder, 85.7% of respondents agreed with the need for additional funding from stakeholders, and only 14.3% who disagree with the additional funding. However, most of the stakeholders at both locations support the existence of additional funding support by local parties to keep the sustainability of HSNP.

Since the stakeholders already define the importance of maintaining environmental sustainability, the next step is to gauge how their efforts that can maintain the sustainability of the HSNP area. The efforts are already underway to maintain the sustainability of the National Park can be seen in table 2.

| No. | Type of Exertion             | Stakeholder in Gunung Sari Village (%) | Stakeholders in Gunung Bunder Village (%) |
|-----|------------------------------|---------------------------------------|------------------------------------------|
| 1.  | Tree Planting                | 44.44                                 | 80.00                                     |
| 2.  | Tour Packages/Education      | 11.11                                 | -                                        |
| 3.  | Environmental Cleanliness    | 27.78                                 | 20.00                                     |
| 4.  | Socialization                | 16.67                                 | -                                        |
| Total|                             | 100.00                                | 100.00                                   |
The efforts suggested by stakeholders to maintain the sustainability of HSNP is largely performed independently for the benefit of HSNP. Stakeholders in the Gunung Sari and Gunung Bunder villages have planted trees on certain trails close to tourist sites. Stakeholders in both locations also stated they have participated in safeguarding the environment by maintain cleanliness. Other activities conducted by stakeholder in Gunung Sari Village to preserve HSNP include offering tour packages combined with education and socialization about the importance of keeping the environment clean.

4. Conclusions
Economic benefits of natural tourism to society in the area surrounding HSNP is high. This research finds that 66% of total income from local business owners and employees comes from tourism activities. Income from the tourism activity meets 91% of household expenditures. All stakeholders involved in tourism activities expressed the importance of preserving natural resources in the HSNP area and more than 60% of the respondents in both location stated the need for additional funding to provide these activities. This condition indicates the stakeholders know well the link between the conditions of natural resources in the area of HSNP with the natural tourism activities, in order to support their income contribution from tourism activities.

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