

# A high conservation value analysis of ecotourism areas A case study in Tanah Laut, South Kalimantan, Indonesia

*by Fpk Ulm*

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## A high conservation value analysis of ecotourism areas: A case study in Tanah Laut, South Kalimantan, Indonesia

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**Abstract** Ecotourism is responsible travel to conserve the environment, reduce negative impacts on the environment and improve the welfare of local communities. Ecotourism is not just an ordinary tourist activity, but a combination of various interests that grow out of concern for the environment and cannot be separated from conservation values. This study aims to analyze the high conservation value of ecotourism areas. Data analysis using general guidelines for the identification of high conservation values by direct observation in the field, interviews, filling out questionnaires, and the stages of activities carried out include landscape, fauna aspect assessment, flora aspect assessment, social, economic, and cultural aspect assessment, criteria and sub-criteria assessment conservation. The results showed conservation assessment in each ecotourism area has various criteria depending on the physical condition of the area and the designation/function of the area for the life of flora and fauna as well as to meet the needs of the community. The conservation assessment of ecotourism areas in Tanah Laut Regency is included in the criteria for HCV 2, HCV 4, HCV 5, and HCV 6, which are classified as areas that have natural species, areas that are important as water providers, erosion, and flood control, areas that are important for meeting needs local communities and areas that are important for the cultural identity of local communities.

**Keywords:** eco-tourism, conservation value, area criteria, sustainable.

### 1. Introduction

Ecotourism is responsible travel aimed at conserving the environment, decreasing negative environmental consequences, and promoting the well-being of local communities. Ecotourism is not just an ordinary tourist activity, but a combination of various interests that grow out of concern for the environment and cannot be separated from conservation values. Ecotourism is one of the components used to achieve sustainable tourism development[1]. Ecotourism is a leading sector that meets social, economic, and environmental aspects. From a social and economic perspective, it can provide social



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benefits and direct benefits to the local community [2;3;4;5], guard cultural integrity for the community [6], providing job opportunities for local communities [7] through local product marketing [8] and youth work as tour guides [9]. The environmental aspect is the potential of natural resources and the environment that can become one of the leading sectors of the region [10] and help in conserving biodiversity [11].

Ecotourism in Tanah Laut Regency can be developed as it promotes conservation and provides beneficial socio-economic involvement of local residents [12]. Ecotourism emphasizes providing tourists with opportunities to learn and develop positive attitudes towards sustainability [13]. according to [14] Ecotourism is a nature tourism activity in a responsible area by taking into account elements of education, understanding, and support for natural resource conservation efforts, as well as increasing local community income. Several key aspects in ecotourism include: the number of visitors is limited or regulated to suit the environmental and socio-cultural carrying capacity of the community, environmentally friendly tourism patterns, friendly tourism patterns with local culture and customs, directly assisting the local economy, and the initial capital needed to infrastructure is not great.

Several previous studies on ecotourism conservation include: [7], that conservation and job opportunities are the center of ecotourism activities. Local people consider ecotourism as an effective impact to preserve the environment because it protects biodiversity. according to [12], community-based ecotourism has become an important mechanism for coordinating conservation and community development efforts. Ecotourism development is based on the designation of protected areas because tourism activities are encouraged inside protected areas while accommodation is encouraged outside the area to reduce environmental impact. Natural landscapes and traditional cultures are combined to attract tourism, generating economic benefits while achieving resource conservation. [15] explained that with the diversity of localized natural and cultural resources and relatively few problems of accessibility, infrastructure, inadequate marketing, and promotion, tourists are still interested in social, economic, and environmental sustainability.

Based on this description, this research needs to be carried out because ecotourism in Tanah Laut Regency can be developed as a business program that can also be a conservation strategy and can open up economic alternatives for the community and can take advantage of the intact natural beauty, culture, and local history without damaging the environment. or sell contents.

Ecotourism being developed is ecotourism for the sake of sustainable development and conservation, which is a business activity that aims to provide sustainable economic alternatives for communities in protected areas, share the benefits of conservation efforts appropriately and contribute to conservation by increasing awareness and support for landscape protection. Land that has high biological, ecological and historical value. This study aims to analyze the high conservation value of ecotourism areas. Using the HCV assessment method based on the results [16] and [17] with the stages of landscape assessment, fauna aspects, flora aspects, social, economic, and cultural aspects, and assessment of conservation criteria and sub-criteria to analyze the high conservation value of ecotourism as so that they can assist managers, business actors, government, private sector and stakeholders in assessing the suitability of natural resources and formulating strategies for sustainable ecotourism development in Tanah Laut Regency, South Kalimantan Province, Indonesia.

## 2. Study Sites and Methods

Study sites were carried out in 7 ecotourism locations located in 6 sub-districts in Tanah Laut Regency (Table 1) with using the HCV assessment method based on the results of the Consortium Revision of the Indonesian HCV Toolkit and guidelines for Identification of High Conservation Value Areas in Indonesia with stages of landscape assessment, fauna aspects, flora aspects, social, economic and cultural aspects, and assessment of conservation criteria and sub-criteria in ecotourism areas.

**Table 1.** Location of research.

Districts	Village	Tourist Attractions
Pelaihari	Panjaratan	Riverbanks ecotourism
Bajuin	Sungai Bakar	Waterfall ecotourism, granite cave
Bati-Bati	Benua Raya	Swamp buffalo ecotourism
Takisung	Pagatan Besar	Mangrove ecotourism
Jorong	Sabuhur	Nature Ecotourism, wildlife sanctuary
Panyipatan	Tanjung Dewa	Mount Birah ecotourism
Panyipatan	Kandangan Lama	Nature ecotourism, religious tourism of Datu Island

The research was carried out in several stages, including:

1. Preliminary studies include literature study, observation, and field survey.
2. High Conservation Value (HCV) (Table 2) analysis uses results-based identification of high conservation value areas guidelines [16] and [17] for direct observation in the field, interviews, and filling out questionnaires. The stages of activities carried out in the conservation assessment include:
  - 1) Landscape  
Landscape data collection is carried out to verify secondary data and information such as river networks, road networks, regional boundaries, soil types and types, regional topography, and to carry out an overview of the assessed area as a whole.
  - 2) Fauna Aspect Assessment  
The data collected included the qualitative condition of habitats in and around the study area, types of wild animals, number and reproductive status of wild animals, locations of wildlife encounters, types of wild animals that are generally hunted by the community, benefits of wild animals for the community and disturbance of wild animals.
  - 3) Flora Aspect Assessment  
Data on the assessment of flora aspects is carried out quantitatively, including plant species, species density or species dominance, and plant benefits that can be felt for the community in and around ecotourism areas.
  - 4) Assessment of Social, Economic, and Cultural Aspects  
Data collection on social, economic, and cultural aspects includes some data including the daily needs of people with various livelihoods, ethnicity, religion, customs and culture, and community relations with the environment [20].
  - 5) Assessment of Conservation Criteria and Sub-criteria  
Assessment of conservation criteria and sub-criteria is carried out after all data on the assessment of fauna, flora, and social, economic, and cultural aspects are completed. The conservation assessment follows the guidelines [17] for identifying high conservation value areas in Indonesia according to the following criteria and sub-criteria (Table 2):

**Table 2.** High conservation value (HCV) criteria and sub-criteria.

Criteria	Sub Criteria	Information	
HCV 1	HCV 1.1	Areas that have an important level of biodiversity.	
	HCV 1.2	Areas that have or provide biodiversity support functions for protected and/conservation areas.	
	HCV 1.3	Areas of endangered species.	
	HCV 1.4	An area that is a habitat for a viable population of threatened, restricted, or protected species (Viable Population).	
HCV 2	HCV 2.1	An area that is a habitat for a species or group of species that is used temporarily.	
	HCV 2.2	Landscape areas that are important for natural ecological dynamics.	
	HCV 2.3	Large landscape areas that have the capacity to maintain ecological processes and dynamics.	
	HCV 2.3	A landscaped area that contains two or more ecosystems with an unbroken (continuous) boundary line.	
HCV 3	HCV 3	Areas containing populations of representatives of natural species.	
	HCV 4	HCV 4.1	Areas that have rare or endangered ecosystems.
		HCV 4.2	Areas that provide natural environmental services.
HCV 4	HCV 4.3	Areas or ecosystems that are important as water providers and flood control for downstream communities.	
	HCV 4.3	Areas that are important for erosion and sedimentation control.	
HCV 5	HCV 5	An area that functions as a natural barrier to prevent the spread of forest or land fires.	
HCV 6	HCV 6	An area that has an important function to fulfill the basic needs of local communities.	
		An area that has an important function for the traditional cultural identity of the local community.	

Analysis of research data used include:

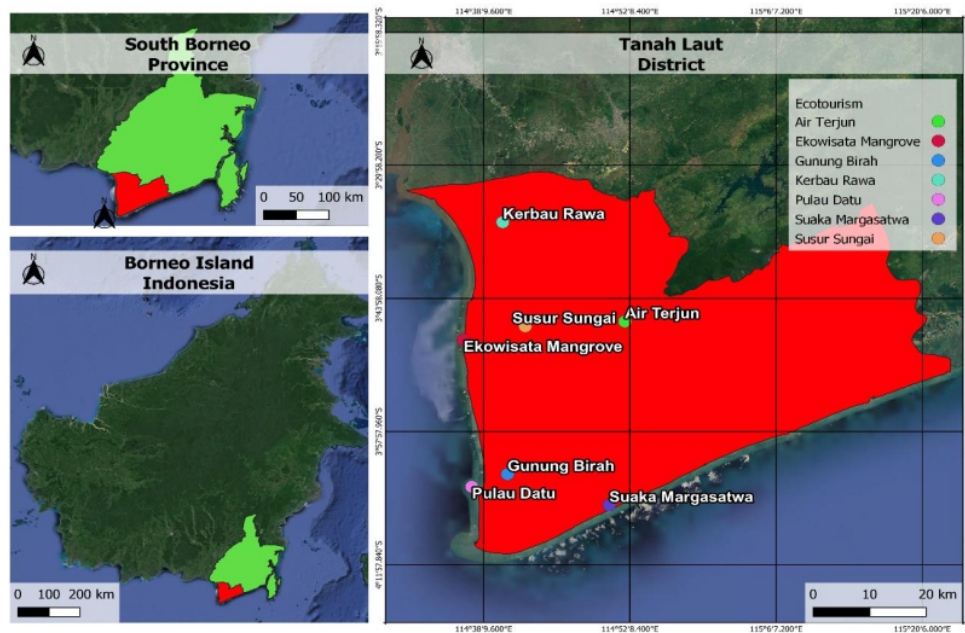
**Table 3.** Data analysis according to criteria and analysis methods.

Data analysis	Criteria	Source Data	Data collection technique	Analysis Method
Identification of High Conservation Values (HCV)	Assessment of conservation criteria and sub-criteria	1. HCV Identification Guide 2. Informant 3. Researcher	1. Literature review 2. Observation 3. Field survey 4. Interview 5. Questionnaire	HCV

### 3. Results and Discussion

#### 3.1. Landscape

Geographically, Tanah Laut Regency is located at coordinates 114°30'54,663"-115°22'38,535" East Longitude and 3°30'37,586"-4°10'41,134" South Latitude. The land area is 384,852 hectares with the district capital located in Pelaihari District. Regional boundaries: to the north, it is bordered by Banjar Regency and Banjarbaru City, to the south by the Java Sea, to the east by the Java Sea, and Tanah Bumbu Regency, and to the west by the Java Sea (Figure 1).



**Figure 1.** Geographical Layout Map of Ecotourism in Tanah Laut Regency.

Source: Geospatial Information Agency of the Republic of Indonesia.

The scope of the administrative area of Tanah Laut Regency includes 11 sub-districts, namely Bati-Bati District, Bumi Makmur District, Kurau District, Tambang Repeat District, Bajuin District, Pelaihari District, Takisung District, Panyipatan District, Batu Ampar District, Jorong District, and District Kintap. The sub-district with the largest area in Tanah Laut Regency is Jorong District with an area of 81,639 hectares (21.2%). Kintap sub-district is in second place with an area of 76,319 hectares (19.8%). The third and fourth positions are occupied by Batu Ampar and Panyipatan sub-districts with an area of 45,908 hectares (11.9%) and 40,613 hectares, respectively (10.6%). Meanwhile, Bumi Makmur Subdistrict is the area with the smallest area in Tanah Laut Regency, which is 9,542 (2.5%).

Of the 11 sub-districts in Tanah Laut Regency, in total there are 135 villages and sub-districts. The areas that have the highest number of villages and kelurahan are Pelaihari District (15 villages and 5 wards), Bati-Bati District, Batu Ampar District, and Kintap District with 14 villages each, while the sub-district with the smallest number of villages or kelurahan is Tambang District. Repeat and Bajuin District with 9 villages each.

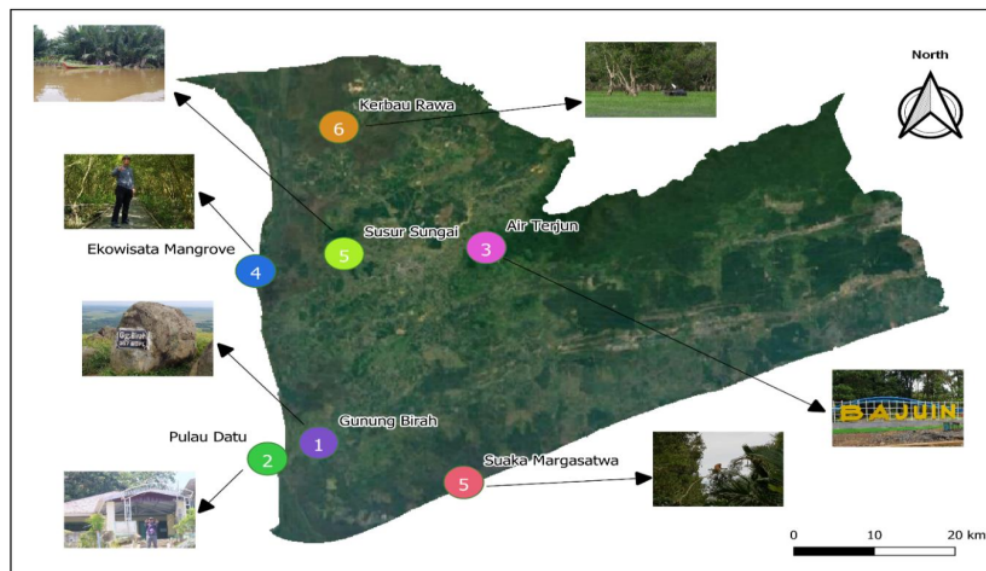
Districts based on geographical characteristics can be grouped into several categories. The sub-districts located by the sea in Tanah Laut District are Bumi Makmur District, Kurau District, Takisung District, Panyipatan District, Jorong District, and Kintap District. Meanwhile, the sub-districts that do not have a marine area are Bati-bati District, Tambang Repeat District, Pelaihari District, Bajuin District, and Batu Ampar District.

The availability of land (land) provides an overview of the land potential and directions for areas that can be developed/cultivated or because of its limitations it cannot be developed at all based on basic physical factors. Current land use (existing) provides an illustration of the extent to which the type and level of land use that has been carried out, both cultivated and non-cultivated. The availability of land is basically not released from its current status or control. The current status of land basically determines whether or not a plot of land is controlled or transferred by a third party for certain activities.

Looking at the existing area with a land-use of 92,814 ha (24.6%) is a forest area, 71,288 ha (19.2%)

is plantation land, 51,122 ha (13.7%) is paddy field and moor, and the remaining 4,157 ha ( 1.11%) for residential areas and others, Tanah Laut Regency has prepared various potentials that are still and can be managed for the benefit of improving community welfare. For this reason, Tanah Laut Regency through its spatial planning policy has prioritized 5 (five) areas with each strategic function, namely: (1) Industrial estates centered in Bati-Bati and Jorong sub-districts, (2) Agriculture in Kurau and Bumi Makmur sub-districts. , (3) marine fisheries in Kurau, Takisung, Panyipatan, Jorong, and Kintap sub-districts, (4) mining in Jorong and Kintap sub-districts,

The tourism sector is expected to become one of the industries that can encourage economic growth by providing job opportunities, increasing income and living standards, which in the end can simultaneously move other production sectors. The natural beauty of Tanah Laut Regency is a large enough potential to be used as a tourist destination, especially there are various types of tourism objects that can be visited such as beach tourism, historical and cultural tourism, nature tourism, and park tourism (Figure 2). Almost every sub-district has tourist attractions that have their own charm so that several efforts are needed such as building access to tourist areas, supporting tourism facilities such as hotels and restaurants, and preparing a quality tourism workforce.



**Figure 2.** Map of Ecotourism Locations in Tanah Laut Regency.

Notes: 1= Village Ecotourism, Gunung Birah, 2= Nature Ecotourism, Religious Tourism on Datu Island, 3= Waterfalls, Marble Caves, 4= Mangrove Ecotourism, 5= River Crossing, Proboscis Monkey Conservation, 5= Nature Ecotourism, Wildlife Sanctuary, 6 = Swamp Buffalo.

Source: Author's analysis.



## 3.2. Fauna aspect assessment

**Table 4.** Fauna Aspect Assessment.

Ecotourism Location	Animal Spesies	Benefits for Society
Mount Birah ecotourism, Kandangan Lama Village	Binti Bird ( <i>Ciconia stormi</i> ), Lathe ( <i>Centropus sinensis</i> ), Cuit Bird ( <i>Dicaeum thochiluem</i> ), Eagle ( <i>Accipitridae</i> ), Owl ( <i>Strigiformes</i> ), Kutau-Kutau ( <i>Maeronus gularis</i> ), Punai Bird ( <i>Treron vernans</i> ), Bird Swallow ( <i>Apodidae</i> ), Hirangan ( <i>Trachypithecus</i> ), Deer ( <i>Carvidae</i> ), Squirrel ( <i>Tupaia javanica</i> ), Monkey/Warik ( <i>Macaca sp.</i> ).	1) Diversity of fauna 2) Local animal habitat 3) Ecotourism attraction 4) Adding economic benefits such as fish can be sold directly or made into food products. 5) Source of knowledge/education 6) Life sustainability 7) Local advantages
Nature ecotourism, religious tourism of Datu Island, Tanjung Dewa Village	Hirangan/Monkey ( <i>Presbytis cristata</i> ), Long tailed Monkey ( <i>Macaca fascicularis</i> ), Forest Cat ( <i>Felis bengalensis</i> ), Snake Pecuk ( <i>Anhinga melanogaster</i> ), Small Egret ( <i>Egretta garzetta</i> ), Buffalo Egret ( <i>Bubulcus ibis</i> ), Beach Trinil ( <i>Actitis hypoleucos</i> ), Seagulls ( <i>Sterna sumatrana</i> ), Bondol Eagle ( <i>Haliaeetus indus</i> ), Sea Eagle ( <i>Haliaeetus leucogaster</i> ), Rat Eagle ( <i>Elanus caeruleus</i> ), Honeybird ( <i>Nectarinia jugularis</i> ), King Shrimp ( <i>Pelargopsis capensis</i> ), Fan ( <i>Rhipidura javanica</i> ), Monitor lizard ( <i>Varanus salvator</i> ).	
Waterfall ecotourism, granite cave, Sungai Bakar Village	Biuku Tortoise ( <i>Ortilia borneensis</i> ), Labi-Labi ( <i>Dogania subplana</i> ), Chameleon ( <i>Bronchocela cristatella</i> ), Gecko ( <i>Gekko gekko</i> ), Gecko ( <i>Hemidactylus brookii</i> ), Grass Lizard ( <i>Takydromus sexlineatus</i> ), Litter Lizard ( <i>Eutropics rudis</i> ), Lizard ( <i>Varanus salvator</i> ), Cobra ( <i>Naja</i> ), Snakes ( <i>Pythonidae</i> ), Sun Bear ( <i>Helarctos malayanus</i> ), Butterflies ( <i>Rhopalocera</i> ), Insects ( <i>Insecta</i> ).	
Mangrove Ecotourism, Pagatan Besar Village	Mangrove Scallop ( <i>Telescopium telescopium</i> ), Feather Clam ( <i>Anadra antiquata</i> ), Ketuyung ( <i>Cerithidea cingulate</i> ), Grandma Clam ( <i>Cerithidea quadrata</i> ), Monitor Lizard ( <i>Varanus salvator</i> ), Mangrove Snake ( <i>Chrysopelea sp</i> ), Lizard ( <i>Dasia sp.</i> ), Timpakul/Gelodok ( <i>Periophthalmus modestus</i> ), Snapper ( <i>Lates calcarifer</i> ),	

**Table 4.** (Continued)

Ecotourism Location	Animal Species	Benefits for Society
Riverbanks ecotourism, Panjaratan Village	Sea tuna ( <i>Mystus gulio</i> ), Milkfish ( <i>Chanos chanos</i> ), Shellfish, Mullet ( <i>Mugilidae</i> ), Bulama Fish ( <i>Nibea albiflora</i> ), White-breasted Sea Eagle ( <i>Haliaeetus leucogaster</i> ), Stork ( <i>Bubulcus ibis egret</i> ), Swallow ( <i>Collocalio esculente</i> ), Butterfly ( <i>Lepidoptera</i> ), Dragonfly ( <i>Anisoptera</i> ), Cricket ( <i>Gryllus Sp</i> ), Grasshopper ( <i>Caelifera</i> ), Horsetail ( <i>Carcinoscorpius rotundicauda</i> ).	
Nature ecotourism, wildlife sanctuary, Sabuhur Village	Proboscis Monkey ( <i>Nasalis larvatus</i> ), Hirangan / Langur ( <i>Presbytis cristata</i> ), Long-Tailed Monkey ( <i>Macaca scicularis</i> ), Cork Fish / Haruan ( <i>Channa striata</i> ), Betok/Papuyu Fish ( <i>Anabas testudineus</i> ), Tawes/Puyau Fish ( <i>Barbonymus gonionotus</i> ), Shallow Fish ( <i>mystus</i> ), Fish Jam ( <i>Kryptopterus lais</i> ), Saluang Fish ( <i>Rasbora</i> ), Toman Fish ( <i>Channa micropeltes</i> ), Raw Fish ( <i>Oxyeleotris marmorata</i> ), Panfish ( <i>Trichopodus pectoralis</i> ), Biawan Fish ( <i>Helostoma temminckii</i> ), and flotsam ( <i>Belontia hasselti</i> ).	
Swamp Buffalo ecotourism, Benua Raya Village	Proboscis monkey ( <i>Nasalis larvatus</i> ), Sambar deer ( <i>Cervus unicolor</i> ), Tongtong heron ( <i>Leptoptilos javanicus</i> ), White-bellied Sea Eagle ( <i>Haliaeetus leucogaster</i> ), Estuary Crocodile ( <i>Crocodylus porosus</i> ), Swamp Buffalo ( <i>Bubalus bubalis carabanesis</i> ), Egret ( <i>Bubulcus ibis</i> ), Cork Fish / Haruan ( <i>Channa striata</i> ), Betok/Papuyu Fish ( <i>Anabas testudineus</i> ), Tawes/Puyau Fish ( <i>Barbonymus gonionotus</i> ), Saluang Fish ( <i>Rasbora</i> ), Toman Fish ( <i>Channa micropeltes</i> ).	

### 3.3. Flora aspect assessment

**Table 5.** Flora aspect assessment.

Ecotourism Location	Plant Species	Benefits for Society
Mount Birah ecotourism, Kandangan Lama Village	Aren ( <i>Arenga pinnata</i> ), Tamiang Bamboo ( <i>Schizotachyum blunei</i> Ness.), Birik ( <i>Koompassia malaccensis</i> ), Moon Nanduk ( <i>Diosphykos marcophyllura</i> ), Carrion Flower ( <i>Amorphophallus titanum</i> ), Gamal ( <i>Gliricidia sepium</i> ), Gungkuang ( <i>Pachyrhizus</i> ), Alaban ( <i>Vitex pubescens</i> ), Jelutung ( <i>Dyera costulata</i> ), Jengkol ( <i>Archidendron pauciflorum</i> ), Ketapang ( <i>Terminalia catappa</i> ), Kujajing ( <i>Ficus fistulosa Reinw</i> ), Loa ( <i>Ficus racemose</i> ), Mapan bini ( <i>Cratoxylon arborescens</i> ), Jackfruit ( <i>Artocarpus integra</i> ), Rattan Ampar Mat ( <i>Calamus finlaysonia</i> ), Sengon ( <i>Paraserianthes falcataria</i> ), Cassava ( <i>Dracontomelon dao</i> ).	1) Diversity of flora 2) Local plant habitat 3) Ecotourism attraction 4) Adding economic benefits such as nipah for roofing houses, palm sugar for brown sugar, alaban for charcoal wood, gamal for building wood, etc. 5) Source of knowledge/education 6) Life sustainability 7) Local excellence.
Nature ecotourism, religious tourism of Datu Island, Tanjung Dewa Village	Rambai or Pedada ( <i>Sonneratia caseolaris</i> ), Api-Api ( <i>Avicennia sp.</i> ), Mangrove ( <i>Rhizophora sp.</i> ), Langadai ( <i>Bruguiera parviflora</i> ), Nyirih ( <i>Xylocarpus granatum</i> ), Sea Fir ( <i>Casuarina equisetifolia</i> ), Ketapang ( <i>Terminalia catappa</i> ), Putat ( <i>Barringtonia racemosa</i> ), Bungur ( <i>Lagerstroemia speciosa</i> ), Nyamplung ( <i>Callophyllum inophyllum</i> ), Pandan Laut ( <i>Pandanus tectorius</i> ).	
Waterfall ecotourism, granite cave, Sungai Bakar Village	Moon Orchid ( <i>Phalaenopsis amabilis</i> ), Banana ( <i>Musa spp</i> ), Papaya ( <i>Carica papaya</i> ), Dragon Fruit ( <i>Selenicereus undatus</i> ), Acacia ( <i>Acacia auricoliformis</i> ), Alaban ( <i>Vitex pubescens</i> ), Jengkol ( <i>Archidendron pauciflorum</i> ), Banyan ( <i>Ficus benjamina</i> ), Alaban ( <i>Vitex pubescens</i> ), Carrion Flower ( <i>Amorphophallus titanum</i> ), Sugar palm ( <i>Arenga pinnata</i> ), Birik ( <i>Koompassia malaccensis</i> ), Gamal ( <i>Gliricidia sepium</i> ), Jelutung ( <i>Dyera costulata</i> ), Ketapang ( <i>Terminalia catappa</i> ), Kujajing ( <i>Ficus fistulosa Reinw</i> ),	

**Table 5.** (Continued)

Ecotourism Location	Plant Species	Benefits for Society
	Jackfruit ( <i>Artocarpus integra</i> ), Rattan Ampar Tikar ( <i>Calamus finlaysonia</i> ), Sengon ( <i>Paraserianthes falcataria</i> ), Singkuang ( <i>Dracontomelon dao</i> ).	
Mangrove Ecotourism, Pagatan Besar Village	Buta-buta ( <i>Excoecaria agallocha L.</i> ), Bintaro/Kelampayan ( <i>Cerbera manghas L.</i> ), White fire ( <i>Avicennia marina</i> ), Jeruju ( <i>Acanthus ilicifolius L.</i> ), Mangrove ( <i>Rhizophora mucronata</i> ), Tanjung ( <i>Bruguiera gymnorrhiza</i> ) Bintaro /Kelampayan ( <i>Cerbera manghas L.</i> ) Ketapang ( <i>Terminalia catappa L.</i> ), Pandan ( <i>Pandanus odoratissima</i> ).	
Riverbanks ecotourism, Panjaratan Village	Mangrove ( <i>Rhizophora sp.</i> ), Nipah ( <i>Nypa fructicans</i> ), Rambai ( <i>Sonneratia caseolaris</i> ), Piai ( <i>Acrostichum sp.</i> ), Galam ( <i>Melaleuca cajuputi</i> ), Balangeran ( <i>Shorea balangeran</i> ), Terentang ( <i>Camposperma macrophylla</i> ).	
Nature ecotourism, wildlife sanctuary, Sabuhur Village	Mangrove ( <i>Rhizophora sp.</i> ), Nipah ( <i>Nypa fructicans</i> ), Rambai ( <i>Sonneratia caseolaris</i> ), Piai ( <i>Acrostichum sp.</i> ), Galam ( <i>Melaleuca cajuputi</i> ), Balangeran ( <i>Shorea balangeran</i> ), Stretched ( <i>Camposperma macrophylla</i> ) Purun grass ( <i>Lepironia mucronata</i> ), Semar bag ( <i>Nepenthes sp.</i> ).	
Swamp Buffalo ecotourism, Benua Raya Village	Galam ( <i>Melaleuca cajuputi</i> ), Bundung ( <i>Vetiveria zizanoides</i> ), Banta ( <i>Leersia hexandra</i> ), Kumpai Batu ( <i>Panicum virgatum</i> ), Purun ( <i>Eleocharis palustris</i> ), Grass Purun ( <i>Eleocharis acicularis</i> ), Purun Tikus ( <i>Eleocharis dulcis</i> ), Pipisangan ( <i>Ludwegia hyssopi</i> ), Parupuk ( <i>Leptochlea caerulencens</i> ), Trunk Tanding ( <i>Nyamphaea pubescens</i> ), Kangkung ( <i>Ipomea aquatic</i> ), Needle Grass ( <i>Cynodon dactylon</i> ), Pagar Kangkung ( <i>Mikania scandens</i> ).	

3.4. *Assessment of social, economic, and cultural aspects***Table 6.** Assessment of social, economic, and cultural aspects.

Ecotourism Location	Livelihood	Ethnic/Religion	Relationship with Environment
Mount Birah ecotourism, Kandangan Lama Village	Farmers, farm laborers, traders, fishermen, private breeders, small and medium entrepreneurs.	Banjar, Dayak, Javanese, Sundanese, Madurese, Acehnese, Bugis, Sasak / Islamic	1) Source of life and life support 2) An inseparable part of the ecosystem 3) Beneficiary 4) Study taker/education 5) Conservation of the environment and culture.
Nature ecotourism, religious tourism of Datu Island, Tanjung Dewa Village	Farmers/planters, industrial craftsmen, traveling traders, breeders, fishermen, small and medium-sized entrepreneurs, day laborers, builders, private employees.	Banjar, Javanese, Sundanese, Madurese, Bugis / Islamic	
Waterfall ecotourism, granite cave, Sungai Bakar Village	Farmers, farm laborers, breeders, mechanics, private employees, gold miners, construction workers, masons, small and medium-sized entrepreneurs.	Banjar, Dayak, Javanese, Madurese / Islamic	
Mangrove Ecotourism, Pagatan Besar Village	Farmers, farm laborers, traveling traders, breeders, fishermen, mechanics, nurses, small and medium entrepreneurs, private employees, traders, stonemasons, carpenters, industrial craftsmen.	Banjar, Javanese, Madurese, Bugis / Islamic	
Riverbanks ecotourism, Panjaratan Village	Farmers, traveling traders, breeders, mechanics, fishermen, private	Banjar, Dayak, Javanese, Sundanese, Bugis / Islamic	

**Table 6.** (Continued)

Ecotourism Location	Livelihood	Ethnic/Religion	Relationship with Environment
	employees, small traders, day laborers, craftsmen.		
Nature ecotourism, wildlife sanctuary, Sabuhur Village	Farmers, farm laborers, traveling traders, breeders, fishermen, mechanics, private employees, small and medium entrepreneurs.	Banjar, Javanese, Sundanese, Madurese, Bugis, Makassar / Islamic, Christian	
Swamp Buffalo ecotourism, Benua Raya Village	Farmers, farm laborers, industrial craftsmen, traveling traders, breeders, fishermen, mechanics, small and medium entrepreneurs, private employees, masseurs.	Banjar, Dayak, Javanese, Madurese, Bugis, / Islamic	

### 3.5. Assessment of conservation criteria and sub criteria

Identification of HCVs based on the results of direct observations in the field, interviews, and filling out questionnaires. According to [16;17], conservation assessment follows guidelines for identifying high conservation value areas in Indonesia based on assessment criteria, and sub-criteria as described in Table 7.

The ecotourism HCV assessment in each location is based on the interpretation of the results of field observations, field surveys, interviews, and questionnaires as well as secondary data. Each ecotourism location has various regional criteria depending on the physical condition of the area and the designation/function of the area for flora and fauna life as well as meeting the social and economic needs of local communities. according to [14], ecotourism must pay attention to the conservation of natural resources, ensure the involvement of local communities, enhance experiences, include responsible activities, and encourage productive small-scale businesses. The planning carried out must be comprehensive and holistic with the integration of the complexity of the tourism system itself.

According to [18], ecotourism should be able to encourage training to the community on conservation methods needed in environmental protection and business skills in developing local products. Conservation not only includes matters related to the protection of natural ecosystems and all their contents but also concerns justice and livelihood security for local communities.

**Table 7.** Ecotourism HCV criteria and sub criteria in Tanah Laut Regency.

Ecotourism Location	ODTW	Criteria	Sub criteria	Information
Kandangan Lama	Mount Birah ecotourism	HCV 5		An area that has an important function to fulfill the basic needs of local communities.
Sungai Bakar	Waterfall ecotourism, granite cave Nature	HCV 4 <sup>16</sup>	HCV 4.1	Areas or ecosystems that are important as water providers and flood control for downstream communities.
Tanjung Dewa	ecotourism, religious tourism of Datu Island	HCV 6		An area that has an important function for the traditional cultural identity of the local community.
Panjaratan	Riverbanks ecotourism Nature	HCV 2	HCV 2.3	Areas containing populations of representatives of natural species.
Sabuhur	ecotourism, wildlife sanctuary	HCV 2	HCV 2.3	Areas containing populations of representatives of natural species.
Pagatan Besar	Mangrove ecotourism	HCV 4	HCV 4.2	Areas that are important for erosion and sedimentation control.
Benua Raya	Swamp Buffalo ecotourism	HCV 6		An area that has an important function for the traditional cultural identity of the local community.

#### 4. Conclusion

The HCV assessment at ODTW locations includes criteria for HCV 2, HCV 4, HCV 5, and HCV 6, which are classified as areas that contain natural species, areas that are important as water providers, erosion and flood control, areas that are important for meeting the needs of local communities and areas important for the cultural identity of the local community.

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