



# The Assessment of Hapanasan Hot Spring Nature Tourism Based on the Analysis of Working Areas for Nature Tourism Objects and Attractions

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## ABSTRACT

Hapanasan Hot Spring Nature Tourism (HHSNT) is located in Rambah Tengah Baru Village, Rambah Sub-district, Rokan Hulu District, Riau Province. The area of HHSNT is 9 ha. This research aims to identify existing facilities in this area and assess the attractiveness, accessibility, environmental conditions, accommodation, infrastructure, and availability of clean water at this nature tourist location. In-depth interviews were conducted with 13 key informants. Direct observation was carried out by systematically observing and recording this region's potential nature tourist attractions. The analysis of working areas for nature tourism objects and attractions (*Analisis Daerah Operasi-Objek Daya Tarik Wisata Alam/ADO-ODTWA*) is used to determine the feasibility value of this tourist attraction. The results of this research show that the criteria value for attractiveness is 83.33%, the criteria for accessibility is 95.83%, the criteria for accommodation is 83.33%, the criteria for supporting facilities and infrastructure is 80%, the criteria for availability of clean water is 73.88%, and the criteria for socio-economic environmental conditions is 66.66%. Overall, the HHSNT area is worthy of development, with a percentage of 80.50%. The development of HHSNT can bring numerous benefits to the community, economy, and environment of Rokan Hulu. It can contribute to sustainable development while preserving the region's nature and cultural heritage for future generations.

**Keyword:** Accessibility, ADO-ODTWA, Hapanasan Hot Spring, Environmental, Nature Tourist



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## 1. Introduction

Tourism is a variety of tourist activities supported by various facilities and services provided by the community, entrepreneurs, government, and local governments [1,2,3,4]. Tourism activities are one sector that greatly influences development because they can impact economic growth and significant growth in industry, trade, agriculture, and plantations [2]. An element that is considered necessary in tourism is the development of ecotourism because the development and attraction of ecotourism can be one of the government's efforts to maintain customs and culture, which are the wealth of a nation and have selling value to domestic and foreign tourists [3]. The objects and attractions of an ecotourism area are activities and facilities that attract visiting tourists [1,2,3,4]. To provide selling value in the tourism aspect, mandatory components in nature tourist

objects and attractions (*Analisis Daerah Operasi-Objek Daya Tarik Wisata Alam/ADO-ODTWA*) include destination, attractions, facilities, and accessibility of an ecotourism destination [5,6,7,8]. One nature tourist attraction that can be developed and has advantages that can be exploited is the Hapanasan Hot Spring Nature Tourism (HHSNT) attraction. In a previous study [9,10,11] regarding the responses of tourists who visited the HHSNT attraction area, Riau showed that tourists responded well regarding attractions, destinations, destination facilities, accessibility, image, and price [9]. The government needs to be involved in pre-visit marketing strategies to change the negative image of tourist destinations, such as inadequate expansion of various facilities, coordination between stakeholders, and arrangements for multiple promotions across the region [12]. This HHSNT area has a nature landscape that is still well preserved; there are swimming pool facilities with various temperatures and a characteristic sulfur smell, which can be used for health therapy. Apart from that, there is a butterfly museum that contains various types of butterflies that have been preserved [9].

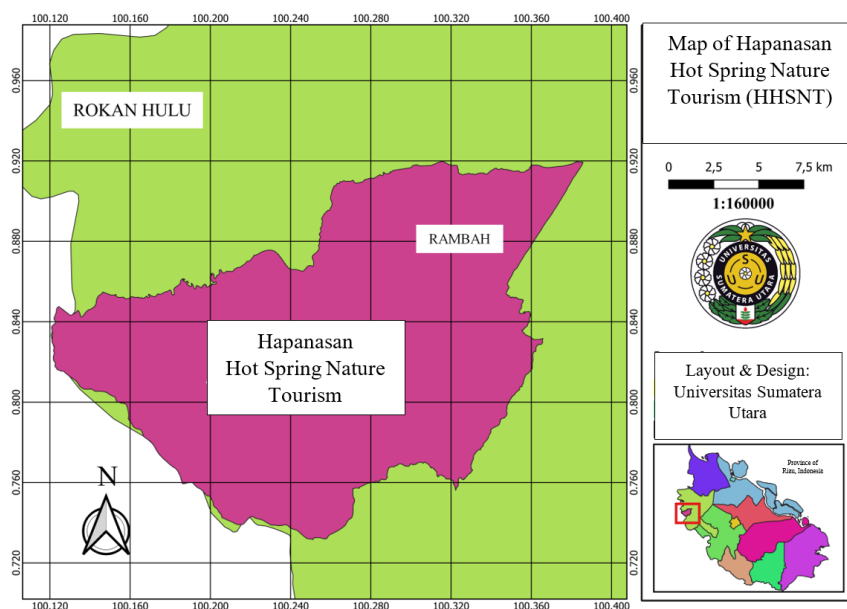
Research in this area is still very limited [9,10,11], and research related to assessing the feasibility level has never been conducted in the HHSNT area, especially by using ODTWA analysis. The analysis of working areas for nature tourism objects and attractions (ADO-ODTWA) serves several advantages in determining the feasibility value of tourist attractions like the HHSNT, such as objective assessment, comprehensive evaluation, strategic planning, risk mitigation, decision support, and promotion of sustainable tourism [5,6,7,8].

This area still requires further development and management because of its great potential to increase regional tourism and provide sustainable economic, social, and environmental benefits. In addition, further development and management efforts are needed to improve tourism facilities and infrastructure, improve services to visitors, and ensure the preservation of the surrounding environment is maintained. Therefore, this research needs to be carried out to determine this tourist area's feasibility level. This research aims to identify existing facilities in this area and assess their attractiveness, accessibility, environmental conditions, accommodation, infrastructure, and availability of clean water at this nature tourist location using the analysis method of ADO-ODTWA. By conducting this research, it will provide a deeper understanding of the conditions and potential for development in the HHSNT area and a basis for more effective and sustainable development and management planning.

## 2. Method

### 2.1 Research Location

This research was conducted in the Hapanasan hot spring area, Rambah Tengah Baru Village, Rambah Sub-district, Rokan Hulu Regency, Riau, Indonesia (Figure 1). This research was carried out from November 2022 to April 2023.



**Figure 1.** Map of research location in Rokan Hulu Regency

## 2.2 Data Collection

Data collection was carried out using in-depth interviews and questionnaires with 13 key informants from the Tourism Office, Rokan Hulu Regency, Regional Development Planning Agency, Rokan Hulu Regency, representatives of tourists visiting this location, representatives of business actors in the HHSNT, and representatives of the management of the HHSNT Area. Direct observations were also carried out by systematically observing and recording the facilities in this area and assessing the attractiveness, accessibility, environmental conditions, accommodation, infrastructure, and availability of clean water at this nature tourist location. Observations were carried out to determine the potential of nature tourist attractions and obtain information directly. Literature studies and secondary data collection were also carried out. Some secondary data comes from the Tourism Office, Rokan Hulu, and the District Regional Development Planning Agency, Rokan Hulu.

## 2.3 Analysis of Working Areas for Nature Tourism Objects and Attractions (ADO-ODTWA)

Data regarding the potential for nature tourism objects and attractions (ODTWA) is processed using the guidelines for the Analysis of Operational Areas of Nature Tourism Objects and Attractions (ADO-ODTWA) of the Directorate General of Nature Resources and Ecosystem Conservation, Ministry of Forestry, Republic of Indonesia [5], which have been modified according to the values and scores that have been determined for each criterion. The ADO-ODTWA assessment of the Hapanasan hot spring nature tourist area is carried out against six criteria. Objects are assessed according to the assessment criteria used for the ODTWA assessment, namely attractiveness, accessibility, environmental conditions, accommodation, infrastructure, and availability of clean water at tourist locations [5]. Eligibility is expressed in percent. The feasibility index for a nature tourism area is presented in Table 1.

**Table 1.** Eligibility Level Criteria based on ADO-ODTWA [5]

| No. | Percentage vaalue | Eligibility level Criteria |
|-----|-------------------|----------------------------|
| 1.  | > 66,6%           | eligible                   |
| 2.  | 33,3% - 66,6%     | not yet feasible           |
| 3.  | < 33,3%           | not eligible               |

## 3. Result and Discussion

### 3.1 Hapanasan hot spring nature tourist facilities

There are 14 main facilities, with 35 units in this tourist area. Of the 35 units available, 13 are still in good condition, and 22 are in poor condition. Complete details are presented in Table 2 and Figure 2.

**Table 2.** Hapanasan hot spring area facilities

| No.          | Type of Facility         | Unit (s) total | Condition |           |
|--------------|--------------------------|----------------|-----------|-----------|
|              |                          |                | Good      | Poor      |
| 1.           | Entrance gate from Pawan | 1              | v         |           |
| 2.           | Entrance gate from Haiti | 1              |           | x         |
| 3.           | Swimming pool            | 3              | v         |           |
| 4.           | Skating                  | 1              |           | x         |
| 5.           | Swing                    | 1              |           | x         |
| 6.           | Canteen                  | 2              | v         | x         |
| 7.           | Prayer room              | 2              |           | x         |
| 8.           | Gazebo                   | 1              | v         |           |
| 9.           | Toilet                   | 17             | v         | x         |
| 10.          | Parking area             | 1              | v         |           |
| 11.          | Security post            | 1              | v         |           |
| 12.          | Swing                    | 1              |           | x         |
| 13.          | <i>Flying fox</i>        | 2              | v         | x         |
| 14.          | Therapy pool             | 1              |           | x         |
| <b>Total</b> |                          | <b>35</b>      | <b>13</b> | <b>22</b> |

Note: v: good condition and x: poor condition



(a) Swing



(b) Flying fox



(c) Gazebo



(d) Main Gazebo



(e) Entrance Gate



(f) Canteen



(f) Swimming pool



(g) Therapy pool



(h) Prayer room



(i) Security post

**Figure 2.** Several facilities in the Hapanasan hot spring nature tourist area

Based on Table 1, it can be seen that 37.1% of facility units are still good, and most facility units in Hapanasan were damaged (62.9%), so various facilities that needed to be repaired and updated were no longer suitable for use. Facilities are the most essential thing in developing a tourist area and are the main factor that encourages visitors to visit [12]. Facilities can be one of the reasons tourists come to visit [13]. Consumer satisfaction is the consumer's needs and expectations for a facility by the consumer's hopes and desires, encouraging consumers to continue visiting and promoting tourism to other people [12]. In consumer behavior theory, satisfaction is defined more from a consumer experience perspective after visiting a tourist area and using the available facilities [13,14,15,16,17]. Apart from providing various facilities visitors can enjoy, there are three swimming pools with a large area of 1,256 m<sup>2</sup> and a water volume of 4,187 liters. Apart from varying sizes, there are also pools with different temperatures ranging from 56°C to 58°C that are used for bathing and health therapy according to visitors' needs. The HHSNT area also has a butterfly museum and a butterfly information center building measuring 8 x 12 m<sup>2</sup>. Butterfly breeding in this area has been going on since 2003. The butterfly information center is open to the public and contains a variety of butterfly insectariums. This nursery was created to restock and save butterfly species that were protected or threatened with extinction. The HHSNT area has relatively high potential and attractiveness for visitors, both for children and adults and for research purposes or just for vacation. Several facilities in this tourist area are presented in Figure 2.

### 3.2 Assessment of ODTWA

#### 3.2.1 Attractiveness

The assessment of the nature tourist attraction of HHSNT is presented in Table 3.

**Table 3.** Assessment of the Nature Tourism Attraction of Hapanasan Hot Springs

| Assessment Element                 | Description                                                                                                                                                                                         | Weight (a) | Value (b)  | Score (axb) |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|-------------|
| Uniqueness of nature resources     | Hot spring resources, nature forest, flora, Butterfly Museum                                                                                                                                        | 6          | 25         | 150         |
| Tourist activities carried out     | Enjoy the beauty of nature, Education/research, camping, Sports activities, gatherings, Health                                                                                                      | 6          | 30         | 180         |
| Wholeness environmental governance | Forest functions are still protected, there are special animals in the forest, Not influenced by residential areas, Not influenced by industrial activities, there are no other damaging influences | 6          | 30         | 180         |
| Cleanliness Travel                 | There is no industry, there are no busy roads, Garbage (polluting materials)                                                                                                                        | 6          | 20         | 120         |
| Tourist area security              | No illegal logging, No theft, No landslides, No disturbing beliefs, Annoying animals                                                                                                                | 6          | 20         | 120         |
| Comfort                            | Free from noise, Cool air, Free from air pollution, Service to visitors is good                                                                                                                     | 6          | 25         | 150         |
| <b>Total score</b>                 |                                                                                                                                                                                                     |            | <b>150</b> | <b>900</b>  |

Based on Table 3, the component of the nature tourist attraction of HHSNT consists of several elements and sub-elements with the highest value, namely the diversity of tourist activities carried out by tourists. This is due to the nature diversity in this area, which can be utilized for tourism purposes: various activities, especially health therapy, education, and so on. Next, the highest element or sub-element is the integrity of nature.

Based on the results of interviews conducted with the management team in the field, the forest around the HHSNT is still well maintained because the beauty of this forest will influence the flow of water that flows into the existing swimming pool. After all, the forest has an essential function for the environment, especially in storing water.

On the other hand, the forest still contains various species of plants and animals. The attractiveness of tourist attractions is one of the essential points in developing tourist attractions. The higher the attractiveness value of a food tourism object, the more it will attract tourists to visit the area [16,17,18]. It is stated in the Law of the Republic of Indonesia Number 10 of 2009: that everything that has the value of beauty, diversity, nature wealth, culture, and man-made products will be the target or destination of tourists. Tourist attractions such as

museums, historical heritage, traditional ceremonies, performing arts, and various crafts can be developed. For this reason, optimizing the management of the attractiveness of a tourist area needs to be done professionally because the primary goal of tourists is to be able to visit again because there is a memorable impression that is obtained when visiting, especially on aspects that need attention and need to be studied more deeply [16,17,18].

Nature tourist attractions are nature resources that have the potential to be attractive to tourists and to foster a love of nature. It is the opinion of [14] that a tourist attraction called a tourist attraction has the potential to encourage the presence of tourists in a tourist destination area. The Hapanasan hot spring area is still quite beautiful because there are still various large trees, that can be used to make tree houses and wooden huts that tourists can use to rest. The element or sub-element with the lowest value is the cleanliness and safety of nature tourist areas. The attractiveness of a nature tourist attraction is not only the responsibility of management officers and various stakeholders. It is influenced by the awareness of multiple individuals who visit to ensure the cleanliness of the area and the various available facilities [19].

### 3.2.2 Accessibility

The assessment for accessibility in the HHSNT area is presented in Table 4.

**Table 4.** Accessibility Assessment to the Hapanasan Hot Springs Nature Tourism Area

| Assessment Element           | Description            | Weight (a) | Value (b)  | Score (axb) |
|------------------------------|------------------------|------------|------------|-------------|
| Road conditions              | Good                   | 5          | 30         | 150         |
| Distance from the city       | 5-10 km                | 5          | 25         | 125         |
| Road type                    | Asphalt road width >3m | 5          | 30         | 150         |
| Travel time from city center | 11-3 hours             | 5          | 30         | 150         |
| <b>Total Score</b>           |                        |            | <b>115</b> | <b>575</b>  |

Based on Table 4, it can be seen that accessibility to the HHSNT area is classified as good. Accessibility is one factor supporting the development of Hapanasan nature tourism because it is still in the appropriate category. Facilities are things that determine the potential of a tourist attraction; this was added by research [19]. Accessibility is very closely related to comfort, safety, and travel time. Accessibility is essential because the higher the accessibility of food, the higher the comfort level for tourists. Come to visit the tourist area. From observations in the field, the distance between the Hapanasan Hot Spring nature tourist attraction and the city center is  $\pm 9$  km with good road conditions and asphalt and a road width of  $\pm 2.5$ –3 meters. On the way to the nature tourist area, we pass through residential areas, forest vegetation, oil palm, and rubber plantations owned by residents. The HHSNT area is marked by a butterfly-shaped gate, which indicates that tourists have entered the Hapanasan hot spring area, and there is a guard post that symbolizes the security of this area. Accessibility in the HHSNT is considered adequate; this is in line with the results of research [19], which states that the accessibility variable has a positive effect on the image of the Tolire Besar Lake tourist attraction, where the statistical results show that accessibility plays a vital role in achieving good access to tourist attractions. This result is also supported by research [20], which states that accessibility is an essential aspect of supporting tourism development; this is because it has a robust correlation with cross-sectoral development; without a transportation network, it is impossible for a tourist attraction to develop and be visited—by tourists..

### 3.2.3 Socioeconomic conditions

The assessment of the environmental and socioeconomic conditions of the HHSNT area is presented in Table 5.

**Table 5.** Assessment of the environmental/socioeconomic conditions of the Hapanasan hot spring area

| Assessment Element                                                  | Description     | Weight (a) | Value (b)  | Score (axb) |
|---------------------------------------------------------------------|-----------------|------------|------------|-------------|
| Spatial layout of object areas                                      | Not available   | 5          | 15         | 75          |
| Livelihood                                                          | Majority farmer | 5          | 20         | 100         |
| Community response to the development of nature tourist attractions | low             | 5          | 15         | 100         |
| Land status                                                         | State Forest    | 5          | 30         | 150         |
| <b>Total Score</b>                                                  |                 |            | <b>100</b> | <b>400</b>  |

Based on Table 5, it can be seen that there is no spatial layout of the object area, which should be based on Rokan Hulu Regency Regional Regulation Decree Number 1 of 2020 concerning the Rokan Hulu Regency

spatial plan for 2020–2040. Examining the objectives of regional spatial planning to create regional space that meets development needs while always being environmentally conscious, efficient in investment allocation, and synergistic so that it can be used as a reference in implementing development programs to achieve community welfare. The development of tourist attractions should require more complete and comprehensive thinking, planning, design, and handling so that it does not separate itself from the vision and mission for the welfare of all parties involved [18,19]. This area experienced a rapid decline during the COVID-19 pandemic, which caused several canteens and sales of typical Rokan Hulu souvenirs to close for the livelihood of residents around nature tourism areas, namely farmers. The dominant agriculture is rubber plantations and oil palm plantations, which are the population's main livelihood sources. It is necessary to develop the HHSNT area to implement best practices so that tourism can overcome the problem of population poverty; this is in line with the results of research [19], which states that Indonesia still lacks data regarding the magnitude of the role of tourism in alleviating poverty because tourism should be able to eradicate poverty. Apart from that, the development of the HHSNT area has not fully touched people experiencing poverty because of the limitations of the area management sector itself and the various parties involved; this is added by [18,19] The development approach in the tourism sector should provide benefits to people experiencing poverty, namely in the form of economic, social, cultural, and environmental benefits.

### 3.2.4 Accommodation

Assessments for accommodation elements are presented in Table 6. The accommodation has a total score of 150, where there are accommodations with 30-74 rooms; this is determined by a radius of 15 km from the HHSNT location, which is the distance from the nature tourist location to the city center, which is only 9 km with good road access. Accommodation is a significant factor for a nature tourist area because it can affect the comfort level of tourists, especially tourists from outside the area who want to spend time at nature tourist locations. With the availability of adequate accommodation to help visiting tourists, It is best to provide accommodation around nature attractions so that tourists do not have to leave the surrounding area. This can have a positive influence on local communities to establish homestays and collaborate with various related agencies. Apart from making it easier for tourists, increasing the value of nature tourism can also help boost the economy of local communities. Based on the results of interviews in the field, several tourists who visited, most of whom came from outside the region, were able to stay at hotels such as the Sapadia Hotel and Garuda Hotel, as well as various homestays and guesthouses.

**Table 6.** Assessment of accommodation elements in the Hapanasan hot spring nature

| Assessment Element | Description | Weight (a) | Value (b) | Score (axb) |
|--------------------|-------------|------------|-----------|-------------|
| Accommodation      | $\geq 4$    | 3          | 30        | 90          |
| Number of rooms    | 30-74       | 3          | 20        | 60          |
| <b>Total score</b> |             |            | <b>50</b> | <b>150</b>  |

### 3.2.5 Facilities and infrastructure support

The assessment of supporting facilities and infrastructure in the HHSNT area is presented in Table 7. The facilities and infrastructure in the HHSNT area are complete because tourists can get them in the nearest city center, such as souvenir shops, regional general hospitals, health centers, and various clinics.

**Table 7.** Assessment of supporting facilities and infrastructure in the HHSNT

| Assessment Element        | Description | Weight (a) | Value (b) | Score (axb) |
|---------------------------|-------------|------------|-----------|-------------|
| Supporting facilities     | $\geq 4$    | 3          | 50        | 150         |
| Supporting infrastructure | $\geq 4$    | 3          | 30        | 90          |
| <b>Total score</b>        |             |            | <b>80</b> | <b>240</b>  |

The facilities and infrastructure found at nature tourist locations are a prayer room with two pairs of *mukenah* (woman prayer clothes), two prayer mats, and a water bowl for ablution. Apart from that, there is also a 15 x 15 m<sup>2</sup> parking area. The HHSNT management also provides an empty field, which can be used as a parking area at any time if there is an explosion of visitors. Facilities and infrastructure are essential things that must exist for every nature tourist area because they will influence tourists' interest in visiting. This is stated in the statement [12,13] that the facilities and infrastructure of a tourist area are used to serve visitors and create satisfaction for them. Facilities and infrastructure are essential things that must exist for every nature tourist area because they will influence tourists' interest in visiting. This is reflected in the statement [13] that the facilities and infrastructure of a tourist area are used to serve visitors and create satisfaction.

### 3.2.6 Accommodation

The availability of clean water in the HHSNT area is presented in Table 8. Table 8 shows that clean water availability in the HHSNT Area is plentiful and abundant, and the distance between the clean water location and the tourist attraction is 0–1 km. The advantage of this area is that it has many springs and a water bar (a small river), located next to the swimming pool, flowing constantly. The availability of clean water in a tourist area is critical to carrying out tourism activities, especially in tourism [14,21]. The development of a tourist area is determined by many factors that must mutually support each other so the management process can run smoothly.

**Table 8.** Assessment of Elements of Clean Water Availability in the HHSNT

| Assessment Element                                                   | Description               | Weight (a) | Value (b)  | Score (axb) |
|----------------------------------------------------------------------|---------------------------|------------|------------|-------------|
| Volume                                                               | Abundant water            | 6          | 30         | 180         |
| The distance from the clean water location to the tourist attraction | 0-1 km                    | 6          | 30         | 180         |
| Suitability for consumption                                          | Requires simple treatment | 6          | 25         | 125         |
| Ease of flow to objects                                              | Very easy                 | 6          | 30         | 180         |
| <b>Total score</b>                                                   |                           |            | <b>114</b> | <b>665</b>  |

Based on Table 2 till Table 8, the ODTWA assessment criteria classification for HHSNT is obtained, as presented in Table 9. The results of the assessment of nature tourist attraction objects based on Table 9 show that the attractiveness criteria are worth 83.33%, the accessibility criteria are 95.83%, the accommodation criteria value is 83.33%, the supporting facilities and infrastructure criteria, the value is 80%, and for the requirements of clean water availability, the value is 73.88%. For the criteria of socio-economic and environmental conditions, the value is 66.66%. Thus, the HHSNT is suitable to be developed as one of the nature tourist destinations in Rokan Hulu Regency, with a feasibility level percentage of 80.50%.

Various subsequent actions that can be pursued encompass the enhancement of infrastructure, upgrading facilities, environmental stewardship, promotional endeavors, human resource training and advancement, crafting tour packages, and forging partnerships with relevant stakeholders [19,20]. Planning and development of infrastructure needed to support the development of HHSNT, such as road access, parking lots, public toilets, and other supporting facilities. Existing facilities at tourist locations, such as developing recreation areas, building lodging or accommodation, restaurants or food stalls, and security and safety facilities, still need to be improved. Sustainable environmental management efforts are required, including nature conservation and wise use of nature resources to preserve ecosystems and nature tourist attractions. Marketing and promotional strategies to increase the visibility of HHSNT, both locally, regionally, and nationally, need to be carried out, such as promotional campaigns, participation in tourism exhibitions, and social media and digital platforms [15,16,17,18,19,20]. Training and development of human resources, including training for cleaners, tour guides, and other workers, must be carried out to improve the quality of service to visitors. Tour packages that are attractive and suit the interests of visitors, such as nature and cultural tourism packages, need to be developed to increase tourist attractions and visits. It is also essential to collaborate with various related parties, including local governments, non-governmental organizations, and local business actors, to support the development and management of HHSNT holistically and sustainably. In this way, the HHSNT can develop into one of the leading tourist destinations in Rokan Hulu Regency, providing sustainable economic, social, and environmental benefits for the local community.

**Table 9.** Classification of ODTWA assessment criteria for HHSNT

| No                       | Criteria Assessment                 | Weight (a) | Value (b) | Score (axb) | Score Total | Index        | Information     |
|--------------------------|-------------------------------------|------------|-----------|-------------|-------------|--------------|-----------------|
| 1                        | Attractiveness                      | 6          | 150       | 900         | 1.080       | 83.33        | eligible        |
| 2                        | Accessibility                       | 5          | 110       | 575         | 600         | 95.83        | eligible        |
| 3                        | Environment, Social and Economic    | 5          | 70        | 400         | 600         | 66.66        | eligible        |
| 4                        | Accommodation                       | 3          | 40        | 150         | 180         | 83.33        | eligible        |
| 5                        | Facilities and infrastructure       | 3          | 80        | 240         | 300         | 80.00        | eligible        |
| 6                        | Support Availability of clean water | 6          | 120       | 665         | 900         | 73.88        | eligible        |
| <b>Eligibility level</b> |                                     |            |           |             |             | <b>80.50</b> | <b>eligible</b> |

#### 4. Conclusion

There are 35 facility units in HHSNT. However, only 37.1% of facility units are still good. most of the facility units in HHSNT were damaged (62.9%), so repairs were needed. The HHSNT area, Rokan Hulu Regency, Riau, is eligible of being developed as a nature tourist destination with a percentage of 80.50%. The assessment underscores the promising potential of HHSNT destination, provided that development efforts are conducted in a sustainable manner, with careful consideration of environmental conservation, community involvement, and strategic planning guided by the principles of ADO-ODTWA.

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