Potential of Ecotourism in Open Space of Kahayan Riverside of Palangka Raya City

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Abstract. The Kahayan River is one of the largest rivers in Central Kalimantan and has attracted both domestic and foreign tourists. The typical life and settlements along the Kahayan River provided a unique panorama that could be developed into ecotourism and enjoyed by visitors and could enhance tourism development in Central Kalimantan as its one of the uniqueness of Central Kalimantan Province. The river is the main orientation of the Dayaks, who has the philosophy that living water is the source of life. They relied on riverside area as a green space for the area that functions as a buffer zone and open space of the city. The Kahayan Riverside has an important role in the development of city tourism to date. Activities along the Riverside areas one of the economic centres of the city's complex, which is sufficient and supports the activities of the city dwellers. The purpose of this study was to develop the concept of ecotourism for the Kahayan Riverside as a form of implementation and recommendation for the policy of Palangka Raya City Government. Ecotourism supports the sustainability of the community and the future Kahayan River area. The research used a mix-used method comprised of several phases: (1) preparation; (2) implementation; and (3) post-implementation. Field observation and data exploration were conducted through interviews with selected natives. The analysis provided a tacit knowledge of descriptive interpretative elaboration of various aspects of the local community life. The results produced an ecotourism design, specifically on the arrangement of river tourism areas and promotions of culture, the typical Central Kalimantan handicrafts and the attractiveness of the Kahayan Riverside area. The ecotourism concept provides recommendations to the Palangka Raya City, Central Kalimantan concerning the: (1) physical concept of arrangement; and (2) non-physical concepts, with regard to economic and social analyses of the Kahayan River community. Both concepts supported the development of ecotourism in the Kahayan Riverside area towards sustainable development that is oriented towards the preservation of the Kahayan Riverside area.

1. Introduction

International tourism trend carries the concept of ecotourism (sustainable tourism). Ecotourism in Indonesia promotes the wealth of Indonesia natural and cultural resources of various regions in Indonesia as tourist attractions. Various ecotourism potentials are one of the keys to increasing development in the Indonesian region. Ecotourism also conserves the environment and encourages the development of sustainable tourism [1].

The potentials of natural and cultural resources in Indonesia can be developed through natural tourism, as a niche of ecotourism. Central Kalimantan Province comprises of many large and small rivers (anjir) that have the potential to be developed as natural tourism. One of the major rivers in the Central Kalimantan Province located in the City of Palangka Raya is the Kahayan River to be developed
into a superior tourism potential especially for the people of Central Kalimantan Province. The 750 km long Kahayan River is claimed to be one of the longest rivers on the Island of Borneo. The Kahayan River harbours various types of fish and flora that grow in the vicinity [1].

The Kahayan River is currently attracting both domestic and foreign tourists. Tourism activities include enjoying the lives of the people along the banks of the Kahayan River, observing their livelihoods that depend on fish farming (fish cages) in lanting houses. River boat rides can take tourists to enjoy the panoramic community lifestyle and settlements along the riverside. Furthermore, the public open spaces around the Rambang Pier is also potential to become the mainstay of Palangka Raya City community tourism. The Kahayan River and its surrounding natural resources is the heart of the people living in Central Kalimantan. The life along the Kahayan River has the potential to be developed through its arrangement and restoration depicting the city of water or the city of thousand rivers [2]. River tourism arrangements and riverside infrastructure are planned and designed in the context of tourism promotion in Central Kalimantan in the future [3].

One of the traditional villages located on the Kahayan Riverside is Kampung Pahandut. Kampung Pahandut has a high historical value as the forerunner of Palangka Raya City civilisation [4]. Some of the preserved heritage of Central Kalimantan could be seen through the original architecture and culture, one of such is the house of Betang (Karak Betang), which is a stage house building. The ethnic Dayak cultural viscosity setting has maintained the authenticity of the building. Rambang Pier is the centre of Kampung Pahandut and the city’s economic centre and an icon of Central Kalimantan Province. Balai Basarah is a place of worship for the Hindu Kaharingan religion of Central Kalimantan and Sandung serves as the place to store ancestral bones as a tourist attraction [5].

The ecotourism attraction of the Kahayan Riverside is also increasingly supported by the local cultural heritage. Such include the typical Central Kalimantan crafts made from nyatu and rattan sap, such as the replica of traditional boat and Dayak house, rattan handicrafts such as bags, hats, mats, as well as the local culinary, gemstones for jewellery, as well as the benang bitnik/local batik [4].

The potential of developing the cultural diversity of Kampung Pahandut for ecotourism is not a new concept, since in 2009, the City Government of Palangka Raya has placed Kampung Pahandut as part of the tourism development area in the Regional Spatial Plan (RTRW) (Palangka Raya City Spatial Plan 2009-2019). Nevertheless, the development of Kampung Pahandut Kahayan Riverside area as tourism area has not been implemented yet [4].

The concept of ecotourism for the Kahayan Riverside area will design based on potential of water attraction such as boat rental to travel around water, cano festival. The concept of ecotourism is to support sustainability of the future Kahayan River area. The concept of river tourism areas is to promote the cultural and art, promotion of Kalimantan souvenir and handy crafts and the promotion of the of Cano attraction in Kahayan Riverside. The concept of ecotourism will be recommended to the Palangka Raya City Central Kalimantan.

Based on various literatures, Kampung Pahandut is the forerunner of Palangka Raya City which has not been highlighted in ecotourism development. The idea is to apply the concept of ecotourism for the future environmental sustainability of the riverside area through managing river tourism, promoting the culture of Kampung Pahandut, the Kahayan Riverside area, and promoting the wealth of culinary and craft tourism, which should be supported by the Central Kalimantan Regional Government. Ecotourism structuring planning on the edge of the Kahayan River is an example that will be used for riverfront city development and city spatial policy parameters [5].

Research on ecotourism along the Kahayan River is quite extensive. The conservation of the settlements and natural attractions will be useful for mitigating global warming. Therefore, it is necessary to explore the potential of ecotourism to preserve vegetation and reduce global warming and the ecotourism planning concept an an integrated green open space in the Kahayan Riverside areas. The purpose of this study is to develop the concept of ecotourism for the Kahayan Riverside area for policy recommendation to the City Government of Palangka Raya. The concept of ecotourism that is proposed is aimed towards the sustainability of the community and the sustainability of the future Kahayan River area. The detailed objectives of the study include: (1) identifying the tourism potentials of the Kahayan
River (2) mapping the potential of open space in the riverside area along with the available infrastructure to support the region. (3) analysing facilities that support the Kahayan Riversid toward eco-tourism.

2. Methodology
The research location was in Langkai Village in Figure 1 [6], Pahandut District of Palangka Raya City within Central Kalimantan Province. Langkai Village is a newly established district, previously under the administrative area of Kampung Pahandut. Kampung Pahandut was originally a hamlet. In the past, Kampung Pahandut was better known as the Handut Hamlet (1894) [4]. Pahandut is the embryo of the initial settlement grew and developed into the City of Palangka Raya. The total area of Kampung Pahandut is 950 ha or 9.5 km² with the total population is 85,591 household [3]. The boundary of administrative of Langkai Village as a Part of Kampung Subdistrict consist of: (1) the north is Pahandut Seberang village; (2) the east is Tanjung Pinang village; (3) the south is Panarung village; (4) the west is Langkai village.

Figure 1. Map of the settlement area of Langkai Village.
The method used is a combined method through several phases [7]: (1) preparation phase; (2) implementation phase; and (3) post-implementation phase. Data were collected through field observation and data exploration based on interviews with selected respondents. The results of field observations and data exploration were analysed through tacit knowledge as a descriptive interpretation of various aspects of the lives of local people. There were two important physical aspects to be taken into the ecotourism development, namely [10]: (1) the natural physical settings; and (2) non-physical settings, namely economic and social. Both aspects supported the achievement of ecotourism in the Riverside towards sustainable development that is oriented towards the preservation of riversides. The phases of research activities in the Flamboyan Area was used to find various potential development of ecotourism areas on the Kahayan Riverside area [8]. The preparation phase would include, among others: (1) Collection of data or literature (secondary data) on the potentials of regional resources related to ecotourism development; (2) Initial identification of the potential natural resources related to vegetation, and access to the Flamboyan of the Kahayan Riverside Area; (3) Mapping the potential area of natural resources in the Flamboyan of the Kahayan Riverside Area.

The potential for ecotourism development in the Flamboyan of the Kahayan Riverside Area included [9]: (1) Identification of potential access to the local people; (2) Identification of of watershed vegetation (3) Identification of potential supporting areas (circulation and main access to the area); (4) Identification of environmental preservation and arrangement efforts; (5) Identification of vacant land for green open spaces.

The implementation phase would include: (1) Conduct a cross check through direct observation in the Flamboyan area of the Kahayan Riverside. (3) Compilation of data from survey results and supporting data on the potential of the Flamboyan area of the Kahayan Riverside (compilation of primary and secondary data).

The post-implementation phase uses qualitative method by descriptive analysis included: (1) Analysis of data from in the field surveys and interviews to the people of Flamboyan area as data supporting to show potential area for ecotourism in the Kahayan Riverside; (2) The results will be recommendation to plan of ecotourism development. (3) Designed of the basic concept of ecotourism in the Flamboyan area of the Kahayan Riverside.

The Kahayan River area is a tourism potential site relying on the river and natural wealth settings. River transportation is a potential for alternative transportation owned by Government of Palangka Raya Central Kalimantan. Therefore this study also used various literatures to identify the philosophy and theories related to ecotourism as well as to economic and social capital studies of the people in the Flamboyan Area under the banks of the Kahayan River, Palangka Raya City of Central Kalimantan Province.

3. Results and Discuss
The analytical benchmark referred to the basic criteria for identifying the potential of the Flamboyan, Kahayan Riverside Area [8]. Reference/criteria were used to initiate the activities and basic considerations in identifying the site potentials.

3.1. Identification of The Potential of Open Space Accessibility
The Flamboyan area is accessible through land transportation such as four-wheeled and two-wheeled vehicles, and on foot. The Flamboyan area can also be reached through river transportation using klotok (traditional river boat), and mechnesboats. The land transportation network connected the sub-districts in the City of Palangka Raya. At the Flamboyan area, facilities and infrastructure have been built by the City Government of Palangka Raya. These facilities and infrastructure were part of the observations in addition to settlement patterns, vehicle circulation patterns, and the the use of green spaces in the Kahayan Riverside area as a potential for ecotourism development as shown in Figure 2.
Figure 2. The potential of Kahayan Riverside area.

Figure 2 shows the location of the study as a tourist area apart from a residential area. The green space area is located in the study location (empty area) between the circulation paths in the Flamboyan area. Gardening land could support ecotourism and green spaces. The most important potential in this area is the tourist area on the riverside. The Flamboyan area was arranged according to the initial concept by the First Indonesian President, Ir. Soekarno, which displayed the Kahayan Riverside as the city tourism area of Palangka Raya City.

3.2. Identification of Utilisation of Watershed Vegetation and Application Patterns

The results of the field identification showed that the area has the potential for river tourism and green open space on the Kahayan Riverside to maintain sustainable Kahayan River community. Data analysis of the vegetation revealed that there are two main points, namely: (1) identification of a public open space that characterises the river area and revives the Palangka Raya City area; and (2) identification of open spaces that will be developed for green spaces (Figure 3a and 3b) and natural tourism by utilising natural factors in the Flamboyan area of Kahayan riverside as shown in Table 1.

| No. | Analysis                                                                 | Total Percentage (%) |
|-----|--------------------------------------------------------------------------|----------------------|
| 1.  | Proposed open space plans that could be developed for urban forest tourism activities by utilising natural geographical factors | Kahayan River Community: 38 people (50.67%) Other Community: 36 people (48%) |
| 2.  | Proposed plan for a public open space that characterises the Green Open Space area and enlivens the Palangkaraya City area | Kahayan River Community: 58 people (77.33%) Other Community: 60 people (80%) |

3.3. Identification of Potential Regional Supports (Main Circulation and Access to Regions)

Identification of potential resources were related to circulation patterns, access to the area and the environmental link system of the Kahayan River Region. Mapping the potential points of natural resources (SDA) in the Kahayan River area produced an alternative type of circulation pattern and main access to the Flamboyan area as shown in Table 2.
Figure 3. Identification of Green Space in the Flamboyan area and Corn plants in the Flamboyan green space area.

Table 2. Analysis of Main Circulation and Access Patterns to the Kahayan Riverside Area.

| No. | Analysis                                                                 | Total Percentage (%) | Kahayan River Community | Common Community |
|-----|--------------------------------------------------------------------------|-----------------------|-------------------------|------------------|
| 1.  | Proposed plan for a circulation pattern of public spaces on the banks of the Kahayan River that are responsive to the environment and nature | 58 people (58%)       | 51 people (70.41%)      |                  |
| 2.  | Proposed plans for open space as a common space to accommodate various community activities within the Kahayan River area | 42 people (42%)       | 49 people (86.73%)      |                  |

Identification of potential open spaces for common space is important to accommodate various community activities. The Flamboyan Edge area of the Kahayan Riverside area is shown in Figure 4, while Figure 5 depicts an example of location for patterns of application of vegetation in the settlement area of the Kahayan River.
Figure 4 shows that the potential points of infrastructure in the Flamboyan area open space area were well maintained. Figure 5 shows the design of available access to the Flamboyan Area. The existing circulation and access patterns to the Kahayanan Riverside area were designed by the Palangka Raya City Government in 2012 to maintain the green area of the Kahayanan River.

3.4. Identification of Environmental Conservation and Arrangement
The potential of natural resources as a basis for identifying environmental preservation and common spaces in the Flamboyan area of the Kahayanan River was mapped in relation to the arrangement of common spaces in the Flamboyan space area of the Kahayanan River including environmental preservation as listed in Table 3.

Table 3. Analysis of environmental maintenance and shared spaces.

| No. | Analysis | Total Percentage (%) | Kahayan River Community | Common Community |
|-----|----------|-----------------------|-------------------------|------------------|
| 1.  | Proposed Spatial planning design for the Kahayanan Riverside area to support public open space areas. | 57 people (57%) | 59 people (59%) |
| 2.  | Proposed a maintenance plan for the general area of the Kahayanan River area to support public open plan. | 43 people (43%) | 41 people (41%) |

Map of the potential points for joint spatial planning and environmental maintenance of the Kahayanan River area is given in Figure 6. Figure 6 also showed the potential points for joint spatial planning and environmental maintenance of the Flamboyan Area on the Kahayanan Riverside Area. The existing Flamboyan Area is good access to local people and urban space in the Kahayanan River is a part of common space. It showed the arrangement of the public spaces and environmental maintenance in the Flamboyan Area is a part of the Kahayanan Riverside Area.
Figure 6. Maps of the environmental and open spaces in the Flamboyan Area and identification of green space in the Lower Flamboyan Area.

3.5. Identification of Empty Land Use for Public Space Used
Analysis of the use of vacant land on the edge of the Kahayan River formed the basic criteria of analysis (Table 4), which has the objective to identify potential vacant lands, which could be proposed for conducting activities of the Kahayan River bank community. Data analysis confirmed the use of vacant land for public space and preservation of Kahayan riverside vegetation area as shown on maps provided in Figure 7.

Table 4. Analysis of Vacant Land Use in the Kahayan River Area.

| No. | Analysis                                                                 | Kahayan River Community | Common Community |
|-----|--------------------------------------------------------------------------|-------------------------|------------------|
| 1.  | Proposed to use vacant land of the Kahayan Riverside area for residents’ activities. | 51 people (60%)         | 58 people (55%)  |
| 2.  | Proposed to use vacant land for green space area, farm area and corn plantation as a feature of the Kahayan riverside area. | 49 people (40%)         | 42 people (45%)  |
Figure 7. Map of the utilisation of vacant land in the Flamboyan area and Identification of vacant lands is available in the Flamboyan settlement area.

Figure 7 indicated that the spatial setting of vacant land for shared space and the preservation of vegetation along the Kahayan riverside, included: (1) spatial planning of the Kahayan Riversides to support plans for public green space areas; and (2) To maintain the environment of the Kahayan Riverside area to support the activities of Flamboyan community area. Figure 7 also pictured an example of the existing condition of the Flamboyan Area such as the vacant land uses for corn plantation, farm activities and green area, forest area as a buffering of the Kahayan Riverside Area.

4. Conclusion
The potential of the Kahayan Riverside area its location along the Kahayan Riverside, focus in the Flamboyan area. The results of this study identified such as: (1) potential accessibility to the region; (2) maintaining of watershed vegetation and green space area; (3) potential of supporting areas (circulation and main access to the area); (4) environmental preservation; and (5) vacant land for cone plantation and common spaces. Identification of potential access to the Flamboyan area of the Kahayan Riverside enhanced the potential development the area for tourism apart from being a residential area. The green space areas were located between the circulation paths of the Flamboyan Area. Vacant land will developed into gardening land and support ecotourism and green spaces.

Identification of the vegetation and its utilisation patterns indicated the need to maintain the green open spaces in the Kahayan Riverside. It showed that some of the green open spaces were created naturally, whereas others were human-induced crop plantation for daily needs that enhanced green open spaces. This green open space was necessary to retain erosion and floods.

The results of the research found a well patterns of vegetation along the settlement area of the Kahayan River and very good potential points of infrastructure. The open space of the Flamboyan Area is a potential area. Furthermore, identification of the potential supporting areas (circulation and main
access to the area) showed that open spaces as common spaces were required to accommodate various community activities. Findings of the research indicates the availability of access to the Flamboyan Area. The existing conditions of the circulation and access patterns to the Kahayan Riverside were designed by the Palangka Raya City Government to improve the physical setting of the area.

Identification of the environmental preservation showed that the research location was focused on the maintained of green area for public space used. Flamboyan area will planned for Green area to protect the peoples from flooding along Kahayan river. Identification of vacant lands uses for forest plantation Kahayan Riverside area to support of public green space. Public green space areas is a solution of Kahayan River area to support Flamboyan peoples. Green space area for the future in Flamboyan area is to generate more income from the farm activities and tourism activite for local people.

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