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## Preface

The 5<sup>th</sup> Annual Applied Science and Engineering Conference (AASEC) 2020 is hosted by Technical and Vocational Education study program, School of Postgraduate Studies, Universitas Pendidikan Indonesia (UPI), UPI Publication Center, in collaboration with other co-hosting institutions such as Universitas Negeri Jakarta, UIN Sunan Gunung Djati Bandung, Universitas Trisakti, Politeknik Enjening Indorama, Universitas Warmadewa, Sampoerna University, Universitas Negeri Surabaya, Sekolah Tinggi Teknologi Garut, Universitas Trilogi, Institut Pendidikan Indonesia, Universitas Serang Raya, Universitas Mataram, Universitas Kanjuruhan Malang, Politeknik Negeri Malang, Universitas Negeri Gorontalo, UIN Sulthan Thaha Saifuddin Jambi, and Universitas Muhammadiyah Sidoarjo.

Unlike the previous conference whose all speakers were scientists, this year's AASEC made an attempt to attract more participation from a wider community by inviting an Indonesian public figure who is also an environmentalist, Hamish Daud Wyllie, along with the other scientists such as Fitri Khoerunnisa from Universitas Pendidikan Indonesia, Indonesia; Muhammad Aziz from Tokyo University, Japan; and Yulfian Aminanda from Universiti Teknologi Brunei, Brunei Darussalam to give a talk based on their expertise under the theme "Green Technologies for Sustainable Environmental Development". The conference was set to be carried out on 21-22 April 2020; however, due to the outbreak of COVID-19, changes arose starting from the postponement of the conference to turning it out into a virtual seminar. To this extent, the parallel presenters were required to send their presentation videos to the organizing committee to be uploaded to AASEC official Instagram account (@aasec\_). The presentations proceeded based on each scope determined by the organizing committee as follows: 01 June 2020: Chemical Engineering, 02 – 08 June 2020: Civil Engineering, 15-19 June 2020: Computer and Communication Engineering, 20 June – 01 July 2020: Computer Science, 02 – 07 July 2020: Electrical Engineering, 08 – 10 July 2020: Electronics Engineering, 11 – 20 July 2020: Environmental Engineering, 21-24 July 2020: Information Engineering, 30 July – 02 August 2020: Material Engineering, 03 – 05 August 2020: Material Science and 06 -09 August 2020: Mechanical Engineering.

Despite the pandemic, AASEC 2020 still received a huge attention from the participants. There are 577 papers to be submitted to be published in the proceedings of the 5<sup>th</sup> AASEC 2020. All the papers have been through a series of rigorous review process to meet the requirements and standards of international publication.

We would like to express our deepest gratitude to the international advisory members, scientific committee, and organizing committee of AASEC 2020 for their commitment and hard work amidst this difficult time. We would also like to thank all the co-hosting institutions for their cooperation on the conference turnouts, particularly on the paper selection submitted to the committee. A huge appreciation also goes to the vice rector for research, international affairs, business, and partnership of Universitas Pendidikan Indonesia for giving constant support to the conference and other conferences held by the university. Last but not least, we thank you all presenters and participants of AASEC 2020 for the most significant contribution at the conference. We hope to see you in the 6<sup>th</sup> AASEC 2021.

The Editors,

Prof. Dr. Ade Gafar Abdullah  
Dr. Isma Widiaty  
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# Tourism attraction transformation and impacts on the physical development of Labuan Bajo city

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**Abstract.** Many studies proposed strategies and directions for the development of Labuan Bajo city into a tourism attraction center. However, they did not examine the tourism life cycle useful for its comprehensive development. This research, therefore, aims to analyze changes associated with the development of tourist attractions and its impact on land use. Data were collected through observation, from government agencies, and private institutions, with the qualitative method used for its analysis. The results showed that tourism attractions in Labuan Bajo City are developing in terms of number, type and distribution of attractions, with a significant influence in the land use patterns.

## 1. Introduction

The Indonesian Government has placed the tourism sector as a driver of national development, using various strategies. Over the last one and half decades, this industry has tremendously developed with increase in prominent, thereby, leading to the slogans "priority" and "super priority." Furthermore, numerous researches were carried out by scientists, which led to the rapid development of the industry. Approximately a century ago, people only knew rural tourism, however, the urban area are currently being utilized for recreation or leisure. Various branches of science such as the regional and city planning have adopted the phenomenon of tourism for theoretical and practical purposes.

The Labuan Bajo city is currently experiencing physical, social and economic development due to the dominant indication of tourism activities in recent years [1]. This is closely related to the strategic position of the city which attracts various visitors from Flores Island as well as other local and international communities. These attractions are associated with cultural, ethnic and entertainment activities such as flora and fauna, rivers, beaches, islands, caves, waterfalls, nature reserves, forests [2] [3]. The Cultural tourism attractions include historical and non-cultural sites such as local traditions and arts [4]. Meanwhile, the entertainment tourist attractions include cafes and restaurants [5].

The existence of tourist attraction components gradually affects the physical, social and economic aspects of the Local area. In the physical context, it is a magnet that supports lodging, shopping, restaurants, travel agents' offices and other activities. Therefore, study focuses on the types and distribution of land uses due to tourist attractions, in accordance with the relationship between its categories, types and spectrum [6-8].



## 2. Methods

This study used a qualitative design with a case study approach in order to understand deeply about the transformation of tourist attractions and the impact on land use in the city of Labuan Bajo. This is considering that the City of Labuan Bajo has the specific characteristics of the developing region because it functions as an exit / entry for tourists the main tourist attraction of the Komodo National Park. This research focuses on tourist attractions and land use in the City of Labuan Bajo. These two variables have indicators of the types of tourist attractions, the distribution of tourist attractions, the types and distribution and patterns of land use. Data collection through literature studies and field studies. Literature studies meant to obtain theoretical references and previous research, while field surveys to obtain data from agencies, especially the Regional Development Planning Agency and the Tourism Office of West Manggarai Regency were related to tourist attractions and land use developments in the City of Labuan Bajo. In addition to agency surveys, data collection is also through structured interviews with snowball sampling methods to tourism stakeholders and the development of the city of Labuan Bajo to find out information on tourist attractions and the development of urban land use. Furthermore, data processing through data reduction steps in accordance with the research variables, then conduct a qualitative review, through exposure that is logical, rational, objective and systematic.

## 3. Results and discussion

### 3.1. Labuan Bajo city tourism attraction

Labuan Bajo City recently developed its tourist attraction centers in line with the increase of visitors to the Komodo National Park and the surroundings. According to the data from the BPS of West Manggarai Regency, tourism has increased by 372 % in the last three years [9]. Similarly, this has a positive economic impact on the local own-source revenue (PAD), from 34% to 100% between 2018 and 2019 [10]. The city allows tourists and other visitors to spend their free time in its numerous attractive areas, with its cost dependent on their duration with a positive impact on their local revenue [11].

Various efforts have been developed for the diverse growth of natural, cultural, entertainment, and panorama in the city. According to the Government of West Manggarai Regency, the Labuan Bajo City is a catchment area [12] for tourists visiting Komodo National Park and its surrounding areas. Nowadays, there are diverse attraction centers such as Wae Cecu and Pede Beaches, Waringin Peak forest, Batu Cermin and Pramuka Hills. Furthermore, there are entertainment tours such as café, Bar, pub, and cultural arts scene. This diversity provides travel satisfaction, with various attractions and motivates them to spend a lot time [12]. The efforts above are in line with the provision of lodging facilities such as homestays, inns, and star hotels, which has increased in the last 10 years, by 8.4.

### 3.2. Transforming tourist attractions

In 1980, Labuan Bajo was a transit to the Komodo National Park, as well a stopover for the locals in the surrounding area. The city relies on its location and strategic position of administrative activities, and for transportation facilities that support people and traffic. The Komodo National Park utilizes the Batu Cermin attraction and the Pede Beach Street, thereby, enabling tourists to spend more time outside the Labuan Bajo city.

This is different from 2003, when the City became the capital of West Manggarai Regency which led to the development of various economic, tourism and transportation sectors such as airports, ports, offices, shopping, and supporting facilities.

The city also functions as an administrative center with the growth and development of tourist attractions at several tourist nodes. Currently, the government is revamping the natural attractions of Batu Cermin and Pede Beach, as well as Cinta, Puncak Waringin, and Pramuka Hills. Individuals and business groups build tourist attractions, cafes, restaurants, and bars on the side of Soekarno-Hatta Street. Similarly, the lodging Star facilities add to the diversity of the attractions of Labuan Bajo which increasingly varied while motivating tourist visits.

In 2010, the government and the local tourism community took the initiative to build several studios as an attraction for the field of local culture that was staged on a scheduled basis. Its location has expanded the concentration in accordance with city facilities, tourist nodes, and location attractiveness. Initially, the concentration of Pede coastal settlements shifted towards the transportation hubs of air, sea and main roads, such as around Komodo Airport and Labuan Bajo Port, as well the main side streets of the city including Soekarno Hatta, Trans Flores, Komodo, Haji Ishaka, and Bidadari. In addition to the transportation node, hilly locations were chosen to attract tourists to natural scenery and beaches.

The diversity of the tourist attractions in Labuan Bajo has a positive impact on foreign and domestic visitors that used to spend more free time outside the city. Many cafes, restaurants and bars are enjoyed by various groups including the local community for leisure and recreation. Therefore, the city is a tourist destination because it motivates visitors to spend long time [13].

### 3.3. Land use

The development of tourist attraction in Labuan Bajo changed the pattern and type of land use in the form of residential, offices, tourism services, shopping, and transportation infrastructure buildings [14].

Meanwhile, the non-built land includes rice fields, shrubs, and other agricultural areas with an overall percentage of 28.5 or 1895.26 hectares. Furthermore, bushes and vacant lands are converted into settlements, shopping areas, cafes, restaurants, bars, hotels, etc.

Approximately 14.3% built lands are used for cafes, restaurants, pubs, bars, hotels, travel agency offices, cultural centers and natural attractions areas such as Cinta Hill, the Waringin Peak, and the Batu Cermin Area. The amount of land use for tourism activities is only half of the total land developed, with high percentage per year compared to the growth of settlements and other facilities.

The increase in tourist arrivals and the high attention of the government through pro-tourism policies, tend to gradually increase the growth in this industry [15,16]. From 2010-2018, hotels, lodges and home-stays experienced an average increase of 6% per year, while the number of tourist increased by 10-15%.

The built land used is relatively spread close to city facilities such as shopping areas, air and sea transportation, on major city streets, such as Soekarno Hatta, Trans Flores, Komodo, Haji Ishaka, and Bidadari.

Furthermore, there are various characteristics associated with the changes in land utilization as a tourist attraction due to its characteristics on the intensity of tourist activities and land availability. The land close to facilities, main roads, and ports tends to change the function of settlements into tourism attractions with cafes and restaurants. Meanwhile, those around the airport, natural attractions and panoramas are associated with vacant land, bushes, and gardens.

## 4. Conclusion

In conclusion, the tourism attractions of Labuan Bajo City have experienced development due to the number, quality or type, and the concentration within the past 10 years. Therefore, tourist attractions experience transformation in accordance with the Pede coastal settlements to the air, sea, and road transportation nodes. Similarly, it affects the pattern of land use built by the city due to regional character factors, as well as the intensity of tourist activity and land availability.

## References

- [1] Luru M N 2017 *Gali! Potensi Kota Pariwisata Perkotaan Labuan Bajo* (Jogjakarta: Deepublish)
- [2] Ainul S K, Djamhur F and Hakim H L 2017 Pengaruh Atraksi Wisata dan Motivasi Wisatawan Terhadap Keputusan Berkunjung (Survei pada Pengunjung Wisata Alam Kawah Ijen) *Jurnal Administrasi Bisnis* **42**(2) 18-25
- [3] Abdulhaji S 2016 Pengaruh Atraksi, Aksesibilitas, Dan Fasilitas Terhadap Citra Objek Wisata Danau Tolire Besar di Kota Ternate *Jurnal Penelitian Humano* **7**(2) 134-148
- [4] Saputri S N, Kusumastuti and Soedwihajono 2018 Kesiapan Atraksi dalam Pengembangan Pariwisata Budaya di Koridor Slamet Riyadi, Kota Surakarta *Jurnal Region* **13**(2) 169-181
- [5] Djou J A G 2013 Pengembangan 24 Destinasi Wisata Bahari Kabupaten Ende *Jurnal Kawistra*

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- [6] Said I, Baiquni M and Kurniawan A 2015 *Dampak Perkembangan Pariwisata Terhadap Penggunaan Lahan. Tesis* (Departemen Geografi Universitas Gajah Mada)
- [7] Semara I M T, David I P and Saputra A 2015 Dampak Pengembangan Destinasi Pariwisata Terhadap Alih Fungsi Lahan Sawah Studi Kasus Di Desa Petitenget Kuta Utara Badung *Jurnal Ilmiah Hospitality Management* **6**(1) 49-58
- [8] Amalia V, Purwaningsih W, Irwan A and Akhsin W 2018 Analisis Perubahan Penggunaan Lahan Pesisir Karimunjawa *Jurnal Edu Geography* **6**(2) 144-152
- [9] Badan Pusat Statistik Kabupaten Manggarai Barat 2019 *Data Kunjungan Wisatawan*
- [10] Bere S M 2020 Komodo Terus Memikat Turis, Kunjungan Turis Asing ke Labuan Bajo Naik *Kompas.com*
- [11] World Tourism Organization 2010 *Indicators of Sustainable Development for Tourism Destinations. A Guidebook* (Madrid: WTO)
- [12] Ashworth G and Page S J 2011 Urban tourism research: Recent progress and current paradoxes *Tourism Management* **32** 1–15
- [13] W Setyaningsih, T Y Iswati, S Yuliani, W Nuryanti, B Prayitno and Sarwadi A 2015 Urban Tourism Development Through Low Impact Development (Lid) Towards Green-Tourism *Jurnal Region* **6**(1) 19-27
- [14] Afandi M 2015 Kajian Pengaruh Keberadaan Kawasan Wisata Sangiran Terhadap Aspek Fisik, Aspek Ekonomi, Dan Aspek Sosial Masyarakat *Jurnal Teknik PWK* **4**(2) 282-292
- [15] Hironimusa Y S, Rijantab R and Iskandarc D A 2019 Faktor-faktor yang Mempengaruhi Peran Aktivitas Pariwisata di Taman Nasional Komodo terhadap Pertumbuhan Ekonomi Wilayah Kabupaten Manggarai Barat *Jurnal Region Universitas UNS* **14**(2) 141-153
- [16] Holik A 2016 Relationship of Economic Growth with Tourism Sector *Journal of Economics and Policy* **9**(1) 16-33