

# JPIS (Jurnal Pendidikan Ilmu Sosial)

Journal homepage: <u>https://ejournal.upi.edu/index.php/jpis</u>



# Wildlife Tourism Business: Conservation or Exploitation?

Agim Abdul Hakim<sup>1,2\*</sup>, Taufik Abdullah<sup>2</sup>

<sup>1</sup>Prince of Songkla University, Phuket, Thailand <sup>2</sup>Universitas Pendidikan Indonesia, Bandung, Indonesia Correspondence: E-mail: <u>s6630100030@phuket.psu.ac.th</u>

# ABSTRACT

Wildlife Tourism is never loose from conservation and exploitation's controversy. Many people debate this matter on social media or formal forums. The research was conducted with the aim of solving the contradiction problem relating to Wildlife Tourism business. The approach in this study uses a qualitative literature review method. The results showed that: (1) there is no bold action and strong regulation from the government to follow up on the animal exploitation; (2) lack of awareness from business actors and general public regarding animal exploitation, which makes the assumption that the practice is normal; (3) there needs to be synergy among components in the Wildlife Tourism industry to address issues related to exploitation actions that threaten animal welfare. In conclusion, the concept of sustainable tourism can be the way for Wildlife Tourism practices to be exempt from exploitation actions.

# ARTICLE INFO

Article History: Submitted/Received 10 Jan 2024 First Revised 21 Feb 2024 Accepted 17 Mei 2024 First Available online 18 Jun 2024 Publication Date 30 Jun 2024

#### Keyword:

Contradictions, Wildlife Tourism, Conservation, Animal Exploitation, Sustainable Tourism.

© 2024 Fakultas Pendidikan Ilmu Sosial

#### 1. INTRODUCTION

As a megadiverse country abundant with many wildlife species, Indonesia is the country with the second highest level of biodiversity in the world (Harnowo, D., et al., 2021; Wantu, F. M., et al, 2021). This fact is a strong reason for Indonesia to maintain and care for this valuable asset from the threat of extinction. There are several efforts that can be a way to overcome this. *Ex-situ* and *in-situ* wildlife conservation are two things that can be pursued. (Braverman 2014) defines the term *in-situ* as wildlife conservation in the wild, namely in its natural habitat. While conservation that tends to be formed artificially or conservation in a cage (captive conservation) and outside the natural environment is referred to as *ex-situ* conservation. Although the two types of conservation efforts above have a form of differentiation, both in terms of place and handling strategies, the main goal of both remains the same, which is focused on regular maintenance and protection (Williams, D. R., et al. 2020; Castillo-Huitrón, N. M., et al. 2020).

The abundance of biodiversity in Indonesia is certainly a vast opportunity for poachers to carry out their actions illegally (Gunawan, H., et al. 2022). Because it is not uncommon for the existence of poaching to be a cause of conflict between humans and wildlife in an *in-situ* capacity, the role of *ex-situ* conservation institutions in Indonesia becomes increasingly necessary. The *ex-situ* conservation institution itself has the main function which is to strive to maintain and carry out captive breeding of various types of wild animals and create a new environment that becomes a means of preservation and protection (Mestanza-Ramón, C., et al. 2020; Rose, P. 2021). Then furthermore, it can be used for the benefit of natural recreation facilities and the development of science. So that the basis of learning and wildlife research no longer requires researchers to come directly to the wild.

In Indonesia, *ex-situ* conservation institutions are divided into two types, namely conservation institutions for public interest and also conservation institutions for special interests. Based on the Regulation of the Minister of Environment and Forestry Number P.22/MENLHK/SETJEN/KUM.1/5/2019 concerning Conservation Institutions (2019), states that special conservation institutions are institutions engaged in conservation whose management functions are focused on efforts to save or rehabilitate animals. While general conservation institutions for the public interest. Compared to specialized conservation institutions that are focused on conservation functions, conservation institutions for public interest tend to be controversial targets in many circles because the practices they carry out are within the scope of tourism (Sarinastiti & Wicaksono, 2021). Because if you talk in the realm of tourism, *ex-situ* conservation will certainly be very closely related to Wildlife Tourism.

In line with this background, the research in this article has three problem formulations. First, how can contradictions arise between the function of conservation institutions and the problem of exploitation in Wildlife Tourism activities? Second, what efforts might be made so that wildlife tourism is free from exploitative practices? Third, what is the role of the community, animal activists, government and business actors in facing various challenges in managing the Wildlife Tourism business with the concept of Sustainable Tourism? In accordance with the problem formulation, this study contains three research objectives. First, describe the findings of contradictions in the wildlife tourism business. Second, providing solutions related to Wildlife Tourism activities to avoid exploitation practices. Third, research and analyse ideas and roles that may be key to facing challenges in Sustainable Tourism activities in the future.

#### **2. LITERATURE REVIEW**

#### 2.1. Wildlife Tourism

As we know, the world of tourism is not only always about Nature Based Tourism. Today, not a few alternative tourism activities are experiencing development in various parts of the world. Alternative Tourism includes Sport Tourism, Community Based Tourism, Cultural and Heritage Tourism, Health Tourism and also Wildlife Tourism (Brooks, C., et al. 2023; Sati, V. P., & Rawat, M. S. 2024). Discussing issues related to Wildlife Tourism, defines it as tourism activities that bring together humans with non-domesticated (non-humans) or wild animals that can occur in the natural environment of animals or in captivity (Simpson, G. D., et al. 2020; Dou, X., & Day, J. 2020; Fernández-Llamazares, Á., et al., 2020). In line with him, define that Wildlife Tourism is a tourism activity carried out to see or interact with the wild, including adventure tourism and/or ecotourism.

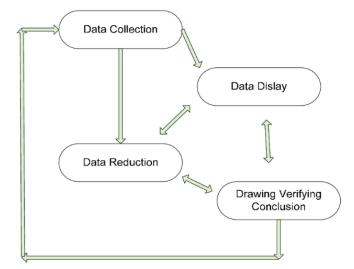
Wildlife Tourism has been heralded as a way to gain sustainable economic benefits while supporting wildlife conservation and local communities. But in the end, the tourism business is always synonymous with commercialization goals that are oriented towards economic interests and benefits for business people or companies (Sarinastiti & Wicaksono, 2021). Among other conservation institutions for public interest such as zoological museums, botanical gardens, herbariums and animal parks, zoos are one of the Wildlife Tourism that often become a medium of pros and cons between animal activists, government and business managers. Because behind the purpose of institutions that strive to carry out animal conservation and educational practices to the wider community, Wildlife Tourism is often associated with the issue of exploitation in its business activities. This leads to the emergence of contradictory questions related to the wildlife tourism business.

Tourist destinations that carry the concept of Wildlife Tourism and its relation to animal welfare issues are found in several literature studies (Simpson, G. D., et al. 2020; Dou, X., & Day, J. 2020; Duminduhewa, C., et al. 2020). One of the articles referenced from this analysis is an article entitled "Commercialization and Tourism: Challenges in Sustainable Wildlife Animal Conservation Based Theme Park Management in Central Java Area" written by (Sarinastiti & Wicaksono, 2021). In it there are several aspects that become the results and focus of the analysis, namely knowledge and attitudes. Furthermore, the study is focused on challenges and strategies that can be applied in Wildlife Tourism based on the problems being faced. Other literature related to animal conservation with the concept of Wildlife Tourism analyzed can be seen in the following five literatures. First, "Wildlife Tourism", Second, "Wildlife Tourism Impacts, Management and Planning" by Higginbotoom (2004), Third, "Conservation without Nature: The Trouble with In-Situ versus Ex-Situ Conservation" by (Braverman, 2014), Fourth, "Ex-Situ Wildlife Conservation in Taman Satwa Lembah Hijau Bandar Lampung" by (Alfalasifa & Dewi 2019), Fifth, "Wildlife Tourism". The studies on Wildlife Tourism above are reasons to conduct research related to problems and challenges in Wildlife Tourism activities in the world of tourism, especially tourism in Indonesia.

## 3. METHOD

This study is research that uses a qualitative approach. Qualitative research is considered appropriate because researchers think that the problems studied are quite complex and dynamic so that the data obtained from research results through various literature needs to be explored more deeply and condensed again. The questions that arise during the research develop along with the progress of research, analysis and data collection carried out together. This research was conducted on several literature related to *ex-situ* conservation institutions,

especially Wildlife Tourism. The purpose of literature review is to obtain various perspectives from several sources related to the problem being studied. Furthermore, the data obtained from the qualitative research was analyzed before, during and after the completion of the research. There are several stages of analysis that researchers do, including data reduction, data display and conclusion (Miles & Huberman, 1992).



Source: Miles and Huberman, 1992 Figure 1. Stages in Analyzing Qualitative Data

Based on the analysis in Figure 1, it can be seen that researchers try to sort and simplify data in the field at the data reduction stage. Because the amount of data obtained during the study is not small, reducing the data needs to be done during the data analysis. In the second stage, namely the presentation of data (data display), researchers collect and compile data in an organized, systematic and easy to understand manner. Through this presentation, data that have been arranged in a pattern of linkage relationships will make it easier for researchers to draw conclusions. Third, drawing conclusions and verification refers to the results of reduction of data that have been collected and remains aligned with the objectives of the analysis to be achieved. The purpose of this stage is to find the meaning of data and patterns of connectedness so that researchers can draw conclusions that can be the answer to the problem at hand. However, the conclusion of this qualitative research is in the form of descriptive findings that may still need to be developed more deeply.

# 4. RESULTS AND DISCUSSION

# 4.1. Contradiction between Conservation and Exploitation

According to the Ministry of Environment and Forestry (2012), conservation institutions have the main function in saving and/or breeding plants and animals while maintaining the purity of their species. In addition to its main function, conservation institutions also have a function as a means of healthy recreation and a place for the development of science. The zoo as an *ex-situ* conservation institution attracts many tourists coming to visit. Apart from being a place of conservation, the zoo also offers a travel experience with educational and recreational purposes with wildlife. (Suryadharma, 2019) stated that in addition to seeing wildlife, visiting a zoo can also provide other benefits such as honing visual, auditory, and kinetic skills, sharpening empathy, increasing knowledge, practicing discipline to invite children to explore.

#### 95 | Jurnal Pendidikan Ilmu Sosial, Volume 33 Issue 1, June 2024 Hal 91-100

There is much to learn in Wildlife Tourism activities. Starting from educational purposes, tourists can learn to know various Latin names of wildlife, know how to live, longevity, habitat, race, type of food, and so on. Even in zoos, tourists are usually invited to feed wildlife at close range, enjoy dolphin performances that show their intelligence in playing ball, swimming with dolphins, riding elephants, or taking selfies with monkeys who are smart at posing. From the various things above, tourists will be invited to have fun with their activities while in the zoo. This is in line with the function of *ex-situ* conservation institutions as recreational facilities.

Behind it all, the pleasure when meeting wildlife that zoo visitors feel, turns out to be inversely proportional to the state of the wildlife itself. An environmental watchdog group (2017) that conducted the search, said that if not a few of the zoos in Indonesia are places that are not suitable for animals. One example is the incident that happened to Bandung Zoo in 2016. At that time, an elephant named Yani was declared dead due to disease. The West Java Natural Resources Conservation Agency (BKSDA) has suspected that the elephant was not given proper treatment and was abandoned when sick because the management itself did not have a veterinarian at all. Although according to the plan they would hire a veterinarian from outside, in reality the elephant died in May 2016.

Marison, Head of Investigation of the Animal Care Group (2017) gave another example in the sun bear case that has been widely discussed on social media. In their findings, Marison and the team said that the bear was fed bread, which is not the real type of food for a bear. Then regarding the cage where the bear lives daily, it is stated that the cage has no trees at all and is made with a tiled floor. In fact, sun bears have a habit of looking for insects on the ground and climbing trees. It can be said that the treatment has a high probability of making the bear stressed and confused.

Animal exploitation for business purposes is not something new. Whether consciously or not, Indonesia has done it publicly. Animal violence is all around us. Because it is considered a common thing, most people do not realize that actions involving animals often contain violence in practice. Some events are even wrapped in regional traditions such as betta fish fighting, "Sabung Ayam", or "Topeng Monyet". While others are packaged as attractions, entertainment, and tours for humans, such as elephant riding, animal circuses, and also zoos (Aditya, 2018).

Guciano, founder of the Indonesia Animal Welfare Society (2018) thinks that in zoos, wildlife seems to be allowed to live uncomfortably. Because in their original place, they can freely play on the ground, swim in the open sea and fly high in the vast sky. But in zoos, many animals have to be housed in cages like imprisoned in bars, with concrete walls and tiled floors. This can result in the risk of stress, crazy and health problems. Not to mention, some of them are solitary animals, so many and many visitors add to the possibility of increasing the risk of stress in animals. As a result of this, we can see the stress response of animals from strange behaviours, such as shaking the head or walking back and forth in close quarters (1-2 meters).

Actions that do not care about animal welfare are not only about the presence or absence of food, but also related to the freedom of the animals themselves (Alonso, M. E., 2020; Fernandes, J. N., et al., 2021). Some animals such as eagles and elephants were found locked or chained in a place that was not large enough, with the reason that it could be used as a photo object by visitors or tourists. Because of this, it can be said that not a few zoos have deviated from their main function as animal conservation. Wildlife parks such as zoos should be shaped to resemble their natural habitats such as Singapore Zoo, as ilustrated in Figure 2 below. Thus, the natural properties of wildlife do not change and eventually disappear.



Source: Outwaradon.com, 2021 Figure 2. One of the Cages at Singapore Zoo

Moving on to another case that happened to an elephant named Pai Lin in Thailand. Recently, the elephant reportedly suffered permanent damage to the back due to continuously transporting tourists for approximately 25 years. Pai Lin must bring a type of seat called *howdah* that can be occupied by up to 6 people in a short period of time. This resulted in a very crucial impact on his physical health condition as shown in Figure 3. The elephant was reportedly disabled and received numerous injuries due to decades of stress during its lifetime.



Source: Kompas, 2023 Figure 3. Pai Lin Condition

From the results of reviews that have been conducted, the researchers found that exploitation practices are not uncommon in conservation institutions such as zoos. Animal welfare will obviously be compromised if one of its principles is not met. In fact, the main purpose of *ex-situ* conservation institutions is to care for and protect wildlife from wrong actions such as exploitation. But in reality, there are many cases where animal welfare is threatened within the conservation institutions themselves. This fact is certainly a whiplash for the existence of wild animal-based tourism in Indonesia. Based on the facts mentioned above, the researchers found that there is a contradiction between the main function of conservation institutions such as zoos as guardians and caretakers of wildlife and exploitative practices that occur in the field. This condition is ultimately a challenge for researchers to find a solution. Then how do we fix it?

## 4.2. Freeing Wildlife Tourism from Exploitation

From various cases that have occurred, researchers try to conclude several causes of exploitation practices can occur. First, there has been no firm action from the government

#### 97 | Jurnal Pendidikan Ilmu Sosial, Volume 33 Issue 1, June 2024 Hal 91-100

regarding violations. Second, there is no regulation strong enough to follow up and have a deterrent effect on law violators. Third, there is no strict supervision of wildlife parks, including with licensing and standardization issues. Fourth, business actors prioritize commercial interests and benefits too much so that they forget about the welfare of wildlife. Fifth, there is no awareness in every community regarding the wrong and bad acts of exploitation (which are considered normal) that occur in conservation institutions such as zoos.

According to researchers, cases of wildlife exploitation can be stopped as long as the points mentioned above can be overcome effectively and efficiently. The government needs to act decisively and indiscriminately, cracking down on all violators together with strong, fair and appropriate regulations. In addition, strict supervision for business actors also needs to be carried out, both in terms of licensing and implementation. Business actors as business managers must also be aware of the importance of animal welfare. They need to pay attention to the type of good food and design a dwelling as similar to their natural habitat. Protection, safeguarding and care measures need to be taken so that exploitative practices no longer occur another day. More than that, people also need to be aware and be able to distinguish between good actions and bad actions against animals. So that they can be literate regarding wildlife welfare issues in the world of tourism.

Talking about animal welfare, there are several principles of freedom in animal welfare (2012) that must be met. First, Freedom from hunger and thirst means animals must be given easy access to feed and water whenever they want. The type of food must also be in accordance with the natural feed that animals usually eat while in their natural habitat. Second, Freedom from discomfort which means the treatment of animals must be considered properly, especially in terms of the environment. Third, Freedom from pain, injury and diseases which means avoiding experiments or research that hurts animals. Fourth, Freedom from fear and distress means zoo officials should avoid procedures or actions that can cause fear and stress to animals. Fifth, Freedom to express natural behavior which can be pursued by providing a large enough cage with good quality and in accordance with its natural habitat. By fulfilling these five principles, the welfare of wildlife in the zoo will be guaranteed.

## 4.3. Managing Wildlife Tourism Business with Sustainable Concept

Issues related to exploitation practices in the Wildlife Tourism business may be a considerable challenge for the world of animal-based tourism. Therefore, the researchers are trying to think of ways so that these actions do not occur and repeat. The concept of Sustainable Tourism may be a concern that can be considered. Where the practice not only focuses on animal welfare, but also environmental sustainability, social and economic sustainability and also consumer satisfaction.

The World Tourism Organization (UNWTO) defines Sustainable Tourism as tourism activities that fully address current and future social, economic and environmental impacts, addressing the needs of visitors, industry and local communities (2005). In this case, the concept of tourism is in line with the statement of the Minister of Tourism and Creative Economy of Indonesia, Sandiaga Uno (2021) that in an effort to develop sustainable tourism, there are several pillars that must be fulfilled, including socio-culture sustainability, sustainable economy, sustainable business management (tourism business), and environmental aspects.

Business managers must develop a good strategy so that the concept of Sustainable Tourism can be implemented. Considering the challenges that come may not be once or twice, let alone repeated. So, this tourism concept must be free from exploitation practices

### Hakim., et al. Wildlife Tourism Business: Conservation or Exploitation? | 98

that only concern with benefits. There needs to be awareness and appropriate action so that the environment can be maintained and can be preserved. As a result, when these efforts are made, we can measure consumer satisfaction later. In maintaining and implementing the concept of sustainable tourism, it is clear that there needs to be a synergy movement from various components, be it the community, animal activists, the government or business actors themselves. All of these components have an important role in maintaining the implementation of this tourism. They need to be aware and sensitive to their respective roles and duties about how crucial this tourism concept is for industrial sustainability, environmental sustainability, animal welfare, economic, social and cultural sustainability, and consumer satisfaction. Therefore, the synergy of these various components will have a major impact on the implementation of Sustainable Wildlife Tourism.

## **5. CONCLUSION**

Exploitation practices in conservation institutions occur due to several interconnected problems. There needs to be effective actions and strategies to solve these problems. The key to this problem is inseparable from the role of various components such as society, animal activists, government and business actors. They need to meet five animal welfare principles so that wildlife conservation can be maintained. The concept of Sustainable Wildlife Tourism can be one way to decide on wildlife exploitation. Because in addition to paying attention to animal welfare, the concept also pays attention to environmental sustainability, business sustainability, economic sustainability, socio-cultural sustainability and also consumer satisfaction.

# 6. REFERENCES

- Alfalasifa, N., & Dewi, B. (2019). Konservasi Satwa Liar secara Ex-Situ di Taman Satwa Lembah
  Hijau Bandar Lampung. Jurnal Syiva Lestari, 7, 71–81.
  https://jurnal.fp.unila.ac.id/index.php/JHT/article/viewFile/2950/2382
- Alonso, M. E., González-Montaña, J. R., & Lomillos, J. M. (2020). Consumers' concerns and perceptions of farm animal welfare. Animals, 10(3), 385.
- Braverman, I. (2014). Conservation without nature: the trouble with in situ versus ex situ conservation. *Geoforum*, *51*, 47–57. https://doi.org/10.1016/J.GEOFORUM.2013.09.018
- Brooks, C., Waterton, E., Saul, H., & Renzaho, A. (2023). Exploring the relationships between heritage tourism, sustainable community development and host communities' health and wellbeing: A systematic review. PLoS One, 18(3), e0282319.
- Castillo-Huitrón, N. M., Naranjo, E. J., Santos-Fita, D., & Estrada-Lugo, E. (2020). The importance of human emotions for wildlife conservation. Frontiers in Psychology, 11, 1277.
- Duminduhewa, C., Wimalarathana, R., & Kaldeen, M. (2020). Demand for Responsible Tourism in Sri Lanka: A Case Study of Yala Wildlife Destination. Journal on Tourism & Sustainability, 4(1), 27-40.

- 99 | Jurnal Pendidikan Ilmu Sosial, Volume 33 Issue 1, June 2024 Hal 91-100
- Dou, X., & Day, J. (2020). Human-wildlife interactions for tourism: A systematic review. Journal of Hospitality and Tourism Insights, 3(5), 529-547.
- Fernández-Llamazares, Á., Fraixedas, S., Brias-Guinart, A., & Terraube, J. (2020). Principles for including conservation messaging in wildlife-based tourism. People and Nature, 2(3), 596-607.
- Fernandes, J. N., Hemsworth, P. H., Coleman, G. J., & Tilbrook, A. J. (2021). Costs and benefits of improving farm animal welfare. Agriculture, 11(2), 104.
- Gunawan, H., Yeny, I., Karlina, E., Suharti, S., Murniati, Subarudi, ... & Nurlia, A. (2022). Integrating social forestry and biodiversity conservation in Indonesia. Forests, 13(12), 2152.
- Harnowo, D., Indriani, F. C., Susanto, G. W. A., Prayogo, Y., & Mejaya, I. M. J. (2021, November). Biodiversity conservation through sustainable agriculture, its relevance to climate change: a review on Indonesia situation. In IOP Conference Series: Earth and Environmental Science (Vol. 911, No. 1, p. 012066). IOP Publishing.
- Kementrian Lingkungan Hidup dan Kehutanan. (2019). Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.22/MENLHK/SETJEN/KUM.1/5/2019 tentang Lembaga Konservasi. In KLHK.
- Kemenparekraf RI. (2021, November 12). *Destinasi Wisata Berbasis Sustainable Tourism di Indonesia*. https://kemenparekraf.go.id/ragam-pariwisata/Destinasi-Wisata-Berbasis-Sustainable-Tourism-di-Indonesia
- Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.22/MENLHK/SETJEN/KUM.1/5/2019 tentang Lembaga Konservasi, Pub. L. No. 22 (2019). https://jdih.maritim.go.id/cfind/source/files/permenlhk/p\_22\_2019\_lembaga\_konservasi\_menlhk\_09162019152331.pdf
- Mestanza-Ramón, C., Henkanaththegedara, S. M., Vásconez Duchicela, P., Vargas Tierras, Y., Sánchez Capa, M., Constante Mejía, D., & Mestanza Ramón, P. (2020). In-situ and ex-situ biodiversity conservation in ecuador: A review of policies, actions and challenges. Diversity, 12(8), 315.
- Miles, M., & Huberman. (1992). Analisis Data Kualitatif : Buku Sumber tentang Metode-Metode Baru. Universitas Indonesia.
- Prinsip-Prinsip Kesejahteraan Hewan (Animal Welfare) di dalam Penelitian Biomedis Sekolah Kedokteran Hewan dan Biomedis IPB University. (2012, June 28). IPB University. https://skhb.ipb.ac.id/prinsip-prinsip-kesejahteraan-hewan-animal-welfare-di-dalampenelitian-biomedis/
- Putri Aditya. (2018, April 24). Menilik Eksploitasi Satwa di Sekitar Kita. *Tirto.Id*. https://tirto.id/menilik-eksploitasi-satwa-di-sekitar-kita-cJiK
- Rose, P. (2021). Evidence for aviculture: Identifying research needs to advance the role of ex situ bird populations in conservation initiatives and collection planning. Birds, 2(1), 77-95.

- Sati, V. P., & Rawat, M. S. (2024). Types, Potential, and Implications of Tourism in the Central Himalaya: A Review. Journal of Academic Tourism Studies, 5(1), 117-128.
- Sarinastiti, E. N., & Wicaksono, M. S. (2021). Commercialization and tourism: Challenges in sustainable wildlife animal conservation-based Theme Park management in Central Java area. Jurnal Pengelolaan Sumberdaya Alam Dan Lingkungan (Journal of Natural Resources and Environmental Management), 11(1), 69–82. https://doi.org/10.29244/jpsl.11.1.69-82
- Simpson, G. D., Patroni, J., Teo, A. C., Chan, J. K., & Newsome, D. (2020). Importanceperformance analysis to inform visitor management at marine wildlife tourism destinations. Journal of Tourism Futures, 6(2), 165-180.
- UNWTO. (2005). *Sustainable development | UNWTO*. United Nation of World Tourism Organization. https://www.unwto.org/sustainable-development
- Wantu, F. M., Mahdi, I., Purba, A. S., Haris, I., & Amal, B. K. (2021). The law on plant protection, an effort to save Indonesia's earth: a review of international publications. International Journal of Modern Agriculture, 10(1), 867-879.
- Williams, D. R., Balmford, A., & Wilcove, D. S. (2020). The past and future role of conservation science in saving biodiversity. Conservation Letters, 13(4), e12720.