

# ***How Wildlife Protection Affects the Economy: A Case Study on Panda Conservation in Chengdu, China and Safaris in Africa***

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**Abstract:** This article explores the interplay between wildlife protection and economic development through a case study mainly on panda conservation in Chengdu (Sichuan), China briefly compared with wildlife safaris in Kenya, Africa. The conservation of wildlife is essential for maintaining biodiversity and natural ecosystems, with implications for human well-being and various economic sectors. While the conflict between wildlife preservation and economic progress is often seen as inevitable, recent research highlights the economic value of wildlife and its potential to drive sustainable development. This study investigates how the conservation of giant pandas in Chengdu has led to the emergence of a vibrant ‘Panda Economy’, where the iconic species contributes significantly to tourism, local industries, and employment. Similarly, the paper delves into how Kenya’s emphasis on wildlife management and safaris has bolstered its tourism sector, making it a vital contributor to the national economy. By examining these case studies, the paper aims to provide insights into successful strategies for balancing economic growth with wildlife protection, emphasizing the symbiotic relationship between conservation efforts and economic benefits. This paper also explores potential problems and solutions for current ecotourism industries in Sichuan and Kenya through a literature review.

**Keywords:** wildlife conservation, sustainable development, panda economy, safari tours

## **1. Introduction**

It has been a contentious issue in wildlife conservation for decades [1]. Wildlife conservation is generally aimed at conserving species and habitats for wildlife to maintain a healthy population and restoring, protecting, improving natural ecosystems. In this paper, ‘wildlife’ is broadly considered as all biotic resources but mainly wild animals. Protecting wildlife is crucial to both the ecosystem and the well-being of humans. Mother Nature demands that different species maintain their connections through varied food webs. It signifies that one or more other species may be affected in the future if a certain species goes extinct or becomes extinct. A proactive measure to keep safe before any unforeseen environmental problems is to conserve animals. Apart from the vision of biodiversity, wildlife is also an essential part of much current research. According to the Sewee Association, more than half of the medications used by Americans today are derived from plants, animals, and microbiological organisms [2]. Failing to conserve wildlife may lead to a loss of knowledge sources

for medical science experts [2]. Wildlife conservation also has a great influence on many other fields such as agriculture, tourism, and so on. By conserving wildlife, human beings are ensuring that future generations can enjoy the fantastic natural world.

Nowadays, the conservation of wild animals is an urgent need as many species are endangered and are now disappearing. However, on the one hand, people believe that wildlife protection measures, for example, setting up sanctuaries is too costly as it often takes up considerable land and requires a lot of resources such as labour to run. On the other hand, many of the reasons that put wild animals under threat are to some extent seen as ‘necessary’ for economic development, or, of remarkably high profits, for example, poaching. Other essential economic activities such as lumbering and reclaiming destroy the natural habitats of wild animals. The decline in wildlife population is often a result of the deterioration of the environment. Therefore, the conflict between wildlife protection and economic development is also part of the conflict between environmental conservation and economic development. Fortunately, such conflicts are not inevitable according to some research. The non-consumptive value of wildlife is now being uncovered. Wildlife is a main source of tourism revenue for many countries, especially for most of the Small Island Developing States (SIDS) and developing countries [3]. Enormous economic benefits from wildlife have attracted the attention of policymakers. Data shows that shark diving alone brings in \$42.2 million in revenue per annum in Fiji, \$18 million in Palau, and \$38.6 million in the Maldives [3]; birdwatchers contribute \$32 billion to the US economy per year, and safaris in Kenya create nearly \$1 billion revenue yearly [3]. It has been proven that protecting wildlife can create great economic benefits for local communities.

Many researchers have outlined the economic incentives of wildlife conservation, but few have deeply and concretely analysed real cases of utilising wildlife and a healthy ecosystem to generate benefits. This paper aims to explore feasible ways of achieving a balance between economic development and wildlife protection. It would be discussing some typical cases in which the two objectives are both achieved. Potential and practical problems will also be analysed, and suggestions will be given based on real situations.

## **2. Giant Pandas in Chengdu, China**

### **2.1. Background Information**

Giant pandas were once widely distributed across China’s major river basins, including areas from Zhoukoudian near Beijing to Guangdong and the Southeast Asian regions. Today, they are primarily found in the Qinling Mountains, Min Mountains, Qionglai Mountains, Liangshan Mountains, Daxiangling Mountains, and Xiaoxiangling Mountains. The Fourth National Survey on Giant Panda Wild Populations reports that only 1,864 wild giant pandas remain, with approximately 75% of them located in Sichuan province. These pandas inhabit 49 counties in Gansu, Shaanxi, and Sichuan, taking up an area of 2.58 million hectares. The establishment of 67 giant panda nature reserves nationwide has expanded panda conservation efforts. Notably, there are four institutions capable of maintaining a captive population of more than 10 pandas, along with over 40 captive conservation institutions worldwide.

Chengdu is the only large city in the world that has resources of wild giant pandas and captive giant pandas at the same time. Over the past 40 years, the population of wild giant pandas has increased to 1,864 from 1,114. The giant panda has been downgraded from endangered species to vulnerable species under the efforts of conservationists, protectors, and the whole society [4]. The successful conservation and an increasing panda population give Chengdu an opportunity to rely on the giant panda’s super IP and ecological tourism resources to establish four cultural and tourism industry functional zones: the Giant Panda International Tourism Resort, the Li Bing Cultural and Creative Tourism Industry Functional Zone, the Xiling Snow Mountain Sports and Health Care

Industry Functional Zone, and the Longmen Mountain Jianjiang River Valley Ecological Tourism Zone. It innovates the ‘Panda + Tourism’ and ‘Panda + Cultural Creativity’ models, creating ecological tourism attractions such as the Xiling Snow Mountain Scenic Area, the Hongkou Scenic Area, the Taiyangwan Scenic Area, and the Huilong Gou Scenic Area. Connecting these scenic areas, forms a tourism loop, promoting regional economic development and improving the local residents’ income.

Panda-inspired products, such as toys, clothing, and souvenirs, have become highly sought after, both domestically and internationally. This flourishing industry has not only generated substantial revenue but has also nurtured artistic talent and contributed to the city’s cultural landscape. The growth of panda-related industries has had a direct impact on employment and income generation in Chengdu. The demand for skilled workers in various sectors, including wildlife conservation, research, tourism, hospitality, and creative industries, has created a range of job opportunities. Locals have benefited from increased employment prospects, higher wages, and improved standards of living. Additionally, the emergence of businesses, such as local restaurants, guesthouses, and handicraft stores, has provided entrepreneurial opportunities for residents, leading to the development of a vibrant local economy.

## 2.2. Internet Marketing

Panda Bases in Chengdu Have Registered Their Own Accounts on Almost All the Major Social Media Platforms and Have Been Promoting Panda for Years. The Adorable Image and Irresistibly Cuteness of Pandas Have Attracted Many Tourists to Visit the Bases. On RED (a Chinese Social Platform), Nearly Every Post of Hua Hua Either by the Base or Tourists Receives Over 10 Thousand Likes. The Most Popular Short Video of Hua Hua Got 2.118 Million Likes on TikTok. The Ticket Sales of Chengdu Research Base of Giant Panda Breeding Rank First Among the Entire Province in 2023. Tourists Visiting Chengdu to See the Giant Panda Hua Hua Spend an Average of Over 1000 Yuan Per Person, Which Includes Airfare, Hotel Accommodation, and Entrance Tickets. It Is Estimated That the Annual Revenue from Ticket Sales at the Base Will Experience a Surge of 9 Times<sup>1</sup>. According to the Data from China’s Main Travel Platforms, in the First Quarter, Hotel Bookings Related to Pandas Increased by 3.2 Times Compared to the Previous Year. Among These Bookings, Half Were for Hotels Located Around the Giant Panda Base, While the Other Half Were for Panda-Themed Hotels. Multiple Travel Platforms Have Reported That Homestay Bookings in Chengdu Have Doubled Compared to the Same Period Last Year, and the Average Length of Stay Has Increased from 1.3 Days to 1.8<sup>2</sup> Days.

## 2.3. Peripheral Products and Creative Industry

The economic benefits generated by pandas are also reflected in the cultural and creative products created based on them as prototypes. During the ‘International Women’s Day’ period realistic panda toys were particularly popular. One store’s realistic panda toy named Hehua and Menglan achieved sales of over one million yuan and were in high demand. On multiple e-commerce platforms that currently, the prices of realistic panda plush toys vary greatly, ranging from tens of yuan to thousands of yuan. Compared to traditional panda-shaped stuffed toys priced at only a few tens of yuan, realistic panda plush toys are priced at over a thousand yuan, yet their sales have been consistently good. Interestingly, some businesses price their lifelike panda plush toys based on age. For instance, a certain brand of lifelike panda plush toy prices the 3-month-old panda at 1,699 yuan and the 5-month-old panda at 1,899 yuan. Even so, the demand still exceeds the supply. Consumers usually tend to

<sup>1</sup> Data source: <https://news.bjd.com.cn/2023/03/14/10364841.shtml>

<sup>2</sup> Data source: CCTV news

lean towards emotional value when making choices about products. The giant panda, as a Chinese ‘national treasure’, has a special emotional connection with Chinese consumers. Additionally, the cute and adorable image of the giant panda also makes products highly favoured by consumers.

#### 2.4. Current Problems and Solutions

While the growth of the ‘Panda Economy’ has surged and is now a major contributor to Chengdu’s GDP, challenges persist in the conservation process. Overall, farmers’ awareness of environmental preservation and wildlife conservation has improved a lot in Chengdu, however some do not wish to compromise economic prosperity to safeguard wildlife [4]. In theory, achieving maximal conservation support from various stakeholders within and outside protected areas hinges on ensuring that stakeholders receive benefits proportional to the opportunity costs they bear [5]. However, the benefits and costs associated with pandas’ impact on ecotourism exhibit an uneven distribution. An examination identified two distinct forms of economic imbalances among significant stakeholder groups [5], using Wolong Nature Reserve for Giant Pandas as a case study, which stands as one of Sichuan’s largest panda reserves.

Initially, there is a significant discrepancy between various types of stakeholders and the local rural residents. Although rural communities shoulder the bulk of conservation expenses, the predominant economic gains, including investments, employment, and merchandise, across three vital ecotourism sectors, comprising infrastructure development, lodging or catering, and souvenir sales, flow to other stakeholders. Secondly, the findings reveal that the majority of rural households benefiting from tourism are situated near the primary roads. In this case, it has a smaller impact on panda habitat compared to households located farther away from the main roads and nearer to the natural habitats. Such disparity in distribution might deter protection support from these latter households, which substantially contribute to the degradation of panda habitats.

Before the year 2000, scant progress had been achieved in tourism upgrading and ecotourism then was conducted on a relatively modest scale. Numerous visitors merely passed through, staying no longer than a single night in the region. Since the formal initiation of ecotourism development in 2000, there has been extensive infrastructural expansion in the area. The majority of investments were infused by external operators, a considerable portion of the workforce was imported from external sources, and most resources were procured from cities beyond. The advantages reaped by rural communities underwent a significant decline. Even those acquired were limited to a markedly smaller subset of local families. In terms of employment, most rural residents found themselves engaged in low-skilled and temporary roles within small enterprises, characterized by low investment levels, entailing lower wages. Construction projects, on average, generated the most occupation opportunities (44.7 jobs per project), considerably surpassing hotels or restaurants (4.7 jobs per establishment) and souvenir shops (typically 1 job per shop). However, nearly 80% of infrastructure construction activities were carried out by external entities. Only 21 out of 126 higher-paying positions were occupied by local farmers.

A notable obstacle to investment and employment among rural households may stem from limited local involvement in the formulation and implementation of ecotourism policies. The development of ecotourism followed a conventional Chinese top-down approach, thus rarely granting farmers access to comprehensive and timely information required for making informed decisions. For instance, decisions concerning the conversion of homes into family-run hotels/restaurants, determining suitable investments in souvenir shops and adapting crop structures to cater to ecotourists’ preferences. This context may also elucidate why a select group managed to secure the rights to operate souvenir shops on the most lucrative spots within the reserve. Part of the street vendors expressed dissatisfaction towards the reserve manager and authority during interviews, implying potential irregularities in the

bidding process for profitable souvenir store spots and advocating for greater transparency in such proceedings.

These circumstances underscore the need for reforms. A bottom-up approach to policy design and implementation could bolster local engagement. Tax incentives for construction businesses might incentivize greater use of local rural labor. The reserve administration could additionally offer vocational training initiatives in hospitality, entertainment, tourism, and related fields, cultivating a highly skilled workforce better suited for ecotourism positions. The minimal investment by rural residents in hotels or restaurants, coupled with what appears to be an excessive investment in low-sales souvenir shops, underscores the significance of involving governmental bodies to provide advisory services to business. Given that most rural households experienced financial limitations hindering ecotourism investment, those who managed to invest required guidance due to limited education levels and a lack of business acumen.

## 2.5. Panda Diplomacy

The 2008 Sichuan earthquake caused severe devastation to panda-conservation facilities. Chinese governments, along with the continuing development in economic power, practice donating and loaning enormous pandas [6]. It is described as a new phase of panda diplomacy [6], separate from the former two phases. During Phase 1 of the Mao period (the 1960s and 1970s), China donated pandas as gifts in order to create strategic ties. After Deng Xiaoping took power in 1978, phase 2 began, in which gifts were converted into gifting loans using a capitalist leasing model based upon financial transactions. The research elucidated that during the nascent phase 3, panda loans are regarded as a provision of precious resources and technologies from those nations. This underscores China's commitment to fostering profound trade connections defined by trust, mutual benefit, loyalty, and enduring cooperation. To borrow each panda, a rent of 0.5 to 1 million dollars is needed to be paid to China each year. When a giant panda gives birth to a cub, the lessee must pay China 600,000 US dollars, and the panda must be returned to China after reaching 3 years of age. If a leased giant panda dies abnormally, the lessee must pay 500,000 US dollars in compensation. The revenue generated from lending pandas is put into panda conservation, environmental education, propaganda and natural reserve construction, creating a virtuous economic-environmental cycle.

Pandas contribute not only to the eco-tourism in China but also in other countries that host pandas. In Japan, in 1972, the Ueno Zoo achieved a historical record of 9.2 million visitors the following year, solely due to the arrival of the panda named 'Lu Xun'. It is estimated by Japanese economists that economic benefits of 53.9 billion<sup>3</sup> yen (402 million dollars) were brought to Japan in the first 3 years after the birth of 'Xiang Xiang' (a female panda). A study on the Chinese outbound tourism flows indicated that Panda-hosting nations can improve their international tourism attraction to Chinese tourists. The findings show that destination nations attract a higher proportion of visitors than nations that do not welcome pandas from. This impact persists and becomes stronger in the following years, especially after three years of panda hosting [7].

## 3. Wildlife Management and Safaris in Kenya

### 3.1. Environmental Condition and Conservation of Wild Species in Kenya

Kenya has ratified the Ramsar Convention on Wetlands, which establishes guidelines for the responsible management of wetlands. Among the Ramsar-designated sites in Kenya are five lakes: Nakuru, Naivasha, Bogoria, Baringo, and Elementeita. The Tana Delta is also currently available for conservation efforts. With a rich diversity of birdlife, Kenya, hosting around 1,137 bird species, is a

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<sup>3</sup> Data source: <https://www.chinanews.com.cn/cj/2023/02-22/9958347.shtml>



paradise for ornithologists [8], largely due to these wetland habitats. The nation's assortment of 65 national parks and reserves safeguards an array of ancient, delicate, and diverse animal species, necessitating a specific focus on their care and safeguarding.

Dating back to the colonial era of British rule, the inception of modern wildlife preservation in Kenya can be traced to 1898, when the initial hunting regulations were enacted [8]. These regulations imposed limitations on animal capture, hunting methodologies, and trading while affording protection to numerous endangered species [8]. The emulation of the American model led to the introduction of the concept of national parks. Taking cues from the Yellowstone model, Nairobi National Park, spanning 117 square kilometers, was officially designated on December 16, 1946, making it East Africa's first national park and Kenya's oldest. This park stands as a pinnacle in Kenya's conservation network, offering distinct and unparalleled tourist experiences [8]. Since then, Kenya's array of protected areas has progressively expanded to encompass 65 national parks and reserves, solidifying the country's global reputation for possessing one of the finest national park systems [8].

### 3.2. Economic Analysis of Safaris

Wildlife constitutes an inseparable component of Africa's ecotourism, which has experienced substantial growth over recent decades and emerged as a potent catalyst for African economies. The African Wildlife Foundation underscores the significance of wildlife conservation, emphasizing that the allure of witnessing the astonishing array of African animals thriving in their natural habitats greatly enriches the tourist experience. Notably, Kenya's national parks and reserves have evolved into premier safari destinations, captivating a growing influx of foreign travelers, especially from Western nations. These visitors are drawn by the allure of wildlife observation and capturing the essence of the unique savanna grasslands and wildlife through photography [9]. A study has also underscored the widespread appeal of safari tours, revealing that approximately half of the international visitors to Kenya expect to partake in at least one wildlife appreciation activity during their sojourn [10]. This phenomenon can be attributed, in part, to the enduring imagery of Kenya and other African nations as untamed paradises, which has been alluring Western tourists since the 19th and early 20th centuries. The involvement of Western naturalists and tourism developers has further shaped the design and execution of conservation and tourism initiatives [9].

According to research findings, tourism constitutes the second-largest sector within Kenya's economy. In 2021, Kenya received roughly \$1.3 billion in income from overseas arrivals, and the industry remained strong in employment despite the impacts of the COVID-19 pandemic. As of 2020, tourism contributes about 6.4 percent of the total employment in Kenya<sup>4</sup>. Presently, wildlife-centered tourism contributes to around 70% of tourism revenue, 25% of the GDP, and over 10% of the formal sector employment in the nation [11]. The sector's reliance on imports is estimated at 20%, implying that a substantial 80% of the revenue originated from domestic resources. This characteristic underscores the industry's comparatively lower capital-to-output ratio as well as import dependency per unit of production compared to other sectors [8].

### 3.3. Problems of Safaris in Kenya and Corresponding Solution

The results of a research study focusing on the efficacy of managing protected areas in Kenya uncovered that nearly all terrestrial animal species in Kenya had representation within at least one protected area (PA). The evaluation of prioritizing spatial conservation demonstrated a substantial need for expansion beyond current PAs in order to achieve comprehensive coverage of the focal species' habitats in an optimal reserve system, given the relatively limited proportion of currently

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<sup>4</sup> Source: <https://www.statista.com>

represented habitats. These findings also underscore the importance of establishing well-defined and formally structured definitions, mechanisms for performance evaluation, and collaborative frameworks between state-managed and privately managed PAs for achieving successful conservation of terrestrial mammals in Kenyan PAs [12].

Another study pointed out that many community-based ecotourism (CBET) programmes that are promoted as success stories, however, only slightly alter the way that locals already use their land and resources, add only a small amount to local livelihoods, and depend for extended periods of time, if not permanently, on outside funding. Without a doubt, many community-based ecotourism (CBET) programmes contribute to local employment, raise local incomes, or support neighbourhood initiatives by generating some money (not necessarily profits). However, in the absence of precise data, baseline data, contextual data, and quantitative analysis, the economic impact is difficult to assess. Many reports fail to make a distinction between revenues and profits, fail to consider things like market saturation and distributional consequences, and do not include any cost-benefit or cost-effectiveness analysis. Communities can support conservation if they perceive some benefits from ecotourism and if it does not endanger or otherwise interfere with their primary sources of income. Regrettably, successful conservation frequently necessitates some compromise. For instance, in times of drought when wildlife is also in need of water and food, communities will occasionally insist on permitting cattle into their wildlife reserves. However, in order to organise themselves, acquire and assert their legal rights, and comprehend their obligations in such partnerships, communities frequently require outside help. CBET exemplifies the trade-offs that must be made while attempting to achieve various goals. Ecotourism is an excellent land use for biodiversity conservation, though not as successful as pure preservation. It can generate earnings and help with developing the community, but only within certain parameters and with significant assistance and time investment. It can also lessen the need for long-term external conservation money in some cases, although it will seldom eliminate it totally [13].

Furthermore, the establishment of Kenya's inaugural national parks during the mid-twentieth century mirrored colonial methodologies of "exclusion" and "divide and conquer". These approaches effectively marginalized indigenous communities from participating in decisions and hindered their involvement in launching tourist ventures and conservation efforts for animals. State-backed endeavors for wildlife preservation and safari tourism amplified conflicts between humans and animals, culminating in species depletion and the fragmentation of habitats. The continuation of colonial practices, influence, and power in postcolonial states through tourism is the focus of postcolonial tourism criticism. Kenyan neo-colonialism should be extensively examined for imperialist implications as well as micro-macro power dynamics, negotiation, and struggle. In Kenya's postcolonial period after independence, conservation efforts and safari tourism supplemented the inequal structures established under the previous colonial rule [11].

#### 4. Conclusion

The case studies of panda conservation in Chengdu, China, and wildlife safaris in Kenya, Africa, underscore the intricate relationship between wildlife protection and economic prosperity. The success stories presented in this essay reveal that wildlife conservation can go together with economic development, challenging the notion of an inherent conflict between the two objectives. The 'Panda Economy' in Chengdu exemplifies how strategic conservation efforts can transform an endangered species into a cornerstone of economic growth. The cultivation of panda-related tourism, creative industries, and international collaborations has not only revitalized local economies but also heightened awareness of the importance of conservation. Similarly, Kenya's dedication to preserving its rich biodiversity and promoting sustainable wildlife tourism has positioned the nation as a premier safari destination, attracting significant international tourist traffic and contributing substantially to

its GDP. As global awareness of environmental issues grows, governments, businesses, and communities have an opportunity to leverage wildlife conservation as a catalyst for sustainable economic growth. However, challenges remain, including equitable distribution of economic benefits among stakeholders and addressing potential negative impacts on local ecosystems. By embracing the lessons from these case studies and adopting a holistic approach that values both natural resources and economic progress, societies can chart a course toward a harmonious coexistence between wildlife protection and thriving economies. Policymakers can also get inspiration from Chengdu's way of forging pandas as a positive IP to pull up the demands.

However, it is important to acknowledge the limitations of this research. Some data about panda conservation are obtained from field visits and investigations, while many others are from news, reports, and relevant studies. Data about Kenya and safaris are mainly from past research and reports. Due to the nature of secondary data collection, there may be limitations in the timeliness and the exactitude of data. Future studies can conduct surveys to obtain more precise data and can focus more on the problematic parts and corresponding solutions of the eco-tourism industry, for example, the uneven distribution of economic benefits and postcolonial issues.

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