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Village Government Policy and Sustainable Nature Tourism Development: A Case Study of Ulu Petanu Waterfall

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Abstract:
This study analyzes the implications of village government policies on environmental preservation at the Ulu Petanu Waterfall tourist attraction. Utilizing a descriptive qualitative approach, this research is framed within the Triple Bottom Line (TBL) framework Profit, People, Planet to evaluate how local regulations navigate the tension between tourism-based economic ambitions and the demands of maintaining ecosystem integrity sustainably. Data were comprehensively collected through direct field observations and in-depth interviews with two primary stakeholders: the Head of Kedisan Village as the regulator, and the management of the Village-Owned Enterprise (BUMDes) as the operational implementer in the field. The findings indicate that while village government policies have successfully facilitated digital infrastructure development and community social empowerment programs, they also carry significant ecological implications. The negative impacts identified include the transformation of the natural landscape and decreased soil stability around the waterfall area. These findings emphasize that village leadership must urgently integrate regenerative principles into local regulations to ensure Ulu Petanu remains a resilient ecological and economic asset for the village's future.

Keywords: Village Policy; Ulu Petanu Waterfall; Triple Bottom Line; Environmental Implication; Sustainable Tourism

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Introduction

The tourism sector has long been recognized as a primary pillar of the global economy. Nature-based tourism, in particular, has experienced rapid growth due to a post-pandemic shift in traveler preferences toward open spaces and pristine ecosystem (Nurhidayati et al, 2025). This expansion is often viewed as an instant solution for improving the welfare of communities surrounding these destinations. The expansion of nature-based tourism in the contemporary era presents a fundamental development paradox for the survival of global ecosystems. On one hand, tourism is frequently positioned as a primary catalyst for enhancing the economic welfare of local communities; however, on the other hand, these activities carry a risk of permanent and irreversible environmental degradation. This phenomenon has become increasingly relevant in the post-pandemic era, where interest in outdoor tourism has surged. As stated by (World Tourism Organization, 2022), the tourism and cultural heritage sector in a post-pandemic world requires a more resilient and sustainable approach to manage high visitor pressure. In the Indonesian context, this challenge is even more pronounced as village autonomy grants full authority to local governments to manage their own natural assets. Yet, this freedom in managing economic potential is often not accompanied by a profound understanding of detailed environmental impact mitigation. In this regard, village autonomy acts as a double-edged sword; it is capable of

decentralizing prosperity to the grassroots level, but at the same time, it can trigger excessive land exploitation if not controlled by conservation-based regulations.

Ulu Petanu Waterfall, located in Kedisan Village, is a clear representation of the dynamics of village-based tourism management. Through the Village Law, the village government holds broad authority to determine the development direction of the destination. However, a major challenge arises when the policies adopted lean more toward physical infrastructure development to pursue revenue targets, while ecological aspects are often marginalized. It is crucial to understand that village autonomy brings its own challenges in sustainable natural resource management (Jha, 2024), where the capacity of village officials to prepare environmental mitigation documents is often limited (Zhou et al, 2024). This creates a gap where tourism facility development is carried out massively without in-depth hydrological or geological studies, even though the character of a waterfall is highly dependent on the stability of the land and the surrounding watershed.

This research aims to explore in depth the implications of these various local policies on the natural conditions at Ulu Petanu Waterfall. The focus of this study is intentionally shifted from merely observing "influence" to analyzing "implications," in order to dissect long-term consequences that may not be visible on the surface. To analyze this complexity, the study applies the Triple Bottom Line (TBL) framework introduced by Elkington (Elkington, 1997). This theory offers a balanced perspective by evaluating the success of an organization or policy not only from the economic side (Profit) but also from its social impact on the community (People) and its contribution to environmental preservation (Planet). Through the TBL lens, we can observe whether village governance in Ulu Petanu has successfully harmonized these three pillars or remains trapped in a short-term profit orientation.

In the People (Social) dimension, village government policy should focus not only on employment but also on how cultural and spiritual values are maintained. In Bali, the protection of springs and the natural environment is often closely linked to religious traditions and customary law. According to (Adnyani, 2021) legal protection for springs in tourist villages in Bali is highly dependent on the strength of the prevailing customary law or Awig-awig. This aligns with the central government's efforts to strengthen religious tourism in Indonesia as part of a global tourism strategy (Sya'bani, 2024). In Ulu Petanu, village policies that integrate customary law into tourism management are expected to serve as a social shield protecting the sanctity of the area from destructive activities.

However, tangible challenges emerge in the Planet (Environment) pillar. Infrastructure development policies, such as concrete access roads and parking areas, often lead to significant landscape transformation. The change of land from natural vegetation to impermeable surfaces alters the local hydrological cycle. The implication of this policy is an increase in surface run-off volume, which risks triggering erosion on the waterfall cliffs. Furthermore, spiritual tourism charm and natural beauty are often the main attractions that, if damaged, will eliminate the destination's primary value. As exemplified in the case of the lantern festival at Borobudur, a marketing strategy through spiritual tourism requires a balance between the religious experience of visitors and the preservation of the physical site (Wijayanto et al, 2025). Similarly, in Ulu Petanu, ecosystem sustainability is an absolute prerequisite for the economic sustainability of its tourism.

Finally, the Profit (Economic) pillar in village policy at Ulu Peta being driven through management digitalization. Investment in digital infrastructure, such as the e-ticketing system by

the Village-Owned Enterprise (BUMDes), is a step forward in ensuring financial transparency and visitor data accuracy. However, the implication of this ease of access is the potential for a surge in tourists that exceeds the environmental carrying capacity (Hantana et al, 2024). Sustainable economic policies should not only pursue visitor numbers but also consider how the profits obtained are redistributed for environmental restoration costs. Using a descriptive qualitative method, this research will outline how every administrative decision made by the Village Head and BUMDes management has a chain effect on the preservation of the waterfall.

Overall, this introduction asserts that the future of Ulu Petanu Waterfall as a tourist destination depends heavily on the courage of the village government to prioritize ecological integrity over infrastructure growth ambitions. Through the integration of formal village policies, the strength of customary law, and digital technology, it is hoped that a management model will be created that not only provides financial benefits but also preserves the natural heritage for future generations. This research will provide an academic contribution by demonstrating that policy implications at the village level are the primary key in determining whether tourism will be a blessing or a disaster for the local ecosystem.

Method

The methodology of this study is structured comprehensively using a descriptive qualitative approach through a single case study design to dissect the complexities of village policy implications at Ulu Petanu Waterfall in depth (Creswell & Poth, 2018). In this design, the researcher acts as the primary instrument, engaging directly in the field to capture social and administrative phenomena holistically. To obtain data with both policy authority and operational depth, this study utilizes a purposive sampling technique to determine key informants (Yin, 2018). The selection is specifically restricted to two primary informants representing the pillars of village governance:

1. The Head of Kedisan Village, acting as the regulator who formulates strategic visions and Village Regulations (Perdes).
2. The Management of BUMDes (Village-Owned Enterprise), serving as the operational implementer managing tourist flows and economic revenue on the ground.

Data collection was carried out through in-depth interviews, participant observations of physical landscape transformations, and official documentary analysis of Village Regulations. To ensure technical triangulation, these three sources were constantly cross-checked against one another. Furthermore, all collected data are rigorously processed and interpreted through four systematic analysis stages:

1. Data Reduction: Selecting, focusing, and simplifying raw field notes and interview transcripts.
2. Data Display: Organizing the reduced data into thematic matrices or narrative texts.
3. TBL Framework Application: Categorizing and analyzing the data using the Triple Bottom Line (TBL) framework by Elkington in 1997, which covers the Planet pillar (ecological sustainability and landscape stability), People pillar (social welfare and integration of customary Awig-awig law), and Profit pillar (economic efficiency through management digitalization).
4. Conclusion Drawing/Verification: Reviewing the analyzed data to formulate robust conclusions regarding policy implications.

The application of this TBL framework is crucial, considering that the management of cultural heritage and tourism in the post-pandemic era requires a more resilient and sustainable approach (World Tourism Organization, 2022). This cross-verification process ensures that the analysis remains grounded in accurate facts, as strengthening legal aspects and governance at the village level is the primary key to protecting natural assets, such as water springs, from the negative impacts of tourism (Adnyani, 2021) This is particularly important because village autonomy brings significant challenges in sustainable natural resource management, often requiring a balance between economic expansion and environmental mitigation (Zhou et al, 2024). Furthermore, marketing strategies and digitalization must be balanced with the preservation of the physical and spiritual site to ensure long-term viability (Wijayanto et al, 2025). This structured methodology is designed to produce a complete picture of how administrative policies at the village level transform into real-world implications for environmental preservation and sustainable community welfare.

Results and Discussion

1. Village Policy Governance and Local Legal Protection (People)

Analysis of the governance dimension at Ulu Petanu Waterfall indicates that village government policy serves as the backbone in balancing human interests (People) with administrative order (Governance) (Setiawan, 2026). The organizational structure of tourism management under the Village-Owned Enterprise (BUMDes) acts as a formal instrument providing operational legality for destination development (Hantana et al, 2024). In practice, BUMDes functions not only as a business manager but also as a mediating entity bridging the interests of the village bureaucracy with the economic needs of local residents. Based on observations and policy document reviews, it was found that the division of tasks within BUMDes includes a specialized division for environmental conservation a progressive step compared to other conventional tourism management models.

The sustainability of this governance is reinforced by Village Regulations (Perdes) which comprehensively regulate the retribution system and zoning within the waterfall area. Analysis of the Perdes documents shows that revenue distribution from entrance tickets is allocated not only for tourism infrastructure but also redistributed to the community in the form of social funds and village environmental maintenance. Land zoning in the Ulu Petanu area is divided into three sections: the core zone (the waterfall area which must remain pristine), the buffer zone (limited facility area), and the development zone (parking and commercial areas). This zoning policy is a tangible implementation of the Governance pillar aimed at preventing uncontrolled physical expansion near the water flow (Putri & Wisnawa, 2025). This structured retribution and zoning framework serves as a critical mechanism to mitigate potential conflicts of interest between the management and local residents.

However, governance at Ulu Petanu is strategically reinforced by the integration of local customary law to protect sacred areas. In Balinese tradition, water flows and waterfall cliffs often hold high religious value. Customary law, or Awig-awig, acts as a social control mechanism that is more effective than formal regulations (Silitonga & Wirawan, 2026). The power of this customary law provides spiritual and physical protection for the ecosystem; for example, prohibitions on cutting certain trees or engaging in activities that could pollute the sanctity of the water. The synergy between administrative policy (Perdes) and the strength of customary law (Awig-awig) creates a multi-layered protection system. This suggests that the viability of sustainable tourism in

this context is highly supported by the extent to which modern policies embrace local wisdom values that maintain harmony between humans and nature.

Table 1. Annual Visitor Volume at Ulu Petanu Waterfall

No	Year	Number of Visitors
1	2023	6.900
2	2024	7.400
3	2025	11.000

Source: Ulu Petanu Waterfall's Manager, 2026

2. Ecological Impact of Landscape Transformation (Planet)

The Planet pillar in the Triple Bottom Line theory highlights the physical consequences of every development policy. At Ulu Petanu Waterfall, landscape transformation is an inevitable reality as the area's status rises as a flagship tourist attraction. The identification of land-use changes shows a shift from green open spaces and riparian forests to functional areas such as concrete access paths, parking lots spanning several hundred square meters, and supporting facilities like stalls and toilets. While these facilities are essential for visitor comfort, their transformation brings significant ecological impacts on water infiltration (Mairiza & Noviarita, 2023). Covering the ground surface with impermeable materials in the upstream area of the waterfall risks increasing run-off volume, which can trigger erosion around the cliffs (Millah & Fadlina, 2023).

The impact of physical development directly affects cliff stability and water quality in the Ulu Petanu flow. Based on field observations, the construction of concrete stairs and bridges in direct contact with the waterfall cliff walls requires strict supervision to avoid disturbing the natural geological structure. Vibrations from construction activities and the physical load of these structures have the potential to weaken slope stability if not accompanied by eco-friendly engineering techniques. Furthermore, construction activities often produce sediment that enters the stream, which in the short term can decrease water clarity. The village government is challenged to ensure that every infrastructure "improvement" does not inadvertently damage the aesthetics and the primary attraction for tourists sold to tourists.

The effectiveness of waste management systems and the conservation of indigenous vegetation are key indicators of the Planet pillar's success. The village government has implemented a ban on single-use plastics in the tourism area, supported by the provision of sorted waste bins at strategic points. However, the main challenge remains visitor education and the consistency of waste transport from the bottom of the waterfall to the village landfill. On the other hand, the conservation of native vegetation around the waterfall must remain a priority through policies for replanting endemic trees. The landscape transformation must be regenerative, meaning every piece of land converted to concrete must be compensated by the protection of surrounding green areas. Environmental sustainability at Ulu Petanu depends on how boldly the village government limits infrastructure development to preserve the natural purity that is the destination's primary draw.

3. Socio-Economic Dynamics toward Environmental Sustainability (Profit)

The Profit pillar in this research is viewed not only as capital accumulation but as the economic circulation that supports environmental sustainability (Getz & Page, 2019). The increase in Village Original Income (PAD) through Ulu Petanu Waterfall tourism retributions has created a wider fiscal space for the village government to fund public programs. Job creation for local residents ranging from management staff and security to small vendors has reduced residents'

dependence on illegal forest exploitation. This dynamic shows that well-managed tourism can provide a greener economic alternative compared to other extractive sectors. However, this economic growth brings a great responsibility for the village government to ensure that profits are fairly reallocated toward ecosystem maintenance costs.

The village government's investment in digital technology, such as e-ticketing systems and social media-based promotion, is a crucial efficiency effort in the Society 5.0 era (Yulianti et al, 2025). Digitalizing entrance tickets is not just about payment convenience, but also about financial data transparency (Arismayanti et al, 2022). With a digital system, the village government can accurately track visitor numbers, prevent budget leakages, and use the data for strategic planning. The efficiency generated from digital technology allows managers to have a surplus of funds that can be reinvested into environmental monitoring technology, such as water quality sensors or flow rate monitors. This innovation proves that the Profit and Planet pillars can be mutually reinforcing if technology is used as a control tool rather than merely an exploitation tool.

Nonetheless, there is a visible tension between mass tourism targets and the need to maintain ecosystem tranquility. Ambitions to maximize profit often drive managers to accept as many tourists as possible without considering the carrying capacity (Millah & Fadlina, 2023). Excessive visitor density can lead to noise pollution, disturbance of endemic wildlife, and physical pressure on the soil around the waterfall. Village government policy should be able to set a maximum daily visitor limit, even if this theoretically limits maximum revenue potential. This dynamic requires the wisdom of village leadership to prioritize stable, long-term gains over large profits that lead to environmental destruction. The alignment between achieving profit targets and environmental preservation at Ulu Petanu is the key to the success of future tourist village development models.

Conclusion

The analysis of governance and policy at Ulu Petanu Waterfall indicates that the village government has established a solid foundation through the synchronization of formal administrative regulations, in the form of Village Regulations (Perdes), with the power of local customary law, or Awig-awig. Management under the auspices of the Village-Owned Enterprise (BUMDes) functions not only as an economic driver to increase Village Original Income (PAD) but also as a mediating entity that ensures the involvement of local communities as subjects of development, thereby creating social strengthening and equitable economic welfare. Nevertheless, there is a tangible tension within the environmental pillar due to the transformation of the riparian landscape into physical infrastructure, such as concrete paths and parking areas, which risks increasing run-off volume, triggering cliff erosion, and degrading the ecosystem if not accompanied by eco-friendly engineering. In this regard, the integration of digital technologies, such as e-ticketing systems and IoT sensors, emerges as a strategic mitigation instrument that allows for the real-time monitoring of tourist flows to maintain carrying capacity and ensure financial transparency that supports nature restoration funds. Overall, the sustainability of Ulu Petanu as an ecological and economic asset depends heavily on the courage of village leadership to continue prioritizing natural integrity over short-term profit ambitions, ensuring that every development policy remains rooted in local wisdom values and regenerative principles for the fragile ecosystem.

References

Arismayanti, N. K., Andiani, N. D., & Pitana, I. G. (2022). *Digital Marketing: Teori, Konsep, dan Implementasinya dalam Pariwisata*. KBM Indonesia. https://share.google/hyu6MBdGDV4u35WEh

Adnyani, N. K. S. (2021). Perlindungan Hukum Kesatuan Masyarakat Hukum Adat dalam Pengelolaan Pariwisata Berbasis Kearifan Lokal. *Media Komunikasi FPIPS*, 20(2), 70-80. https://doi.org/10.23887/mkfis.v20i2.33738

Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches (4th ed.)*. SAGE Publications. https://books.google.co.id/books?id=DLbBDQAAQBAJ

Elkington, J. (1997). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Capstone Publishing. https://books.google.com/books?id=dIJAbIM7XNcC

Getz, D., & Page, S. J. (2019). *Event Studies: Theory, Research and Policy for Planned Events*. Routledge. https://www.taylorfrancis.com/books/mono/10.4324/9780429023002/event-studies-stephen-page-donald-getz

Hantana, J. S. P., Tarini, N. L. P. E., Sarikumpul, N. N., Riyastini, N. K., & Judi, T. E (2024). Kolaborasi Kinerja Desa Adat dan Peran Bumdes dalam Menjalankan Program Wisata Terpadu Taman Mumbul. *Abdi Massa: Jurnal Pengabdian Nasional*, 4 (05), 29-45. https://doi.org/10.69957/abdimass.v4i05.918

Jha, M. (2024). The Role of Digital Transformation in Business and its Impact on Sustainable Development Goals (SDGs) in the Tourism Sector. *SDGs Studies Review*, 5(010), 5-6. https://doi.org/10.37497/sdgs.v5igoals.10

Mairiza, K. T., & Noviarita, H. (2023). Meningkatkan Kemampuan Green Economy dalam Mendorong Pengembangan Desa Wisata untuk Mewujudkan Pembangunan yang Berkelanjutan. *Revenue: Jurnal Ekonomi Pembangunan dan Ekonomi Islam*, 6(02), 40-53. https://doi.org/10.56998/jr.v6i02.98

Millah, R. S., & Fadlina, S. (2023). Analisis Daya Dukung (Carrying Capacity) dalam Mendukung Pengembangan Destinasi Pariwisata Pantai Batukaras Kabupaten Pangandaran. *Tourism Scientific Journal*, 8(2), 191-213. https://doi.org/10.32659/tsj.v8i2.268

Nurhidayati, S. E., Muliani, L., Judijanto, L., Apriyanto, A., Haryanti, T., Darmayasa, D., & Raksapati, A. (2025). *Pesona Pariwisata Indonesia: Potensi, Pengembangan, dan Inovasi Membangun Destinasi Pariwisata Indonesia*. PT. Sonpedia Penerbitan Indonesia. https://books.google.co.id/books?id=icY_EQAAQBAJ

Putri, I. A. K., & Wisnawa, I. M. B. (2025). Evaluasi Prinsip Keberlanjutan (Sustainability) Terhadap Operasional Mimpi Resort Menjangan Desa Pejakaran Gerogak Kabupaten Buleleng Bali. *Journal of Tourism and Interdiciplinary Studies*, 5(2), 534-549. https://doi.org/10.51713/jotis.2025.52115

Setiawan, A. (2026). *Pemerintahan Desa*. Deepublish. https://books.google.com/books?id=djzXEQAAQBAJ&pg=PP1

Silitonga, D. T., & Wirawan, P. E. (2026). Implementasi Community Based Tourism dalam Pengelolaan Pariwisata Berkelanjutan di Desa Penglipuran, Bali. *Jurnal Pariwisata Bisnis & Digital*, 2(1), 223-224. https://doi.org/10.30647/jpbd.v2i1.2046

Sya'bani, S. M. (2024). *Kemenag Kuatkan Wisata Religi Umat Buddha Indonesia dan Dunia*. Kemenag. https://kemenag.go.id/nasional/kemenag-kuatkan-wisata-religi-umat-buddha-indonesia-dan-dunia-SiBhY

World Tourism Organization. (2022). *Tourism and Culture in the Post-COVID-19 World: Recovery and Resilient Development*. UN Tourism. https://www.untourism.int/recommendations-for-recovery-covid-19

Wijayanto, R., Aisyianita, R. A., Kusumawati, F. D., & Winda, I. C. (2025). Marketing Strategy through Spiritual Tourism: A Case Study of the Borobudur Vesak Lantern Festival. *Indonesian Journal of Tourism and Leisure*, 6(2), 194-207. https://doi.org/10.36256/ijtl.v6i2.567

Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods*. SAGE Publications. https://books.google.com/books?id=uX1ZDwAAQBAJ

Yulianti, R., Andriani, M., & Yeshiana, W. (2025). Model Pengembangan Desa Cerdas (Smart Village) Dengan Pendekatan Penta-Helix Untuk Mewujudkan Kemandirian Masyarakat Desa di Era Society 5.0. *Moderat: Jurnal Ilmiah Ilmu Pemerintahan*, 11(1), 132-138. https://doi.org/10.25157/moderat.v11i1.4503

Zhou, L., Zhou, Y., de Vries, W. T., Liu, Z., & Sun, H. (2024). Collective Action Dilemmas of Sustainable Natural Resource Management: A Case Study on Land Marketization in Rural China. *Journal of Cleaner Production*, 439, 140872. https://doi.org/10.1016/j.jclepro.2024.140872