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Legal Compliance and Environmental Sustainability: The Case of Single-Use Plastics in Bali

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ABSTRACT

This study explores the effectiveness of regulatory measures to restrict single-use plastics in Bali, a prominent tourist destination facing significant plastic waste challenges. The Bali Regional Government implemented Bali Governor Regulation No. 97/2018, targeting reductions in plastic bags, styrofoam, and straws through obligations on producers, distributors, and businesses to offer non-plastic alternatives. Evaluations in 2020 showed notable decreases: 57% for plastic bags, 81% for styrofoam, and 70% for plastic straws. The success is attributed to stringent law enforcement, adequate facilities, and the Balinese cultural readiness for environmental change. Education and socialization also played crucial roles in public compliance. Nevertheless, challenges persist in small markets and warungs. The study underscores the need for ongoing waste management improvements, continuous public education, and traditional leadership engagement to sustain behavioral change, supported by clear incentives and sanctions.

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1. INTRODUCTION

"Global warming is real". That's what my German friend told me, who said that for the last 10 (ten) years, he had not seen a pile of snow that actually fell where he lived in Bremen, Germany (Schäfer, 2022). For Indonesians who only recognize 2 (two) seasons, of course, world climate change is only felt when the rainy/dry season shifts from year to year (Pattinama & Vieldha Ayhuan, 2019). The impact is not really felt except for those who really understand the cycle of weather changes related to the planting or harvesting of crops and those who can no longer predict the tides and ebbs of seawater during the fishing season. George Kukla argues that global warming occurs due to a natural process, namely changes in the geometry of the earth's orbit around the sun, and of course humans cannot stop this natural process (Klaus, 2012). Singer and Avery similarly state that warming is an annual cycle and humans play a minor role in the cycle. This argument was refuted by the emergence of the Intergovernmental Panel on Climate Change (IPCC) study results released in 2007 where extreme weather changes, rising temperatures, and rising seas are true and human actions play a role (Bram, 2016).

Waste contributes to worsening climate change. Methane gas, which is one of the contributors to global climate change, can be formed through landfill. The Ministry of Environment and Forestry, through its official website, invites the public to reduce plastic waste to the utilization of plastic and synergy with relevant stakeholders (Sharma et al., 2018). So far, our society has been more educated on how to choose, sort, and reuse plastic waste, but not on efforts to get used to not using single-use plastics. It is undeniable that all equipment in human activities is 90% or more using plastic-based materials, so living free without plastic is impossible.

Videos circulating on social media some time ago of a turtle eating plastic waste or a Manta Ray swimming amidst plastic waste in Bali's ocean waters show that plastic waste is destroying marine life without us realizing it. Even in his writing, Roger Harrabin, a BBC environmental analyst, stated that the air we breathe contains microplastics (Harrabin, 2023). As reported on the same website, it is also said that most of the microplastics found along the coastline are the same plastics from the 1990s, so here it is known that plastic waste takes decades to decompose⁶. Data from the Ministry of Environment and Forestry's National Waste Management Information System in 2022 states that the second largest waste composition (18.1%) nationally comes from plastic waste⁷. Although it is not the largest contributor to the waste pile, if you look at the natural nature of plastic, which is not easily decomposed for decades, sooner or later plastic waste will damage the environmental ecosystem, so it is appropriate to impose regulations on the use of plastic.

Research related to legal compliance and environmental sustainability in the context of single-use plastics in Bali revealed a number of important findings. Bali Governor Regulation no. 97/2018 which was issued to reduce the use of single-use plastics such as plastic bags, styrofoam and straws, has shown significant results (Andini, 2022). Evaluations in 2020 showed a reduction in single-use plastic use of 57% for plastic bags, 81% for styrofoam, and 70% for plastic straws (Schnurr et al., 2018). This success is largely due to strict law enforcement, adequate supporting facilities, and the Balinese people's cultural awareness of environmental changes. Single-use plastic is known to be one of the biggest contributors to marine and land pollution which has a negative impact on ecosystems and human health (Pambudi & Adab, 2023). Therefore, limiting its use is considered an important step in achieving environmental sustainability. Education and outreach also have a crucial role in encouraging public compliance, where educational programs and social campaigns have succeeded in increasing awareness of the importance of reducing the use of single-use plastic (Pesek Pramana, 2023). However, challenges remain, especially in small markets and food stalls where plastic use is still high. To overcome this challenge, more effective waste management and ongoing education are needed to reduce high waste generation. Apart from that, traditional leadership and providing clear incentives and sanctions can encourage better behavioral changes in society. This study emphasizes the importance of a multifaceted approach that includes

regulation, education, law enforcement, and the role of culture in achieving environmental sustainability goals.

Although this research shows the success of the Bali Governor Regulation No. 97/2018 in reducing the use of single-use plastic, there are several gaps that need further analysis. Firstly, while the decline in plastic use has been recorded as significant at a general level, there is a lack of specific data evaluating compliance across sectors and business scales, particularly in small markets and food stalls which still face major challenges. Second, this research has not fully explored the effectiveness of the incentives and sanctions provided in encouraging changes in community and business behavior. Third, although education and socialization are mentioned as important factors, the lack of measurable evaluation of the methods and impact of these educational programs is a gap that needs further research. Additionally, there is a need to assess the contribution of cultural and traditional factors in compliance with these regulations. Fourth, a comprehensive analysis of the economic impacts of switching to non-plastic alternatives for producers and consumers in Bali has not yet been fully explained, which is important for the long-term sustainability of this policy.

This paper takes a conceptual approach to the restrictions on single-use plastic in the Island of the Gods, Bali. As one of the world's best tourist destinations, the presence of local and foreign tourists certainly has an impact on the waste that tourists leave behind. To address this problem, the local government in Bali, through both the Governor's Regulation and the Regent/Mayor's Regulation, has compiled local regulations in the hope of bringing about positive changes in the use of single-use plastics. This paper aims to outline the concept of Balinese compliance in complying with the rules related to the use of single-use plastics.

2. METHODS

This research uses a normative sociological approach to analyze Balinese compliance with the single-use plastic restriction regulation. This approach combines normative studies, which focus on analyzing laws and policies, with sociological studies that explore how laws are applied and responded to by people in their social context. Using a normative sociological approach, this research is expected to provide a comprehensive understanding of Balinese compliance with restrictions on the use of single-use plastics and the factors that influence the implementation and effectiveness of these regulations in the local social and cultural context (Langbroek et al., 2017).

The normative approach in this research includes an in-depth analysis of Bali Governor Regulation No. 97/2018 on Limiting the Generation of Single-Use Plastic Waste. The analysis begins by understanding the legal basis underlying the policy, including relevant laws and government regulations. Next, the research examines the content of the regulation, including the definition of single-use plastics, the obligations of various parties (producers, distributors, suppliers, and businesses), and the sanctions stipulated for violations. The main purpose of this regulation is also analyzed, which is to reduce plastic waste generation and improve environmental quality in Bali.

On the other hand, a sociological approach is used to understand how this regulation is accepted, implemented, and complied with by the Balinese community. This research explores the social interaction in the community regarding their response to this regulation, including the level of compliance and the role of education and socialization conducted by the government and related organizations. The influence of Balinese culture and customs, which are very strong and play a big role in people's daily lives, was also analyzed to understand its impact on the acceptance of the regulation. In addition, the research involved direct observation in the field, specifically in markets, small warungs, and retail stores, to see how these regulations are applied in daily practice.

This combination of normative and sociological approaches provides a comprehensive picture of the effectiveness of the regulation, the level of community compliance, and the roles and

obstacles faced by the government and businesses. Through literature and documentation studies, this research collected and analyzed official documents related to the regulation, evaluation reports, and relevant literature to understand the legal basis and policy objectives in depth.

3. RESULTS AND DISCUSSION

Reduction in Single-Use Plastics

The establishment of Law No. 18/2008 on Waste Management shows that waste has become a national issue and the government in this case is trying to fulfill its responsibility to provide the right to environmental health for its citizens. This regulation is actually also expected to be able to change the behavior of citizens considering that waste management is not only about how to choose, sort and process waste that is generated but also how to prevent something that has the potential to become waste. This is in line with the provisions of Article 6 letter (c) of the Waste Management Law which states that one of the obligations of the government and local governments is the effort to reduce waste. So far, there are 113 (one hundred and thirteen) regions in Indonesia that have regulations related to single-use plastic restrictions, including the Bali Provincial Government (Forum Daerah Bebas Plastik 2023, 2023). The Governor of Bali has issued Bali Governor Regulation No. 97/2018 on Limiting the Generation of Single-Use Plastic Waste. Single-use plastics (PSP) referred to in the Pergub are plastic bags, styrofoam and plastic straws. The prohibition on the production and use of PSP as stated in Article 7 applies to producers to produce, distributors to distribute, suppliers to supply and business actors to provide PSP. This prohibition is also followed by an obligation to produce, distribute, supply and provide PSP substitute products (Peraturan Gubernur Bali Nomor 97 Tahun 2018, 2018). The community and individuals are obliged to prevent and reject the use of PSP in their daily lives. The ban on the use of single-use plastics is also outlined in the form of a Regional Action Plan accompanied by the following with administrative sanctions in it, although the Pergub does not explain the mechanism of administrative sanctions in question.

Money at the end of 2020 related to Pergub Bali showed a significant decrease in the use of PSP, namely plastic bags by 57%, styrofoam by 81% and straws by 70%, although the use of PSP can still be found in small stalls or markets. Prof. Dr. Soerjono Soekanto, SH, MA, states that law enforcement is influenced by several factors, namely: (1) law, which is limited to laws only; (2) law enforcement officers, (3) supporting facilities, (4) society, and (5) culture (Soekanto Soerjono, 2014). The success of reducing the use of PSP if based on the factors above is more influenced by the facilities, society and culture. The author's personal experience when shopping at stalls, small shops and even retailers in Denpasar shows that it is almost difficult to find the use of plastic bags. The use of PSP in other cities is optional, meaning that consumers can use PSP for an additional fee, but this is not the case in Denpasar. Restrictions on the use of PSP in Denpasar are also in line with the compliance of business actors with the existing gubernatorial regulation. Adequate facilities, community compliance and business actors will eventually together form a culture of behavior in a society. This habit is what psychologically brings a certain culture of behavior. Utrecht states that the observance of the law by the community is partly due to the fact that the community wants it (Soeroso, 2018). For example, reducing the use of plastic bags in Yogyakarta is difficult to implement because the culture of Yogis (Javanese) considers it inappropriate to buy and carry goods without bags.

The success of waste management regulations, particularly in reducing single-use plastics (SUP), hinges on several key factors elucidated by legal scholar Prof. Dr. Soerjono Soekanto. These factors include the clarity and enforcement of laws, the efficacy of law enforcement personnel, the availability of supporting infrastructure, societal norms, and cultural attitudes. In Bali, the notable reduction in SUP usage is largely attributed to the availability of adequate facilities for waste management, strong societal compliance with regulations, and the Balinese culture's readiness to embrace environmental changes. Personal observations from shopping experiences in Denpasar highlight the rarity of encountering plastic bags, indicating high compliance among local businesses

with the gubernatorial regulation. Unlike other cities where plastic bag usage persists with optional fees, Denpasar's strict enforcement underscores a cultural shift towards sustainable practices. This adherence reflects Utrecht's assertion that community adherence to laws often stems from intrinsic societal aspirations. Conversely, in Yogyakarta, cultural traditions pose challenges to reducing plastic bag use, illustrating regional variations in implementing and complying with environmental regulations across Indonesia. Thus, while legal frameworks provide the foundation, effective enforcement, supported by cultural readiness and infrastructure, plays a pivotal role in achieving lasting behavioral changes towards sustainable waste management practices nationwide.

Effectiveness of Incentives and Sanctions

The Balinese people are renowned for their deep-rooted adherence to traditional customs and cultural practices, even as they navigate the tides of modernization. Unlike many traditional communities in other Indonesian provinces, the Balinese have been significantly exposed to global influences due to the island's prominent position as a world-renowned tourist destination. Despite this, the cultural fabric of Bali remains resilient, woven tightly with rituals, ceremonies, and a strong sense of community. The Balinese people's steadfast commitment to their heritage is evident in their daily lives, where traditional practices are not only preserved but are also integrated into the contemporary lifestyle. This unique balance between tradition and modernity allows the Balinese to maintain their cultural identity while embracing the benefits of a modern society.

The openness of the Balinese society to new ideas and external influences has played a crucial role in fostering education, particularly concerning environmental issues. The community's awareness of the interconnectedness between environmental health and economic prosperity, especially through tourism, has prompted a proactive stance on waste management and ecological preservation. As Bali's economy heavily relies on tourism, the local population understands that maintaining a pristine environment is not just beneficial but essential. Educational initiatives have been instrumental in promoting sustainable practices and raising awareness about the impact of waste on the island's natural beauty and, consequently, its tourism industry. This enlightened perspective is increasingly leading to community-driven efforts to address environmental challenges, highlighting the Balinese people's capacity to adapt traditional values to contemporary global concerns.

In Bali, the interplay between traditional governance structures, such as *Desa Adat* (customary villages), and modern legal frameworks exemplifies a unique approach to legal compliance. The local government's strategy for encouraging environmental responsibility aligns with the Hobbesian mechanism, wherein incentives and penalties are used to regulate behavior. *Desa Adat* that successfully reduce the use of single-use plastics (PSP) are rewarded, not with personal benefits, but with community incentives that enhance their collective well-being. This approach ensures that the community as a whole remains motivated to pursue sustainable practices. Although administrative sanctions for non-compliance are not explicitly detailed in the provincial regulations (Pergub), the implicit understanding of their existence fosters a sense of accountability among the Balinese. This system underscores the integration of traditional governance with modern legal principles, reinforcing the community's commitment to preserving both their environment and their cultural heritage.

The Balinese experience illustrates a successful model of integrating tradition with modernity to achieve sustainable development. The community's ability to uphold their cultural traditions while being receptive to modern educational initiatives and legal frameworks demonstrates a harmonious coexistence of the old and the new. This dynamic allows the Balinese to address contemporary challenges, such as environmental sustainability, without compromising their cultural identity. By leveraging their traditional governance structures and aligning them with modern legal mechanisms, the Balinese are able to effectively manage their environmental resources and ensure the continued prosperity of their tourism-dependent economy. This

integrative approach not only preserves the rich cultural tapestry of Bali but also sets a precedent for other traditional societies grappling with the pressures of modernization.

The community in Bali perceives that the gradual reduction of single-use plastics (SUP) will yield long-term benefits. The pervasive use of SUP contributes to accumulating piles of plastic waste that mar the natural beauty of Bali Island, posing environmental hazards and potentially diminishing Bali's esteemed reputation as a global tourism destination. The collective adherence to SUP restrictions also exemplifies the Habermasian concept of communicative action, emphasizing the pivotal role of dialogue and consensus-building. This communicative approach is evident in the formulation and implementation of the Regional Action Plan on SUP, which incorporates educational campaigns, socialization efforts, and collaborative initiatives among government bodies and local communities. By fostering a shared understanding of the environmental impacts and promoting responsible consumption practices, Bali aims to mitigate plastic pollution, safeguard its natural assets, and sustain its appeal as a premier tourist destination in the years to come.

This theory assumes the importance of communication as an absolute requirement for consensus (Simarmata, 2023). The communication in question is seen in the formulation of the Regional Action Plan on the use of PSP both through education, socialization, and assistance among elements of government and local communities. The success in reducing the PSP usage rate does not mean that there are no corrections that need to be made. Greater challenges are found in small stalls and markets considering that they are not obliged to comply with certain management policies, so education related to self-awareness needs to be further improved considering that throughout 2022 Bali Province still generates 1,027,433.75 tons of waste generation (Ministry of Environment and Forestry, 2022). This figure is much higher than the waste generation in West Nusa Tenggara Province, which hovers around 800 tons from the same perspective as an international tourist destination. Leadership figures in indigenous communities also play an important role in terms of compliance, so it is appropriate that rewards and sanctions can be applied easily and tangibly to change community behavior. For example, *pamidanda* or customary sanctions are given not to retaliate for illegal activities but rather to restore harmony and balance in the community (Pesek Pramana, 2023).

Moreover, the success in reducing SUP usage in Bali underscores the ongoing need for improvements and adjustments. Small stalls and markets pose significant challenges due to their exemption from certain management policies, highlighting the necessity for enhanced educational efforts to raise self-awareness among these vendors. Despite Bali's efforts, the province still faces substantial waste generation, exceeding that of comparable tourist destinations like West Nusa Tenggara Province (Andini, 2022). This disparity underscores the urgency of more targeted interventions and stricter enforcement to achieve sustainable waste management goals across all sectors (Rodríguez-Pose & Wilkie, 2019). Leadership within indigenous communities remains crucial, with customary sanctions serving not only as punitive measures but also as tools for fostering community cohesion and adherence to environmental regulations. As Bali navigates these challenges, aligning incentives and sanctions to effectively influence community behavior will be essential. By reinforcing education, expanding infrastructure, and fostering collaborative efforts between government entities and local communities, Bali can further advance its environmental initiatives while preserving its cultural heritage and economic vitality in the global tourism landscape.

4. CONCLUSION

From the discussion, this research concludes several critical insights regarding Balinese compliance with regulations on restricting single-use plastic. Firstly, compliance is influenced by two main mechanisms: the Hobbesian mechanism, involving government incentives to indigenous villages and administrative sanctions influencing behavior, albeit not fully detailed in the regulation; and the Habermasian mechanism, emphasizing community communication, consensus-building

through educational efforts, socialization, and mentoring to enhance environmental awareness. Secondly, despite substantial progress in reducing single-use plastics, universal compliance remains elusive due to challenges such as inadequate coordination among implementing parties and inconsistent enforcement of sanctions, particularly affecting small warungs and traditional markets. Thirdly, leadership within the indigenous community significantly shapes compliance culture, highlighting the pivotal role of indigenous leaders in fostering behavioral change. Thus, achieving comprehensive compliance across Bali necessitates synergistic efforts among the indigenous community, government, and stakeholders to ensure widespread acceptance and implementation of single-use plastic reduction measures. In conclusion, this study underscores the importance of not only regulatory frameworks and sanctions but also effective communication, continuous education, and active indigenous community involvement for the sustainable success of Bali's initiatives in single-use plastic reduction.

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