

TRANSFORMATION OF ENVIRONMENTAL MANAGEMENT: THE MODEL OF SOURCE-BASED WASTE MANAGEMENT POLICY IMPLEMENTATION IN BALI, INDONESIA

I Made Sumada^{1,*}, Nyoman Sumawidnyani², I Kadek Dede Junaedy³, Dewa Putra Sedana⁴, Tunggul Sihombing⁵

1Departemen of Public Administration, Universitas Ngurah Rai Denpasar, Bali 80238, Indonesia, made.sumada@unr.ac.id.

2Departemen of Public Administration, Universitas Warmadewa, Bali 80239, Indonesia

3Departemen of Political Social Sciences, Universitas Ngurah Rai, Denpasar Bali 80238 Indonesia

4Departemen of Political Social Sciences, Universitas Ngurah Rai, Denpasar Bali 80238 Indonesia

5Departemen of Public Administration, Universitas Sumatera Utara, Medan 20155 Indonesia

*Corresponding author : I Made Sumada, made.sumada@unr.ac.id.

Abstract

In the era of globalization and mass tourism, the issue of waste management has become an increasingly serious challenge for tourism destinations, including Bali. The Bali Provincial Government responded through Governor Regulation No. 47 of 2019 concerning source-based waste management, which emphasizes the importance of waste reduction starting from households. This study aims to analyze the implementation model of the policy with a focus on Taro Village, Gianyar Regency, as one of the villages that received funding support for optimizing the management of the Reduce, Reuse, Recycle Waste Processing Site (3R WPS). The theoretical approach used is the Policy Implementation Theory, combining top-down and bottom-up perspectives. The research method used is descriptive qualitative through in-depth interviews, field observations, and document studies. The results of the study indicate that the success of policy implementation is greatly influenced by the role of local actors, community participation, institutional capacity, and budget and technology support. Taro Village faces challenges in terms of community awareness and operational capacity but shows significant local initiatives in source-based waste management. This study contributes to the development of a model for implementing local community-based environmental policies in tourism areas.

Keywords: *Public Policy, Policy Implementation, Waste Management, Source-based, 3R WPS, Taro Village, Top-Down, Bottom-Up, Bali.*

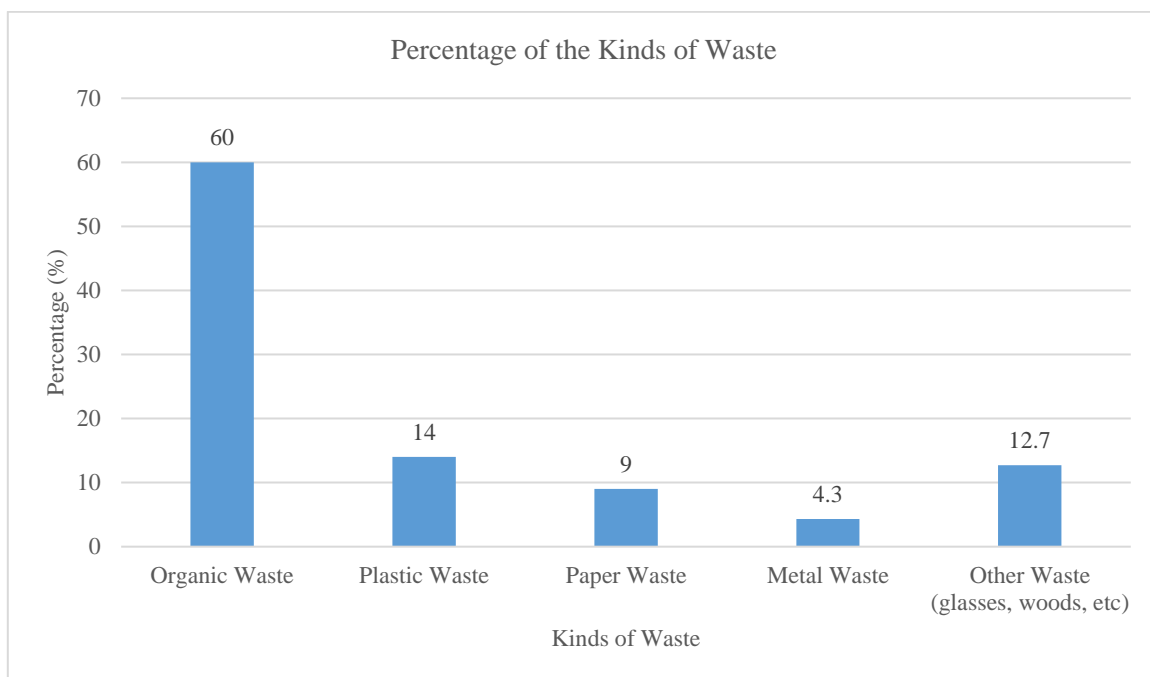
Research Background

Tourists come with diverse cultural backgrounds, bringing positive impacts on economic growth and cultural exchange, but also creating challenges, especially for environmental sustainability and local cultural preservation. As stated by Sanusi Pane (in Alfian, 1985: 109), Indonesian culture based on cooperation and spirituality often confronts the values of individualism and materialism brought by foreign cultures.

Indonesia, as one of the world’s leading tourist destinations, faces significant challenges in waste management due to the increasing number of tourists and population growth. The province of Bali, known as an icon of Indonesian tourism, has experienced a significant increase in waste volume, especially plastic waste. According to research by Muliarta (2022), the concept of a circular economy has been proposed as an approach to address this problem, emphasizing source-based waste management that involves active community participation in recycling and reusing waste.

Amidst the booming tourism industry, Bali has become one of the most prominent international tourist destinations. However, the increase in the number of tourist visits has a direct impact on environmental issues, especially in terms of waste management. Waste that is not handled properly not only pollutes the environment but also damages the image of the tourist destination itself. This is reinforced by data from **Sustainable Waste Indonesia (SWI, 2017)** which shows that the composition of waste in Indonesia is mostly organic waste, followed by plastic, paper, metal, and others:

Table 1. Composition of Waste in Indonesia (Source: SWI, 2017)



Graph 1. Composition of Waste in Indonesia (Sumber: SWI, 2017)

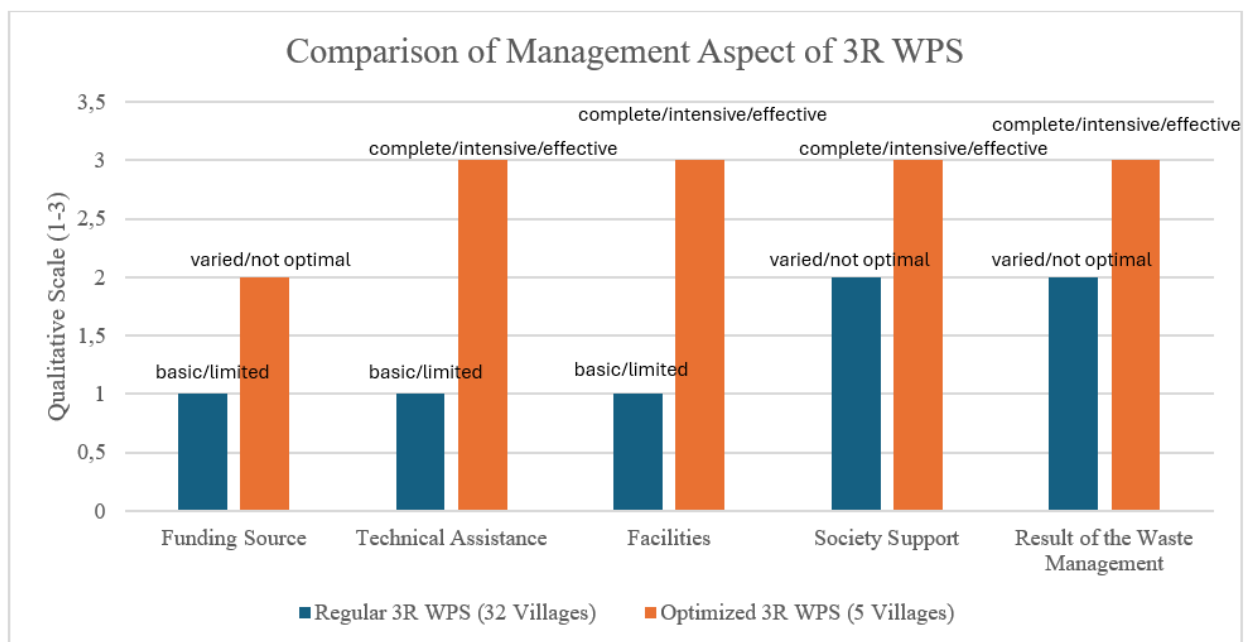
The data shows that waste management, especially source-based, is very important to be implemented systematically. The Bali Provincial Government has responded to this problem by issuing Bali Governor Regulation No. 47 of 2019 concerning Source-Based Waste Management. In its implementation, several regencies in Bali, including Gianyar Regency, have implemented the construction of Reduce-Reuse-Recycle Waste Processing Sites (3R WPS), both in regular schemes and by optimizing funding.

Table 2. Location and Status of 3R WPS in Gianyar Regency, Bali (Compiled Data, 2021–2023)

No	Village	District	Status of 3R WPS	Additional Description
1	Taro Village	Tegallalang	Optimization	Research Object
2	Pejeng Village	Tampaksiring	Optimization	Heritage area
3	Bedulu Village	Blahbatuh	Optimization	Close to Goa Gajah Tourism Destination
4	Lembeng Village	Sukawati	Optimization	Coastal area
5	Padang Tegal Customary Village	Ubud	Optimization	Tourism area of Monkey Forest
6–37	(27 other villages)	Entire Gianyar	Receiver of 3R WPS building	Without optimization funding

In the Gianyar Regency, of the total 37 villages receiving funding for the construction of 3R WPS, 5 villages receive fund optimization, namely Taro Village, Pejeng Village, Bedulu Village, Lembeng Village, and Padang Tegal Customary Village. This intensive support is expected to accelerate the achievement of a waste-free village through resource-based management and active community participation.

Table 3. Comparison of the Pattern of Waste-management in Gianyar Regency



However, the implementation of source-based waste management policies in Bali faces various challenges. A study by Adnyana et al. (2023) identified that although Bali Governor Regulation No. 47 of 2019 has been implemented, there are still obstacles in communication, resources, and bureaucratic structures that hinder the effectiveness of its implementation. In addition, a study by Dalem et al. (2024) highlighted local community resistance to the policy, which was caused by a lack of shared understanding and overlapping regulatory conflicts. A study by Rijayanti et al. (2020) in Changwon, South Korea, showed that

community participation in waste management can be increased through a volume-based waste fee (VBWF) system. In this system, residents pay according to the amount of waste they produce, encouraging them to sort and reduce waste at the source. This policy is also supported by an extended producer responsibility system and a transparent waste management information system, which significantly reduces illegal dumping and increases recycling efficiency, as well as the results of a study in Tanzania, Rugeiyamu (2024) examined the effectiveness of outsourcing waste management to community-based organizations (CBOs) by local governments. The results showed that this approach provides economic benefits to both parties but still faces challenges such as inadequate infrastructure and low community awareness. This study highlights the importance of government support and capacity building of CBOs to achieve sustainable waste management.

Source-based waste management is the main strategy initiated by the Bali Provincial Government through Governor Regulation No. 47 of 2019 concerning Source-Based Waste Management. This approach emphasizes the principle of reducing waste from its source, community participation, and the application of the circular economy concept (Purwanto & Prasetyo, 2021). However, its implementation has not been optimal. There are still obstacles to coordination between institutions and minimum public awareness.

In a global context, the circular economy approach has been recognized as an effective solution in waste management. According to a study by Purwanto and Prasetyo (2021), the integration of the circular economy concept in waste management can reduce waste and increase resource efficiency. However, the implementation of this concept requires strong policy support and active participation from various stakeholders.

Based on the above explanation, it is important to explore the implementation model of effective source-based waste management policies in Indonesia, focusing on a case study in Bali. This study is expected to contribute to understanding the dynamics of policy implementation and offer recommendations to improve the effectiveness of waste management in major tourist destinations such as Bali.

The researcher is interested in taking a case study in Taro Village, Tegallalang District because this village has had an initial initiative in managing waste even before receiving 3R WPS assistance. However, the effectiveness of the management carried out still shows various challenges, so it is important to examine how the implementation of this policy takes place in practice.

Research Problems

1. How is the implementation of source-based waste management through the 3R WPS program in Taro Village, Tegallalang District, Gianyar Regency?
2. What factors support and inhibit the implementation of this policy?
3. What is the ideal implementation model for source-based waste management in tourist destinations such as Bali?

Research Objectives

1. To describe and analyze the implementation of source-based waste management policy through the 3R WPS program in Taro Village.
2. To identify the factors that support and inhibit the implementation of the policy.

3. To formulate a contextual and applicative implementation model for source-based waste management for tourism areas.

Theoretical Review

Policy implementation is a crucial stage in the public policy cycle. According to Mubarak, Baharuddin, and Yulianti (2020), the success of policy implementation is greatly influenced by three main dimensions, namely: policy content, implementation context, and implementation process. These three components are interrelated and act as indicators to evaluate the effectiveness of policies at the local level. "*Policy implementation can be said to be effective if it can transform into concrete practices through adaptation to local contexts, actor participation, and institutional capacity*" (Mubarak et al., 2020, p. 33). Furthermore, Syahrul Mubarak (2020) developed a theory of policy implementation that emphasizes the existence of **three main elements**, namely:

1. Policy Content

This element is related to the substance of the policy being implemented. Mubarak emphasized that the content of the policy must: Have clear and measurable goals and objectives; Be operational in the form of real programs and activities; Have a strong and relevant legal basis; and Include incentive and sanction instruments.

2. Policy Context

This element includes the environment in which the policy is implemented, both internal and external. Factors in the context of implementation include: Local bureaucratic structure and institutional capacity; Local culture and community values; Political support and other related policies and resources (human, financial, technology)

3. Policy Process

Mubarak said that implementation does not stop at "technical implementation", but must include: Socialization and internalization of policies; Coordination between implementers (horizontal and vertical); Continuous monitoring and evaluation as well as the existence of space for community participation.

In classical and contemporary literature, two dominant approaches have emerged: **top-down** and **bottom-up approaches**. **Top-down** approaches emphasize the importance of clarity of objectives, resources, and control from the top level. In contrast, bottom-up approaches emphasize the importance of local flexibility, field implementer discretion, and complex socio-political contexts (Howlett, Ramesh, & Perl, 2020).

Table: Review of Top-Down and Bottom-Up Model Comparison

Aspect	Top-Down	Bottom-Up
Implementation Direction	From the central to field executor	From the field executor to the policymaker
Focus	Obedience to the policy	Adaptation to local context
Participation	Low	High

Flexibility	Low	High
Main Strength	Control and evaluation	Innovation and responsive to the locality
Main Weakness	Not adaptive to the local condition	Lack of coordination and consistency

In the context of Taro Village, the combination of these two approaches is visible. The provincial government provides regulations through Governor Regulation No. 47 of 2019 (top-down), but its success is highly dependent on community participation and local adaptation (bottom-up). The Bottom-up Model (Elmore, 1980) emphasizes the role of local actors (community leaders, NGOs, village communities) in policy implementation.

The policy implementation model developed by Donald S. Van Meter and Carl E. Van Horn in 1975 provides a conceptual framework for understanding how public policies are implemented and the factors that influence their effectiveness. In their article entitled "The Policy Implementation Process: A Conceptual Framework," Van Meter and Van Horn identify six main variables that influence the policy implementation process as follows:

1. **Policy Standards and Objectives:** This variable refers to the clarity and consistency of the standards and objectives set out in the policy. The success of implementation depends largely on how clear and measurable the objectives are so that policy implementers understand exactly what is expected.
2. **Resources:** Policy implementation requires adequate resources, including funds, manpower, and infrastructure. The availability of these resources determines the extent to which policies can be implemented effectively.
3. **Inter-Organizational Communication and Enforcement Activities:** The effectiveness of implementation is influenced by the quality of communication and coordination between the various organizations involved. Good communication ensures that all parties understand their roles and responsibilities in the implementation process.
4. **Characteristics of the Implementing Agencies:** The structure, culture, and capabilities of the implementing organization influence how policies are implemented. Factors such as staff competence, organizational flexibility, and previous experience play an important role in successful implementation.
5. **Economic, Social, and Political Conditions:** The external environment, including the economic situation, social dynamics, and political climate, can support or hinder the implementation process. For example, strong political support can facilitate implementation, while poor economic conditions may be an obstacle.
6. **Disposition of Implementers:** The attitudes and perceptions of individuals involved in the implementation of the policy greatly influence the outcome. If implementers support and understand the importance of the policy, they tend to be more committed to its implementation.

Van Meter and Van Horn emphasize that the interaction between these six variables determines the effectiveness of policy implementation. They also emphasize the importance of a systematic approach in analyzing the implementation process to identify areas for improvement.

Mazmanian and Sabatier (1983) highlight three main dimensions of successful implementation clarity of objectives and policy structure, capacity of policy implementers, and political commitment and support.

Grindle's theory (1980) suggests that the success of policy implementation is influenced by two main factors namely:

1. **Content of Policy:** Clarity of purpose, benefits received, and the extent of desired change.
2. **Context of Implementation:** The social, political, and economic environment, as well as the characteristics of the institutions and actors involved.

Research by Adnyana et al. (2023) used the Grindle framework to analyze the implementation of source-based waste management policies in Penatih Daging Puri Village, Bali and found that communication, resources, and bureaucratic structures were the main obstacles in implementing the policy. Circular Economy Concept in Waste Management, Circular economy is an approach that emphasizes the reduction, reuse, and recycling of materials to create a regenerative system. In the context of waste management, this concept aims to minimize waste and maximize the value of existing resources. Muliarta (2023) in his research highlighted the importance of implementing a circular economy in source-based waste management in Bali, emphasizing the role of local communities in supporting sustainable management systems.

Research Method

This study uses a **descriptive qualitative** approach. This approach aims to deeply understand the process of environmental governance transformation through the implementation of source-based waste management policies at the village level. According to Creswell (2016), a qualitative approach is used to explore and understand the meaning derived from participants' views on a social phenomenon or problem.

This type of research is descriptive because it focuses on a detailed explanation of the context, actors, processes, and dynamics of policy implementation in Taro Village. Informants were determined through **purposive sampling** techniques, namely selecting individuals or groups based on certain considerations that are relevant to the focus of the study (Miles, Huberman & Saldaña, 2014).

Informants in this study included Village Heads and village officials, 3R WPS or waste bank managers, community and customary leaders, representatives of service users, and representatives of the Gianyar Regency Environmental Office. Data collection techniques were carried out through in-depth interviews, participatory observation, and documentation studies in which the data were analyzed using the **thematic analysis** approach as stated by Braun & Clarke (2006)

Research Finding and Discussion

Research conducted in Taro Village, Tegallalang District, Gianyar Regency, shows that the implementation of source-based waste management policies has been running, but has not been fully optimal. The research uses Mubarak's Theory (2020), which develops a policy implementation approach into five main components: (1) Policy clarity, (2) Policy

communication, (3) Supporting resources, (4) Implementer commitment, and (5) Environmental support.

1. **Policy clarity**

Bali Governor Regulation No. 47 of 2019 has provided clear direction on source-based waste management. However, at the village level, there are still limitations in understanding the substance of the regulation.

2. **Policy Communication**

Socialization by the local government to the community and managers of 3R WPS Taro Village is quite active but is still sectoral and has not reached all levels of society.

3. **Supporting resources**

Taro Village received funds to optimize 3R WPS but still faces obstacles in terms of human resources, processing technology, and an efficient waste transportation system.

4. **Implementer commitment**

The performance of the 3R WPS managers is quite good, driven by the local spirit and cultural values of cooperation. However, not all village officials are active in supporting this program as a whole.

5. **Environmental support**

Support from the community is quite high, especially from traditional leaders and community self-help groups. However, littering behavior is still found in several areas.

Based on Mubarak's Theory, the success of policy implementation is highly dependent on the synergy between implementing elements and social environmental conditions. Taro Village shows semi-participatory characteristics, where community participation is quite visible, but has not fully become a culture. The policy communication process has not been designed systematically and sustainably, resulting in an information gap. Technical and managerial resources still need to be improved.

This finding is in line with **Winarno's research** (2021) which emphasizes the importance of local understanding in managing environmental-based public policies. In addition, there is a correlation between the intensity of socialization and the level of public awareness of waste management behavior.

Conclusion

The implementation model of source-based waste management policy in Taro Village shows that success is highly dependent on collaboration between formal structures and local wisdom. Although the policy is in place, its implementation still faces structural, technical, and cultural barriers.

Suggestion

1. Intensive training is needed for 3R WPS managers regarding waste management and technology utilization.
2. Regulations at the village level need to be strengthened in the form of Village Regulations regarding sanctions and incentives for waste management.
3. Continuous socialization must be carried out with a local cultural approach.

Recommendation

1. Local governments need to develop a digital-based monitoring dashboard to detect village waste management performance in real time.
2. There needs to be involvement of universities as partners in the research and development of waste management technology innovations.
3. CSR support from tourism business actors must be facilitated to support 3R WPS activities.

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