

## **Waste Management Strategy at Alak Final Processing Site (TPA) in Realizing Sustainable Development Goals (SDGs)**

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### **Abstract**

*This research aims to evaluate existing waste management and formulate strategies for waste management that can be implemented used in realizing SDGs based on current conditions at the Alak Final Processing Site (TPA) which is the only TPA used to accommodate waste from all areas of the city of Kupang. The method used in this research is qualitative by conducting direct interviews and observations to collect data and information and then analyzed using the SWOT analysis tool to identify strengths, weaknesses, opportunities and threats. The results of the SWOT - IFAS analysis show that the strength factors get a total score of 1.6 and the weaknesses factors get a total score of 2.91 with a score difference of -1.31. This means that the weakness factor is greater than the strength factor. Meanwhile, the EFAS table shows that the opportunity factor gets a score of 2.34 and the threat factor gets a total score of 1.42 with a score difference of 0.92. This means that opportunities related to the development of TPA Alak can be maximized to reduce existing threats.*

**Keywords : Strategy, SWOT, Sustainable Development Goals (SGDs)**

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## **INTRODUCTION**

Indonesia is a country with a population as of December 30, 2021, an increase of 2,529,861 people compared to 2020 to 273 million people and the 4th largest in the world after China, India and America ([https://dukcapil.kemendagri . go.id/](https://dukcapil.kemendagri.go.id/)). The large population has an effect on the amount of waste produced. Industrial and technological developments can also have negative impacts, one of which is increasing the volume, type and characteristics of increasingly diverse waste. Environmental problems in the context of waste also occur in the city of Kupang. The waste production in Kupang City is very high, 86 tons per day (*Victory news 12 April 2022*) . Handling the waste problem is not easy, population growth is accompanied by increasing levels of consumption which is not comparable to the availability of sufficient landfill space for operation and processing of waste, mobilization of transport vehicles and limited supporting facilities for conventional waste processing. The Final Processing Site (TPA) in Alak District was built in 1997 and started operating in 1998 as the main solid waste facility in Kupang City. TPA Alak has an area of 9.14 Ha. The distance to TPA Alak from the city center is  $\pm$  16 Km. With waste production in 2018 reaching 100 tons/day and increasing to 200 tons/day in the rainy season. Along the way, waste processing activities at the Alak TPA site will definitely have an impact on the surrounding environment. To anticipate problems in the future due to the existence of the TPA, the area around the TPA needs to be designed with a basic concept based on the impact conditions of the TPA. Based on the results of a study of potentials and problems at TPA Alak and its surroundings, impacts were identified focused on the TPA operational stage on aspects of workforce mobilization, operation of *leachate processing buildings* (BPL). By looking at the current waste management at the Alak TPA, it is hoped that it will become a future concept to be applied in waste management in Kupang so that it can contribute to achieving the SDGs.

## RESEARCH METHODS

This study uses a qualitative approach, namely to explain what strategies can be used for waste management in realizing sustainable development or Sustainable Development Goals (SDGs). This research uses primary and secondary data sources using the following data collection methods:

1. Library Research (liberary research), this research activity is carried out based on literature review that is relevant to this research through the study of theories and concepts from sources of scientific books, reference books, journals and documents related to the scope of research as a basis for thought and discussion.
2. Field research (field work research) is research conducted directly in the field using several techniques, namely:
  - a. Observation, namely direct observation at the research location to obtain data.
  - b. Interview, namely the collection of data obtained through a question and answer process with informants who are considered to have a direct relationship with the focus of this research.
  - c. Document data in the form of photos, drawings, maps, SOPs and other records that support this research.

## RESULTS AND DISCUSSION

### Internal Factor Analysis

Internal factors are entered into a matrix which can be called the internal strategy factor matrix or IFAS (Internal Factor Analysis Summary).

Table 1. IFAS Weights, Ratings and Scores

Internal Strategy Factors	Weight	Rating	Score = (weight x Rating)
<b>Strength</b>			
1. Availability of Local Regulations 2011 on Waste Management	0,2	5	1
2. Availability of waste management SOP and its implementation by the Department of Environment and hygiene	0,2	4	0,2
3. Location of the landfill away from settlements	0,1	4	0,4
<b>Total Strength</b>			1,6
<b>Weakness</b>			
1. Limited budget allocation for the Kupang city government for TPA development	0,18	5	0,9
2. Facilities and infrastructure (heavy equipment) as media for destroying waste have not been maximized because their economic value has run out	0,09	4	0,36
3. 3. The technology for separating dry and wet waste is not yet available.	0,09	4	0,36
4. There is no pool for trash cars yet	0,05	4	0,2
5. The low productivity of human resources in TPA is due to age	0,1	4	0,4
6. 6. Low utilization of waste for economic value	0,05	3	0,15
<b>Total Weaknesses</b>			2,91

From table 1 above, it can be explained that the highest strength value is in the regulatory & policy items contained in the Kupang City Regional Regulation No. 3 and 4 of 2011 concerning the Management of Household Waste and Household-like Waste with a score of 1 and a weight of 0.2, while the biggest weakness is in the budget allocation item which is still very limited for waste management at TPA with a score of 0.9 and a weight of 0.18. This shows that the Government of the City of Kupang has established Regulations and Policies related to waste management as a priority to be implemented for the people of Kupang City and its surroundings, but if further explored that these policies are not supported by sufficient budget allocations to support priority programs in waste management, especially in Alak landfill.

### External Factor Analysis

External factors are entered into a matrix called the EFAS external factor strategy matrix (External Factor Analysis Summary).

Table 2. EFAS weights, ratings and scores

External Strategy Factors	Weight	Ratings	Score = Weight x Rating
<b>Opportunity</b>			
4. Availability of central government funds for TPA development	0,2	4	0,8
5. Availability of a waste management technology plan	0,15	3	0,45
6. The involvement of the sub-district government for waste management at the TPA area level	0,18	3	0,54
7. CSR funds are planned to be included in the regional regulations of the City of Kupang	0,1	3	0,3
8. Availability of land for landfill expansion and development	0,05	5	0,25
Total opportunity			2,34
<b>Threat</b>			
7. Population and waste production increase	0,2	5	1
8. Low knowledge and participation of the people of Kupang City in household waste management.	0,04	3	0,12
9. Open access for scavengers and animals at the landfill site	0,06	4	0,24
10. Openness of access and information for the garbage mafia	0,02	3	0,06
Total Threat			1,42

From table 2 above it can be explained that the highest opportunity value is in the availability of funds/budget from the central government for TPA development with a score of 0.8 and a weight of 0.2. Meanwhile, the biggest threat lies in the increasing population and waste production caused by consumption by households and business units. This means that the Government of Kupang City can take advantage of financial assistance from the central government for the development and management of TPA more effectively so as to minimize the problem of accumulation of waste at the TPA location.

## CONCLUSION

The Alak Final Processing Site (TPA) is an asset owned by the Government of the city of Kupang and the only TPA for all waste from the city of Kupang and its surroundings which until now has not received an adequate budget allocation so that the condition of the TPA is increasingly apprehensive because it does not have the availability and feasibility of facilities and infrastructure. infrastructure for waste management that is in accordance with procedures and has economic value. The leading strategy for waste management at TPA Alak is to take advantage of existing weaknesses and optimize opportunities, namely through participatory-based Regional Government Budgeting for waste management and improving the quality of human resources so that they are competent in waste management with economic value and can maximize the budget from Central Government assistance and CSR funds for provision of facilities and markets so as to minimize the population and production of waste in the community and avoid accumulation of waste at the landfill site.

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