

## **Plastic Waste Management through the Role of Leadership Adaptation of Environmental Inspected Habits**

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### **Abstract**

The research method is qualitative with phenomenological approach. The research design using one site involving Banjarmasin City in South Kalimantan, Indonesia. Data collection techniques used were content analysis, participatory observation and depth interviews. The analysis used in answering this research is a combination of various analytical methods to answer each of the objectives namely miles & Huberman analysis and Webbed Spider Model Analysis as the ultimate in formulating management of plastic waste through a leadership role. The results of this research found that the adaptation of environmentally sound habits in minimizing the production of plastics waste through local wisdom approaches and changing the people's mindset to live healthier. The purpose of writing this paper is to provide examples of new habits of healthy living by starting to reduce the use of plastic bags as the main source of waste generation that is not easily biodegradable in Banjarmasin City produced in every city anywhere and is a major problem of environmental damage, including Banjarmasin City as a city of a thousand rivers, south Kalimantan Province. Effort to reduce the use of plastic bags began in stages, starting with modern retailers in the City of Banjarmasin. Through a leadership role based on local wisdom and a persuasive approach that is environmentally sound, it can provide solutions in current and future waste management. Result from this research is Banjarmasin as the first City in Indonesia implemented regulation to reduction of plastic waste for modern retailers which are widely scattered throughout the City, sub-districts and villages. This is effective through regulation and direct approach to society. In the waste

management that is carried out in the City of Banjarmasin includes waste reduction activities with ten activities and waste handling through five activities. As a substitute for these plastic bags, plastic bag producers are forced to use environmentally friendly plastic bags and / or purun baskets which are products of local wisdom of the people of South Kalimantan, Indonesia, all of these activities are carried out by involving the community by applying the rules without sanctions. Until this paper was written, there has never been a leader with leadership who has implemented a similar regulation as a direct effort from the role of a leader in reducing the use of plastic bags, where the use of plastic bags is the biggest contributor as a source of producing plastic waste.

## **Keywords**

Reduction of Plastics Waste, Regulation, Leadership Role.

## **Introduction**

Garbage in any part of the world will certainly be found as long as there are living things living there, whether in the form of organic, inorganic or specifically a problem in the world and Indonesia today is plastic waste, which is waste whose decomposition time to nature takes an unpredictable amount of time. Long to decompose, it could be 50 years, 100 years or more. What is the state of the art is the amount of plastic waste that continues to increase day by day and has reached a point that is quite alarming, so it is necessary to immediately find a solution to overcome it. The city of Banjarmasin is known as the City of a Thousand Rivers, has an area of approximately 98.46 km<sup>2</sup>, with five Districts and 52 Sub-Districts, all of which are deltas or ± 25 small islands (deltas) separated by rivers.

Banjarmasin is crossed by 2 large rivers, namely the Barito River and the Martapura River. It is noted that the city of Banjarmasin has 190 rivers. However that was recorded Active there are 102 rivers while 70 rivers others have not been named. It is on Caused because part of the river is closed for various reasons. (Kalselpedia, 2019) Total population of Banjarmasin City based on sources Population projection for 2010-2020, Bappenas and BPS, in 2019 is 708,606 people, with a density of 7,118.32 people per km<sup>2</sup> Banjarmasin metropolitan area namely Banjar Bakula has a population of about 1.9 million people. Of these assumptions municipal solid waste generation per person per day is 0.7 kg.



**Figure 1 Regional Map of Banjarmasin City**

From the amount recorded in the Environmental Office of the City of Banjarmasin, the generation of waste from the City of Banjarmasin in 2019 is equal to  $\pm 496$  Tons / day. With a comparison between the area and the population in the city of Banjarmasin, waste is the main problem for the environment in this city of a thousand rivers.

## **Research Methods**

The method used in this research is single site data analysis using a qualitative phenomenology approach. This research is located in Banjarmasin City, South Kalimantan Province, Indonesia. The research was conducted from June to July 2020 for two months. The data source consists of primary data obtained through in-depth interviews and participant observation. Secondary data is in the form of documents that support the research. In qualitative research, the selection of research subjects used criterias based selection (Muhadjir, 1993; Fossile et al., 2020; Shao et al., 2020; Abdel-Basset et al., 2021), which is based on the assumption that the subject is the main actor in the theme of the research being implemented. In this study, the determination of informants using the Snow Ball model adjusts the information needs needed during the research process, because this method is used to expand the research subject. Another thing that must be known in this research is that the reason for selecting informants is based more on the quality of the information needed related to the theme of the research being carried out. In connection with these criteria in accordance with the research objectives, the selection of informants was carried out purposively to direct data

collection according to the needs through selection and selection of informants who really mastered information and research problems in depth and could be trusted to be a solid source of data. Another thing that must be known in this research is that the reason for selecting informants is based more on the quality of the information needed related to the theme of the research being carried out. In connection with these criteria in accordance with the research objectives, the selection of informants was carried out purposively to direct data collection according to the needs through selection and selection of informants who really mastered information and research problems in depth and could be trusted to be a solid source of data. Another thing that must be known in this study is that the reason for selecting informants is based more on the quality of the information needed related to the theme of the research being carried out. In connection with these criteria in accordance with the research objectives, the selection of informants was carried out purposively to direct data collection according to the needs through selection and selection of informants who really mastered information and research problems in depth and could be trusted to be a solid source of data.

**Table 1 Research Informants**

	Informant	Type of Data
Mayor's office	Mayor	Primary
Department of the LH	Secretary	Primary
Department of the LH	Head	Primary
Department of the LH	Head	Primary
LH Task Force	Member	Primary
Public	citizens	Primary
Total	6 people	

The data analysis used was the Miles and Huberman analysis combined with the Webbed spider analysis to describe the findings in the field during the research process. The analysis process is carried out simultaneously with the research data collection process so that any lack of information can be immediately identified.

## **Results and Discussion**

The research findings show that the variation in the composition of waste produced by the city of Banjarmasin is of various types of origin from the river flow, household waste of the people of Banjarmasin City itself, and waste from industry and trade. Based on the composition of waste produced by the city of Banjarmasin in detail can be seen in the table below:

**Table 2 The composition of waste in Banjarmasin City 2013 and 2018**

No.	Garbage Composition	Average (%)	No.	Garbage Composition	Average (%)
1.	Wet garbage	59.4	1.	Wet garbage	55.89
2.	Leather / rubber	0.2	2.	Leather / rubber	1.63
3.	Glass / Ceramics	5.7	3.	Glass / Ceramics	2.71
4.	Metal	0.5	4.	Metal	1.36
<b>5.</b>	<b>Plastic</b>	<b>15.1</b>	<b>5.</b>	<b>Plastic</b>	<b>12.77</b>
6.	Paper	12.4	6.	Paper	9.39
7.	wood	0.1	7.	wood	0.64
8.	Textiles	0.2	8.	Textiles	14.93
9.	Other		9.	Other	0.68

Source: Banjarmasin City DLH 2019

Table 2 above shows that there has been a reduction in plastic waste from 2013 to 2018 reaching 2.33% with an average reduction of 0.46% per year, this has happened since the implementation of regulations on solid waste management in Banjarmasin City. This is the focus of the problem in this paper which is illustrated in a research question, namely What is the role of leadership in environmentally sound waste management in the city of Banjarmasin? So as to be able to reduce / decrease the amount of plastic waste produced annually by the City of Banjarmasin as the problem formulation of this paper. Meanwhile, the purpose of this study is to analyze the role of leadership in waste management, especially plastic waste in the city of Banjarmasin so that it can become a pilot city for other cities / regencies in Indonesia or the world. The state of the art from this study is the result of a review of previous studies such as how the role of leadership is in managing its citizens. The construction industry is considered dominant in mobilizing society for sustainable development within an international framework. As a result of a theoretical perspective, this study extends leadership competencies as a hierarchical, reflective construct to the eight components involved. The state of the art from this study is the result of a review of previous studies such as how the role of leadership is in managing its citizens. The construction industry is considered dominant in mobilizing society for sustainable development within an international framework. As a result of a theoretical perspective, this study extends leadership competencies as a hierarchical, reflective construct to the eight components involved. The state of the art from this study is the result of a review of previous studies such as how the role of leadership in managing its citizens. The construction industry is considered dominant in mobilizing society for sustainable development within an international framework. As a result of a theoretical perspective, this study extends leadership competencies as a hierarchical, reflective construct to the eight components involved. (Heimann et al., 2019). Currently organizations need to increase knowledge about the environment and make a broader

organization its developmental ability to survive and improve environmental quality, in these conditions the role of leaders who guide the organization, identify environmental needs and facilitate appropriate development, is very important. The fact is that organizations are created to achieve specific goals. (Golmoradi & Ardabili, 2016). During the implementation of data collection in the field through key informants, supporting documents were found related to the legal basis so that Banjarmasin, through its leadership role, was able to make changes to the habit of adapting to environmentally sound habits in society, the legal basis includes:

Law No. 8 of 2008 concerning Waste Management

1. Regional Regulation No. 21 of 2011 concerning Cleanliness / Gardening Waste Management
2. Mayor Regulation No. 18 of 2016 concerning Reduction of Plastic Bags
3. Mayor Regulation No. 60 of 2018 concerning City Policies and Strategies in Management of Household Waste and Waste Similar to Household Waste
4. Circular Number 660.01 / 1364-KPS / DLH / XII / 2017 Concerning the Obligations of ASN to Become Waste Bank Customers
5. Circular Number 660.01 / 1365-KPS / DLH / XII / 2017 Concerning Appeals to Reduce the Use of Plastic Bags in Schools.

Waste management in Banjarmasin City includes reduction and handling activities including:

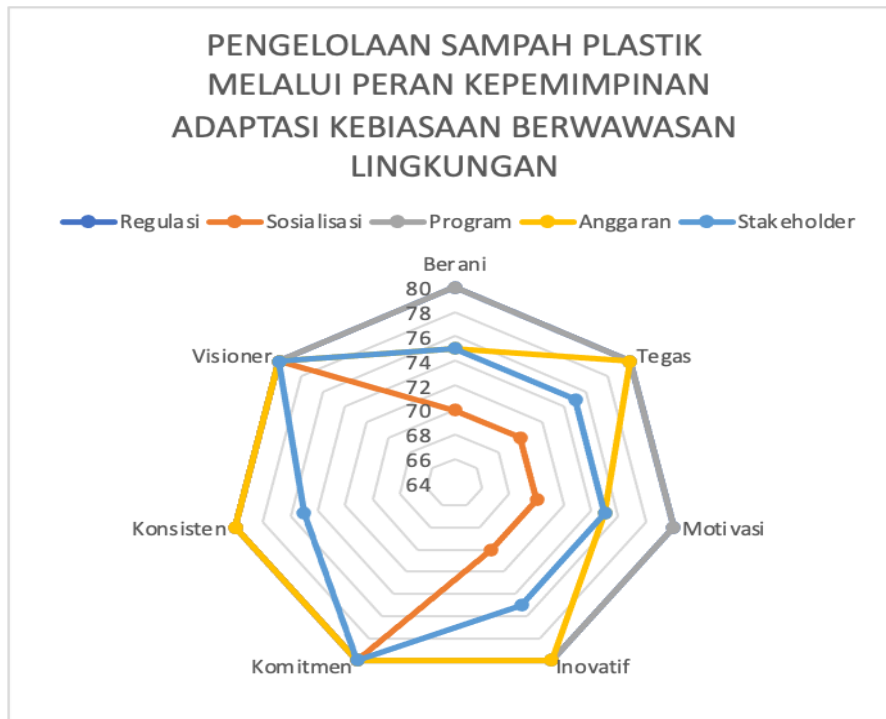
### **Subtraction**

- a. Improvement of community-based 3R TPS, Establishment and Development of unit waste bank and main waste bank.
- b. Socialization of Waste Reduction, Reduction of Plastic Bags in Retail / Modern Stores.
- c. Dissemination of Education to schools about Adiwiyata Program, Activity of 5000 Bakul to replace Bags Plastic, 1000 Tumbler Movement, Garbage Alms, Cool ojol without plastic, Sort the waste from the source.

## **Handling**

- a. Collection (TPS / TPS Residu / TPST 3R), Transportation (TPS / TPS Residue / TPST 3R), Final processing and composting at TPA, Catching methane gas at TPA, Recovery plastic by scavengers at TPA.
- b. IPAL Banjarmasin is the only city that has waste water management facilities in South Kalimantan.

Other research findings raised regarding facilities and infrastructure related to waste management in Banjarmasin City in an effort to reduce plastic waste include: 113 TPS, 11 TPS 3R, 3 TPST 3R, 276 Garbage Banks, 1 Garbage House, 1 Cacah House, 1 TPA and 124 fleets garbage transport. The results obtained from this study based on the results of interviews, participant observation and document analysis show that there is a change (reduction in plastic waste) in Banjarmasin City that has decreased from year to year. From the results of the analysis of research findings, the Banjarmasin City government carried out massive activities to reduce plastic waste, which was initiated by the Banjarmasin City Leader, in this case the Mayor of Banjarmasin, Mr. H. Ibnu Sina, supported by team work from the Banjarmasin City Environmental Service. Spider webbed analysis shows that waste management in Banjarmasin City is inseparable from the role of the leader through the activities of making, setting and implementing regulations, socialization, compiling programs, budget support and establishing good communication and partnerships with stakeholders in carrying out waste management in Banjarmasin City and supported by the nature Leadership that is courageous, decisive, caring, motivated, innovative, committed, visionary and consistent in implementing environmental regulations, especially those related to waste management, this is in line with the results of previous research on the role of leadership which greatly affects the success and smoothness of an activity / program applied to a community. Since the implementation of regulations in the form of Banjarmasin Mayor Regulation Number 60 of 2016 concerning Reduction of Plastic Bags, Circular Number 660.01 / 1364-KPS / DLH / XII / 2017 Regarding ASN's obligations to become Waste Bank customers, Circular Letter Number 660.01 / 1365-KPS / DLH / XII / 2017 concerning the appeal to reduce the use of plastic bags in schools, and Mayor Regulation Number 60 of 2018 concerning city policies and strategies in managing household waste and household-like waste. In the end, Banjarmasin was able to become the first pilot city in Indonesia in reducing the use of plastic bags.



In line with statements about transformational leadership more like visionary leadership, where leaders motivate employees to act beyond certain expectations (Hater and Bass, 1988; Doucet, Fredette, Simard, and Tremblay, 2015). A transformational leader usually leads his employees by giving them a vision. He is more of a charismatic leader and tries to inspire people through his vision and charisma (Asrar-ul-Haq & Kuchinke, 2016). The relationship between convergent and divergent thinking and the structuring of leadership styles shows that leadership is a behavior characterized by task orientation and attention to follower work effectiveness which requires logical and rational thinking, as well as constant initiatives for innovation and implementation of the complexity of leadership situations requiring skills in evaluating various factors in the long term. Short and long term and in anticipating and assessing the consequences of a decision. (Bajcar et al., 2015).

## **Conclusion**

The role of leadership in regulation, program socialization, budget and stakeholders in this study makes Banjarmasin a pilot model for reducing the use of plastic waste at the district / city level in Indonesia. With the method of in-depth interviews, observation and document analysis. The conclusions of this study are; that efforts to reduce plastic waste will have a huge impact on environmental sustainability. Not using plastic bags anymore. When shopping is an adaptation of new environmentally friendly habits that are not easy



to start. Banjarmasin with a courageous leadership so as to be able to implement it and has become a habit of the people of Banjarmasin city every time they shop to bring baskets as a substitute for plastic bags. The use of purun baskets has turned out to be a special attraction, because it does not only provide for local people but also becomes an opportunity to meet the demands of other regions, such as the 5000 purun baskets requested by the Ministry of Environment and Forestry in Jakarta per year. In implementing plastic waste management, especially for activities to reduce plastic waste, it requires the role of leaders who are brave, caring, responsive to environmental issues, quick in making decisions, courageous, firm, committed and consistent with the regulations they make to be implemented and monitored for their progress and sustainability. The city of Banjarmasin is the first city in Indonesia to successfully implement regulations through the official number 18 of 2016 concerning the prohibition of using plastic bags (shopping bags) made of environmentally unfriendly plastics in modern retailers in the city of Banjarmasin which has been able to reduce plastic waste by up to + / - 5% of the total 15% plastic waste per day produced from 600 tonnes / day in 2020. This is an extraordinary achievement for a leader who carries out his leadership function not only with rules but also with heart through concern for environmental sustainability and the quality of society. The people of the city of Banjarmasin have changed their mindset to accept reducing the use of plastic bags every time they shop at modern retails, and now it has penetrated to traditional markets. Management of plastic waste through a leadership role is an adaptation of environmentally sound habits for the people of Banjarmasin City in overcoming the problem of plastic waste that is always produced by communities with dense populations.

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