



Community-Based Waste Management in Tabalong Regency

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ABSTRACT

One of the global challenges is the increasing amount of waste generation. In Indonesia, there is an average increase in waste of around 7.02% after a year. Efforts to reduce waste generation are a very important issue. The impact of waste generation can reduce environmental quality and even have a bad impact on health. The Tabalong Regency Government is one of the districts that seek to overcome the waste problem, changing the paradigm of waste management by issuing local regulations regarding waste management is a step that is trying to be implemented. The research was conducted in Tabalong Regency, South Kalimantan Province, using a descriptive qualitative approach and to analyze the phenomena that occurred then analyze them using an interactive model to find an analysis of community-based waste management in Tabalong Regency. The research was conducted by interviewing the Head of the Tabalong Environmental Service with a dissertation of supporting documents accessed through the National Waste Management System page. Based on the results of the study, it was found that the Tabalong Regency government has committed to waste management to support national waste management policies to reduce waste generation. The commitment of the Tabalong Regency Government is contained in Regional Regulation Number 14 of 2017 concerning Waste Management with an emphasis on community participation as an effort to reduce waste from the source. The Waste Bank and TPS 3R programs involve community participation in waste management.

INTRODUCTION

One of the challenges that arise in creating a healthy environment is fighting the growth of waste that continues to grow massively (Addahlawi et al., 2020). The more citizens, the more waste burden it causes. People's lifestyles indirectly lead to an increase in the amount of waste generation (Kinnares & Nakawajana, 2017). People's lifestyles are increasingly varied, coupled with the increasing ability of the economy to change people's lifestyles. The burden of waste generation also causes environmental and public health problems (Ahsan et al., 2012). Responding to global challenges related to the waste problem gave rise to a concept known as the Sustainable Development Goals, especially the 12th goal, namely responsible consumption and production.

Waste results from all kinds of human activities, including natural processes that are no longer used. The term waste causes a sense of unwillingness to manage because it means residue and can no longer be used. The main actors in waste management have been siding with the government as a servant of the community. Therefore, what happens is that the government is finally overwhelmed with managing waste, the number of which is constantly increasing.

The increasing trend of waste generation in Indonesia shows an increasing number every year. In Figure 1. There has been an increase in the waste generation that has occurred over the past three years. Although in 2021 the amount of waste generation that appears has decreased from 2020, namely 31,391,090.95 tons or a decrease of 912,000 tons from 2020 amounting to 32,303,098.28 tons. However, in general, for the length of the 2019-2021 period, waste generation has increased by 7.02% per year. The increase

in the waste generation that occurs requires countermeasures so that there is a downward trend in waste generation, one of which is by involving the community to reduce waste from the source.

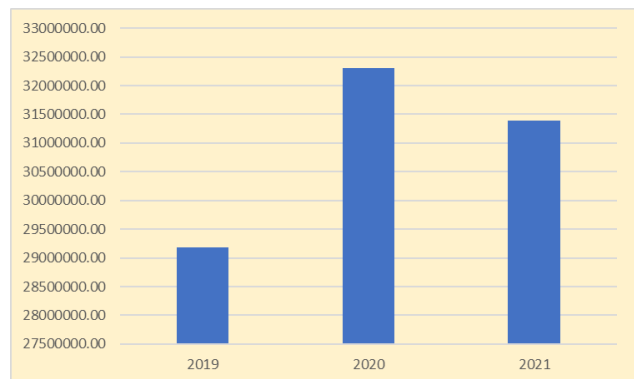


Figure 1. Increasing Trend of Waste Generation in Indonesia in 2019-2021

Source: SIPSN, 2022

The paradigm pattern of waste management with the concept of collect-transport-waste is no longer reliable because it causes a negative impact on landfills (TPA) later (Mulyadi et al., 2012). The increase in the amount of waste generation that occurs shows that waste management should use a new paradigm. A paradigm shift in waste management is needed. This creates a confusing concept with 3R (reduce, reuse, and recycle).

In practice, governments will find it difficult if only they apply the concept. This causes the burden of waste services to be heavier from year to year. In addition, the ability to fund the regions did not show a significant increase, especially in the

waste sector. For waste management to be carried out sustainably, efforts are needed to reduce the generation of waste generated by the community. Therefore, community participation in waste management is needed today. And this is in line with this article which aims to analyze community-based waste management in Tabalong Regency so that it can enrich the study on community participation in waste management and become input for the Tabalong Regency Government.

Tabalong Regency is one of the regencies in South Kalimantan province. Located in the northernmost position, it is directly adjacent to the provinces of East Kalimantan and Central Kalimantan. As one of the areas that have the potential for natural resources, it attracts many immigrant communities to pit fate. Population growth continues to increase, and this also plays a role in increasing the amount of waste generation as written by Tanuwijaya (2016).

The Environmental Agency (DLH) of Tabalong Regency, is a government agency that carries out tasks related to waste problems. Through this program, DLH is committed to achieving national waste reduction and waste management targets. The program created and run today is a community-based program, which emphasizes community participation in its implementation.

The participation approach focus on community-based waste management. In research (Bachtiar, 2014) community participation has a positive impact on waste management even though there are also inhibitory aspects to participation. In addition, Puspitawati & Rahdriawan (2012) stated that community participation in waste management, has a positive impact on the environment to be clean and healthy, also has an impact on the economic condition of the community, and there is a reduction in the volume of waste disposed of in TPA.

Participation according to Hoofsteede (Hadi, 2015; Naatonis, 2010) is "the taking part in one or more phases of the process" or taking part in one or more processes which in this article is a process in waste management. Research conducted by is highly recommended in environmental management, besides that participation will also involve the community in environmental conflicts that occur. Using the author's participation approach will find novelty in community-based waste management practices in Tabalong Regency that have been run by the Tabalong Government.

METHOD

The method used in this study is a qualitative method using a descriptive qualitative approach. The reason for using qualitative methods is because the phenomena that occur are phenomena that occur in the community, to understand how a community or individuals accept an activity, qualitative methods ensure the research process by interpreting the data found (McCusker & Gunaydin, 2015). The primary data collection method used was direct interviews with key informants, namely the Head of the Tabalong Regency Environmental Service.

Additional secondary data is collected by looking at supporting documents and utilizing the data that has been presented on the www.sipsn.menlhk.go.id website pages. The data obtained were then analyzed using an interactive analysis model (Miles, Matthew B. Huberman, A Michael. Saldana, 2014). Interactive models allow data analysis to be carried out both in the field and after returning from the field. The location of the study is in Tabalong Regency, South Kalimantan province as shown in Figure 2 below:

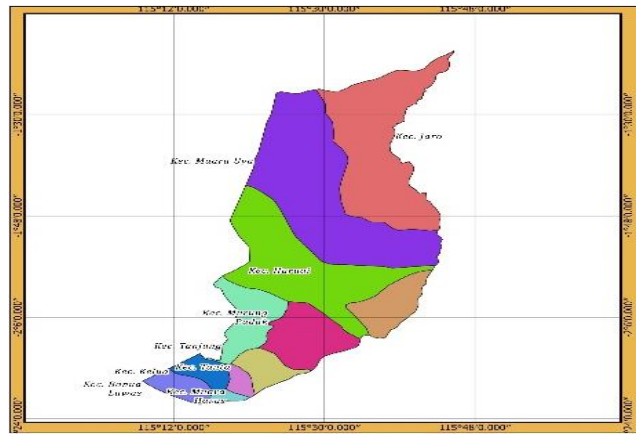


Figure 2. Map of Tabalong District

RESULTS AND DISCUSSION

Government's Commitment to Waste Management

The main basis for waste management in Tabalong Regency is Law Number 18 of 2008 concerning Waste Management. At the Tabalong district level, this law was downgraded to Regional Regulation Number 14 of 2017 concerning the Waste Management of Tabalong Regency. In addition, it is also regulated regarding the levy on waste management as stated in the regional regulation of Tabalong Regency number 13 of 2018 concerning the Levy of Waste Services. As well as efforts to increase the participation of various parties to maintain and improve environmental cleanliness by issuing Tabalong Regent Regulation Number 31 of 2018 concerning Plastic Waste Reduction.

Following what has been done by the Tabalong Regency Government by issuing rules in waste management, it shows that there is a commitment of the Regional Government to managing waste to achieve a Waste-Free Indonesia 2025. Regional Regulation 14 of 2017, regulates the distribution of tasks in waste management. Everyone is a waste producer: the amount will vary according to their respective lifestyles. Based on the informant's statement that the more advanced the lifestyle, the more amount of garbage it produces. Even in what happens to people who have an education, it is more difficult to educate them to manage waste.

In a day, the waste produced is around ±0.7 Kg/person/day with the type of waste mixed (based on the interview results). It is hoped that the local government as a waste producer, the community will participate in managing waste. Meanwhile, in the view of the community, the government is responsible for waste management. Whereas in the law and its derivatives that have been made by the Tabalong District Government, it is clear that each has a duty in managing waste.

Community participation is needed in managing waste because most of the sources of waste come from household waste, most of which is food waste. The amount of waste composition arising in Tabalong Regency in 2021 can be seen in Figure 3.

In Figure 3, it can be seen that the largest composition of waste is sourced from food waste, and the second most is plastic waste. Both types of waste composition are waste caused by households so that in the implementation of waste management must involve the community as the main source of waste generation.

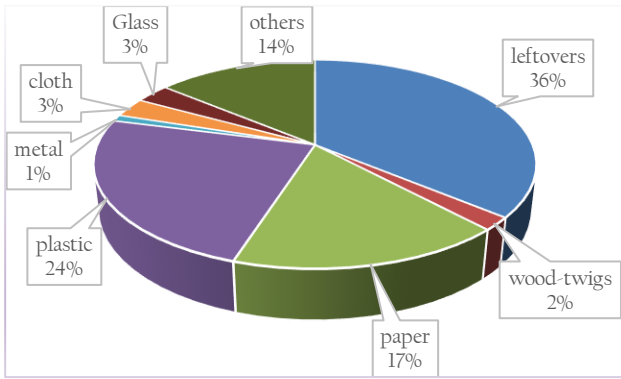


Figure 3. Composition of Tabalong Regency Waste Generation in 2021

Source: SIPSAN, 2022

Regional Regulation Number 14 of 2017 regulates the responsibility of the community as a source of waste generation to manage their waste from sources (individual or group communities) to temporary disposal sites. Furthermore, waste collected in temporary dumps to landfills is the responsibility of the government. That way the existence of a Regional Regulation regulates the responsibility of the government in waste management. The regional government only provides facilitation for waste that has been sorted by the community either individually or in groups. Furthermore, the waste residue is collected at a temporary shelter to be subsequently sent to the Waste Landfill as the final location for garbage disposal.

Referring to Presidential Regulation Number 97 of 2017 concerning National Policies and Strategies for Managing Household Waste and Household Tub Waste, targeting a reduction in household waste and household waste by 30% after handling waste by 70% nationally in 2025. The target for this area is a difficult target to achieve because the target of reducing waste by 30% is how to change the paradigm of waste management. In changing the paradigm of waste management according to informants requires a long time and even requires a long process, here is the informant's statement "Changing the pattern of waste governance takes a long time, even developed countries such as Japan take decades to change the paradigm of waste management. Meanwhile, the target of handling waste of 70% is the responsibility of the government".

The old paradigm shifts in managing waste continue to be pursued by the Tabalong Regency Government in terms of waste reduction. A paradigm shift in waste management will provide benefits, one of which is that the life of the landfill becomes longer, and the operational costs of transporting waste can be saved. So far, operational costs are very expensive because the process between the source of waste to the landfill does not exist. Meanwhile, the operational cost of waste management in the landfill is between Rp. 100,000 -Rp. 300. 000 per ton of garbage. If there are intermediary activities in the process of collecting and transporting garbage, operational costs can be saved.

Table 1. Tabalong Regency Waste Management in 2020 and 2021

Year	Waste Generation (tons/year)	Waste Reduction (tons/year)	Waste Handling (tons/year)	Managed Waste (tons/year)
2020	36,123.17	1,883.93	20,038.50	21,922.43
2021	36,982.53	5,538.73	21,918.25	27,456.98

Source: Tabalong Environment Agency, 2022

Waste management that is expected to be in line with Regional Regulation Number 14 of 2017 is to use the 3R concept (reduce, reuse, recycle). This 3R activity will provide economic benefits for its managers. With this 3R concept, the operational costs of waste processing in the landfill will be efficient. The 3R concept emphasizes the participation of the community in groups with institutions that are indeed formed by society and society.

In 2018, Tabalong Regency's waste management was only 1% while until 2022 waste management reached 12%. This figure is obtained not only from the efforts of the government but also from the participation of the community, schools, and the private sector who help manage waste. However, efforts in waste management still have to be improved, because the national waste reduction target of 30% still has to be pursued. So, it requires a joint commitment of all parties to reduce waste. In addition, the disaster incident at the Luewigadjah landfill is a reminder to avoid similar incidents in the Tabalong Regency landfill. Community-based waste management can at least reduce the generation of waste hoarded in landfills (Artiningsih, 2012). Shown in Figure 4. below that in the last two years, waste management in Tabalong District which is the performance of waste shows that in two years it shows a steadily increasing number both in waste reduction and waste handling.

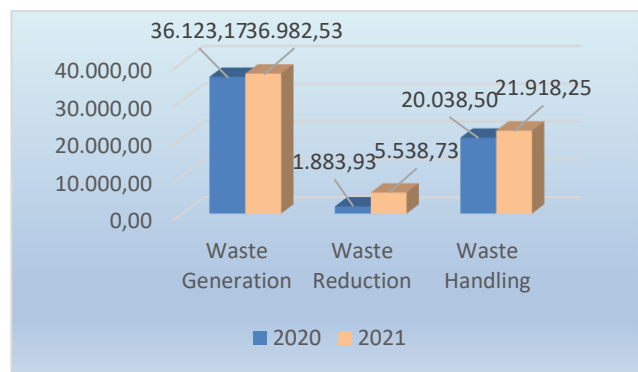


Figure 4. Waste Performance of Tabalong Regency in 2020-2021
Source: SIPSAN, 2022

The paradigm shift in waste management must start with government agencies, namely the Tabalong Regency Environmental Service, which is the main commitment to change. The first thing to do is to improve the human resources involved. As the interview results stated as follows: "Garbage transport drivers, before 2019 garbage transport drivers worked outside the boundaries of their transport areas. In the hope of earning income beyond the official wage, they are using government-financed facilities for personal gain which will certainly hurt DLH".

Repairs began to be carried out in 2020 and "rogue" transport drivers no longer dared to transport garbage outside the work area. The addition of the budget through the Special Allocation Fund provides a breather for DLH to serve the community. The transport truck fleet has been increased to 33 dump trucks, and in 2020 there were an additional 10 units of three-wheeled vehicles which were then lent to villages that were not served by waste transport. The efforts made by DLH are steps taken in improving the effectiveness of waste management in the end in the landfill by facilitating waste transportation equipment to avoid inefficiencies such as those discovered by Hardiyanti et al. (2021) in the Demak Regency.

Based on what was found, it is known that efforts to change the paradigm of waste management begin with the improvement

of government agencies that are responsible for managing waste. The first effort made is to make improvements to DLH's human resources, this indirectly affects the transportation budget that has been used by rogue individuals to seek personal gain. In addition to improving human resources, an additional budget is also carried out, which certainly provides fresh blood in every process of government activities.

The commitment of the local government can be seen that Tabalong Regency is trying to realize the waste reduction target through the establishment of Regional Regulation Number 14 of 2017 concerning Waste Management. This shows the seriousness of the region in managing waste, internal improvements to waste service management institutions are also carried out to support this goal. The provision of supporting facilities for waste services also continues to be improved, including facilitation for people who have not been touched by waste services.

The waste management policy that has been implemented in Tabalong Regency, shows that the District Government has implemented a policy based on Law Number 18 of 2008 concerning waste management. Even in its development, existing policies lead to a form of community-based policy implementation.

Community Participation in Waste Management

No less important effort to reduce waste is to increase community participation. One of them is through the Waste Bank, which is a waste management facility with the 3R principle (reduce, reuse, and recycle), as a means of education, behavior change in managing waste, and the application of a circular economy formed and managed by the community, business entities, and/or local governments (Asteria & Heruman, 2016). The adoption of community participation is used as a cornerstone in this effort. Community participation will be effective if the government's political commitment is trusted by the public, as well as open access to information and transparency in waste management (Tanuwijaya: 2016, Addahlawi et al.: 2020).

Tabalong Regency waste bank, the number that exists until 2021 is 35 units, but when further identified by DLH, it turns out that only 12 units are active. Meanwhile, DLH focuses on 12 active Waste Bank units to be built. Active community participation through the Waste Bank is an effort to control waste generation through community organizations (Ahsan et al, 2012, Wijayanti & Suryani, 2015, Affandy, 2019)

To guide the community regarding waste management, DLH experiences limited human resources. It is necessary to increase the ability of human resources, this is to meet the demands of community needs (Bolaane & Isaac, 2015). Those related to waste management are under the responsibility of Kasi. Waste Reduction works alone without being accompanied by staff. Finally, when the coaching focus was on 12 active Waste Banks, they were DLH pioneers in waste reduction education.

Community participation as part of educational dissemination is considered by DLH to be very effective because they are also actors in managing waste. What is conveyed by direct actors can provide understanding for the community so that in the end it gives rise to the community's desire to be involved. In socializing education for the pioneering waste bank community, DLH facilitated in the form of consumption and transportation (Figure 5).



Figure 5. Waste Management Socialization
Source: Tabalong Environment Agency, 2022

Until now, the Waste Bank is not only located in urban areas but has spread to villages (the list of distribution of Waste Banks in Tabalong is seen in table 2). Even one of the Ribang Villages, which is ±30 km from the district capital, already has a Waste Bank. The obstacle faced by the Waste Bank, which is located far from the city center, is the sale of waste sorting products to collectors. The collector reasoned that the agreed price does not cover the cost of transporting garbage collection. This is a challenge for DLH to innovate, for problems related to the collection of waste sorting results facilitated by DLH. DLH commits When a distantly located Waste Bank wants to sell its waste, as long as it coordinates in advance, it will be picked up by a fleet of trucks in DLH to sell to collectors, most of whom are in the city center. The involvement of the private sector in this matter is that the collector is one of the actors involved in waste management. Private involvement is one of the efforts to ensure service improvement according to Bolaane & Isaac (2015) private sector relatively performs well in terms of efficiency and effectiveness.

Table 2. List of Waste Banks of Tabalong Regency

No	Waste Bank Name	Location
1	Harapan Baru	Kasiau Raya
2	Pelangi	Desa Kambitin Raya
3	Mekar Sari Bersih	Belimbing Raya
4	Berlian Bersinar	Tanta Hulu
5	Anggrek	Sulingan
6	Sumber Berkah	Belimbing
7	Jangkung Hijau	Jangkung
8	Maluyung Bersinar	Mabu'un
9	Berkah Bersama	Hikun
10	Obor bersinar	Mabu'un
11	Ribang	Desa Ribang
12	Barokah	Desa Garunggang

Source: Tabalong Environment Agency, 2022

The spread of Waste Banks shows that participation in waste management through waste banks has been running even though in practice there are still various obstacles. Such as the existence of a dormant waste bank. In addition, the distance of the location far from the collector is an obstacle that can affect the course of community participation involved in waste management. internally, the Tabalong Environment Agency is also aware of the limitations in terms of human resources working alone without staff support. So that the main role in waste management should be the responsibility of the community.

In 2018 DLH's commitment to community participation was also carried out by proposing the construction of a Waste Processing Plant with the concept of Reduce Reuse, and Recycle (TPS 3R) at the Ministry of PUPR, then approved as many as 2 units. So that it was finally appreciated again by the Ministry of PUPR by returning 2 units of TPS 3R in 2020. And the last one in 2021 again received a grant of 2 units of TPS 3R. The success of the 3R TPS is also an effort to be replicated by the local government by independently budgeting the 3R TPS through the Tabalong APBD as many as 1 unit so that until 2021 the number of 3R TPS in Tabalong Regency is 7 units. And it has also been budgeted for 2022 as many as 2 additional units, one of which can be seen in the following figure.



Figure 6. TPS 3R Tanjung Selatan Bersinar

Looking back to the beginning of 2018, it is very difficult to involve the community in managing waste, especially the 3R TPS, ranging from the refusal of the community in their environment to build waste facilities to the absence of community interest in working to manage waste. Based on the informant's statement that "what is happening now is just the opposite, DLH is overwhelmed by the demand for the construction of a large number of waste facilities from the community. Although there are conditions that must be met in the construction of the 3R TPS facility, the community stated that they are ready to meet". This shows that when the commitment of local governments is trusted by the community and open access to information that provides an understanding of waste management, it will lead to increased community participation (Nugroho & Setiyono, 2015).

The main criteria for choosing a construction site for a 3R TPS facility are: (1). The land of the 3R TPS is within the same administrative boundaries as the service area of the 3R TPS; (2) Areas that have a high level of waste vulnerability, following the SSK and data from BPS; (3) The status of ownership of land owned by the Regency/City Government, public/social facilities, and village-owned land; (4) The area of land provided is at least 200 m²; (5) Placement of the location of TPS 3R as close as possible to the service area (Direktorat Jenderal Cipta Karya, 2017).

Similarly, when the Regional Development Deliberation and Planning was held, almost all districts included the construction of 3R TPS in their areas. DLH provides a way out for the fulfillment of this request to use the APBD and is not the authority of the DLH, but it is the authority of the PU Office to budget. Unlike what has been built, TPS 3R was built using the State Budget which is organized directly by the Ministry of PUPR and continues to coordinate with the regions and as a partner in waste management is DLH Tabalong. In this case, DLH does not mind anyone having the authority to build a 3R TPS facility when coordinating with DLH. As the construction of the DLH 3R TPS

hopes that what has been done continues, community involvement is essential. Whether it's starting the planning process to waste management when the facility is ready.

Table 3. List of TPS 3R Facilities in Tabalong Regency

No	Name of TPS 3R	Location	District
1	Maju Bersama	Tanjung Selatan, Mabu'un	Murung Pudak
2	Pendopo Bersinar	Kelurahan Pembataan	Murung Pudak
3	Buluh Berjaya	Desa Sungai Buluh	Kelua
4	Pelita	Anggrek Raya	Murung Pudak
5	Bina Lestari	Tanjung Tengah	Tanjung
6	Nawuraha	Desa Warukin	Tanta
7	Menanti	Desa Padang Panjang	Tanta
8	Tanjung Selatan Bersinar	Tanjung Selatan	Murung Pudak

Source: Tabalong Environment Agency, 2022

Efforts to increase community participation carried out by the Tabalong Regency Government have improved the community-based waste management system, especially the collection of waste from the source, as well as increasing public awareness in maintaining the cleanliness of their environment (Ahsan et al., 2012). And the real strength in the implementation of a program is the participation of the community (Arnstein, 1969, Addahlawi et al, 2020) in this case participating through the Waste Bank and TPS 3R programs that the Government implemented. Furthermore, Arnstein (1969) argues that participation is invaluable, insofar as the state has the power to allow citizens to engage in government programs. In other words, the state gives power to citizens to participate in government programs (Fung, 2006).

Community participation in managing the environment in Tabalong Regency can also be seen in the series of activities for the construction of the 3R TPS facility, starting from the planning process, the development stage, to the facility operation stage. This illustrates that public participation in environmental governance cannot be solved effectively by the government alone, but requires the joint efforts of the government and society and ultimately creates this good environmental governance in line with what was once written by Plessis (2008).

Public participation will certainly not occur if the government does not provide facilitation, such as socialization of the importance of maintaining environmental cleanliness, waste sorting training, to physical facilities to support community-based waste management activities (Dhokhikah et al., 2015) which has also been partly implemented by the government through DLH socializing the community to participate in managing waste both individually and through the community by participating in programs run by the government, namely the Waste Bank and TPS 3R. In addition, public participation in waste management is a process that is promoted, supported, and given by the government (Kinnares & Nakawajana, 2017), so it is natural that the government is present in every waste management activity. In the process, the community finally has independence in waste management, and those who benefit are the community itself and will reduce the burden of waste dependents managed by the government. Although in waste management, the community has not separated between household waste and industrial waste as the Tembalang

community of Semarang City, the community has used a separate system in managing waste (Iawedat et al., 2015).

Community participation through the community has a positive value in managing waste, this can be seen by the large demand for the construction of new TPS 3R facilities. ini showing that community participation affects waste management in Tabalong District (Baba, Salem Joma Othman. Purwanto. Sunoko, 2015). The form of community participation in the implementation of the Waste Bank and TPS 3R in Tabalong. Non-governmental organizations are institutions that are community start-ups based on the desire to create a healthy environment. With the increasing participation of the community, the Tabalong regional government is committed to adding sustainable facilitation for people who have concerns about managing waste.

CONCLUSION

Based on the results of the analysis and discussion referring to the data found, it can be concluded that in the implementation of waste management, Tabalong Regency has formed a commitment to waste management efforts in achieving waste reduction targets. The main commitment to waste management is stated in Regional Regulation Number 14 of 2017 concerning Waste Management. Even so, there are still obstacles in its implementation such as limited human resources and budget constraints, so the Environment Agency is trying to make improvements in waste management. In addition, community involvement as the largest contributor to waste generation is an effective step in management, especially to pursue waste reduction targets.

The Waste Bank and TPS 3R programs are a form of community participation that shows the government's efforts in getting support from the community. Thus, to realize the waste reduction target, a sustainable synergy is needed between: (1). Local government; (2) Society; (3) Increased support of private parties that have not been involved.

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