

Social Innovation in Community-Based Household Waste Management in Ciamis Regency, West Java Province

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ABSTRACT

The Ciamis Regency Government, through the Office of Public Housing, Settlement Areas, and the Environment (DPRKPLH), has conducted the Selingkuh Mas Maggot program (Save the Community Environment, Manage Waste and Bank Maggot) as a social innovation in waste management. This study aims to analyze how the Ciamis District DPRKPLH and the community manage waste from the social innovation perspective. The method used in this study is qualitative, with in-depth interviews and literature studies. Data analysis was conducted through data coding, an open network, and a conclusion by using ATLAS.Ti software. The results of this study are that social innovation in Community-Based Waste Management in Ciamis Regency at least covers aspects of (1) drivers as a driving factor for the emergence of social innovation initiatives; (2) enablers, namely resources that support social innovation; (3) processes, where innovation and collaboration are key in implementation; and (4) outcomes, social innovation provides social, economic, and environmental benefits for the community.

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INTRODUCTION

Waste management with the collect and transport paradigm by the public sector is no longer a waste solution (Colon & Fawcett, 2006; Wahyudi, 2016). Currently, the public sector has been encouraged to involve public participation in governance (Kusumastuti, Silalahi, Sambodo, & Juwono, 2022; Wicaksono, 2018), such as community empowerment in waste collecting (Sekito, Prayogo, Dote, Yoshitake, & Bagus, 2013; Sulistiyorini, Darwis, & Gutama, 2015); reuse, reduce, and recycle (3R) become economic

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value and impactful for generating household income likely composted and black soldier fly (BSF) cultivation (Kędzia et al., 2022; Pamuji, Rosyadi, & Nasihuddin, 2023; Salman, Nofiyanti, & Nurfadhilah, 2020); and waste bank management toward zero waste (Fatmawati, Mustari, Haerana, Niswaty, & Abdillah, 2022; Purwendah & Wahyono, 2021; Ramdani, 2022).

Ciamis Regency faces an urgent waste problem that must be addressed immediately: 1). Household waste production in Ciamis Regency reaches 100 tons per day; 2). Only under 20% is managed by the community (Suryarandika, 2017); 3). The third largest waste producer after Sukabumi Regency and Bogor City in West Jawa (Rizatya, 2022). Since 2017, Ciamis Regency, through the DPRKPLH, has developed social innovations based on community empowerment through maggot cultivation and waste banks. Social Innovation is the implementation of new ideas, such as programs, processes, and products, to achieve common goals between actors and has a broad impact (Nicholls, Simon, & Gabriel, 2015). The use of the larvae (maggot) of this insect as an organic waste processor is a promising opportunity because the harvested BSF larvae can be used as a source of protein for animal feed so that they can be alternative feed to replace the conventional and have economic value (LAN RI, 2018). In addition, the community-based waste bank also produces inorganic waste that has monetary value to impact the managing community positively.

Innovation in waste management "Selingkuh Mas Maggot (Selamatkan Lingkungan Hidup Masyarakat Kelola Bank Sampah dan Maggot di Kabupaten Ciamis)" has been carried out sustainably. The management of this model includes sorting, processing (organic waste into larva), and distributing maggot, which has economic value for animal feed needs, so that the community benefits from this waste savings. Based on the results of the author's previous research on measuring the impact of Innovation, it was found that Selingkuh Mas Maggot had provided various optimal results, such as increasing the efficiency of freelance workers as garbage collectors, increasing community involvement in several villages, increasing zero waste areas in Ciamis Regency, increasing production feed (maggot) which has economic value, and the creation of processed waste products that have competitiveness (LAN RI, 2018). Likewise, managed waste banks have provided benefits such as creating a clean and healthy environment, economic value from recycling waste, and increasing community capacity and knowledge.

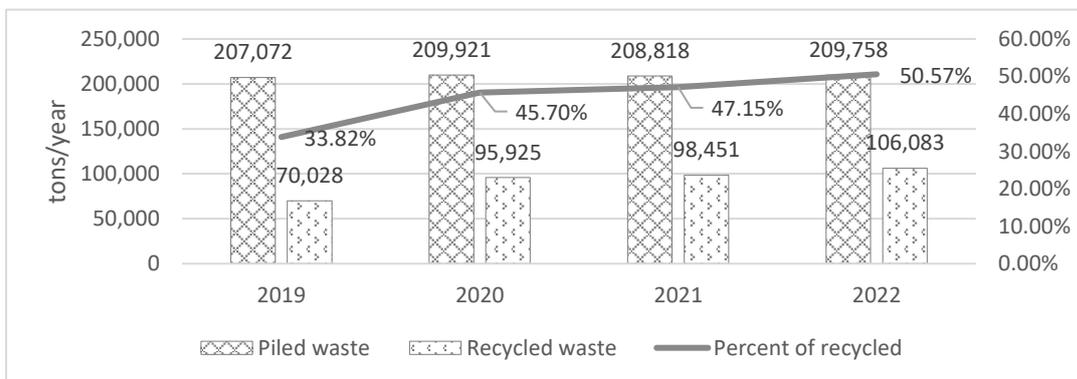


Figure 1. Waste Management Performance in Ciamis Regency

Source: KLHK, 2023

In the last four years, waste management in Ciamis Regency has shown optimistic results. It can be seen from the increase in recycled waste from 70,028 tons (2019) to 106,083 tons (2022). In addition, in 2022, as much as 50.57% of the total waste generation in Ciamis Regency has been successfully recycled. This achievement has increased since 2019, when at that time, only 33.82% of waste generation was recycled. Until now, all sub-districts in Ciamis Regency have managed formally and informally community-based waste at the Neighbourhood(RT)/Hamlet(RW) level, community groups, hamlets, and villages (KLHK, 2023). The data above show that community-based innovations have improved waste management performance in Ciamis Regency. It is also inseparable from the policy issued by Ciamis Regency through Ciamis Regency Regional Regulation Number 2 of 2018 concerning Waste Management. Article 35 in the regulation explains that Regional Work Units (SKPD) can involve community participation in waste management. Even though this Innovation has involved the role of the community and has increased the performance of waste management, the innovation process of Selingkuh Mas Maggot has never been explored how it was initiated, implemented, and has an impact on the community and the environment.

Research on Innovation involving the role of the community has been carried out a lot (Daniel & Jenner, 2022; Jungsberg et al., 2020) found that local communities and the public sector generally initiate Social Innovation, and the sustainability of social Innovation depends on the capacity of the community. Meanwhile, the study of Ambati (2019) and Wulandari et al., (2021) regarding social Innovation in community-based waste management found that social Innovation provides socioeconomic benefits in realizing environmental sustainability. Then, the study of Siagian et al. (2019) and Setyaningsih et al. (2022) look more at who and what are the roles of stakeholders in social Innovation of sustainable waste management. A study by Wahyudi (2016) about waste management regulations in Samarinda City concluded that social Innovation is still challenging to initiate due to limited capacity and lack of education among the public. In the level of participation, research conducted by Indrawati et al. (2021) and Drimili et al. (2020) found that community involvement in waste management has been carried out, but community knowledge and understanding still need to be improved. Meanwhile, research by Yulian & Haswindy (2017) and Sekito et al. (2013) found that in Social Innovation, the characteristics of the community and the environment are positively related to community participation.

By looking at some examples above, research on waste management from the village, district, and city levels has been carried out, especially from the aspect of community participation and involvement of actors. However, based on the databases of national and international journals above, the authors found that there was still rare research on waste management raised from the perspective of the social innovation process. This concept needs to be explored in the context of how this Innovation was built by the Ciamis Regency DPRKPLH, which then successfully empowered the community to manage waste while simultaneously obtaining economic benefits for the community. This social innovation perspective will reveal more deeply how the government understands waste problems in the community and how they influence and empower the community.

Based on the above thoughts, this research seeks to answer the question: how is the innovation process of the Ciamis Regency DPRKPLH "Selingkuh Mas Maggot" viewed

from the perspective of social Innovation? The results of this study can contribute significantly to developing the concept of public sector innovation, especially in the field of Social Innovation in community-based waste management, and practical benefits to assist local governments in understanding how to build social policies based on community involvement in solving waste problems.

In the context of public sector innovation, social Innovation has received increasing attention in the literature and social enterprises as a practice initiated by the public sector (Hansen, Fuglsang, Gallouj, & Scupola, 2022). Social Innovation is a systematic and complex process that aims to create public value for the community (Jalonen, 2022). Social Innovation tends to be bottom-up driven to address specific groups' social problems (Jalonen, 2022; Meričkova, Nemeč, & Svidronova, 2015). Navarro-Valverde et al. (2022) add that social Innovation is synonymous with democratization, civil society, its role, and involvement in improving the community's quality of life. Meanwhile, Mulgan et al. (2007) added that social Innovation is identified with new ideas that meet urgent needs and improve people's quality of life.

Meanwhile, according to O'Byrne et al. (2014) and Ramadani et al. (2020), Social Innovation is the success of an idea or new idea carried out in a collaborative process and positively impacts the community as part of public service. This research adopts the conceptual framework from O'Byrne et al. (2014), who explained that social Innovation consists of 4 dimensions: motivation as drivers, culture as enablers, collaboration as processes, and sustainable social Innovation as outcomes, as shown in Figure 2. This concept is essential for describing the social Innovation process from birth, implementation to impact.

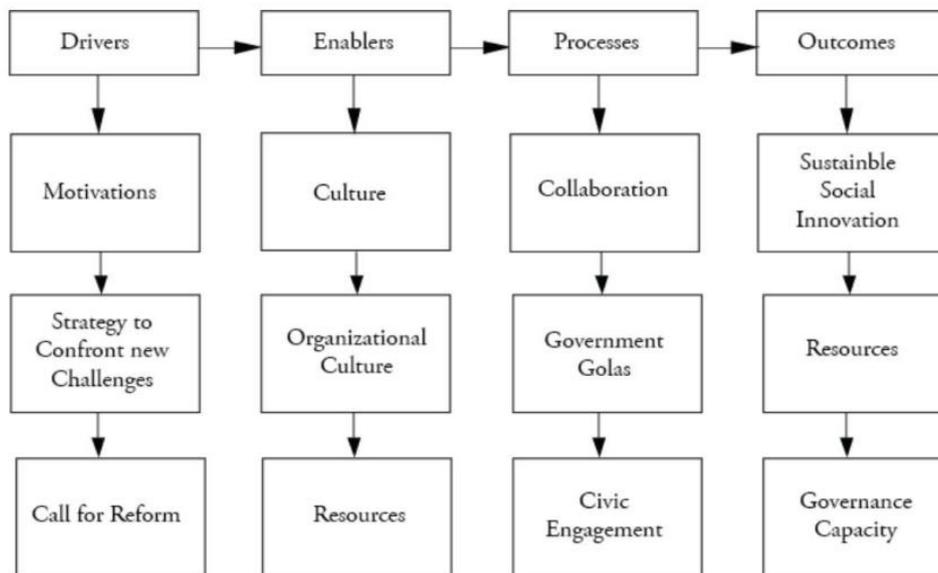


Figure 2. Conceptual Framework in Social Innovation

Source: O'Byrne et al. (2014)

1. Motivations. The public sector continues to strive for various ways to improve the welfare of its people. This encouragement provides space for the public sector to respond to challenges with Innovation. Communicating with the community and

listening to their problems will motivate the public sector to develop social innovations that can solve the socioeconomic issues of the community (O'Byrne et al., 2014; Srimarchea & Aziza, 2021).

2. Culture. Innovation culture is critical because a strong innovation culture will optimize organizational functions and produce social Innovation. One of the actors that has a significant influence as an enabler in driving a culture of Innovation is leadership (Natário & Couto, 2022; O'Byrne et al., 2014). Good leadership will internalize the innovation culture's values into the organization's human resources (Hidayah, Kusumaningrum, Wismono, & Amarullah, 2018; O'Byrne et al., 2014).
3. Collaboration. Collaboration is used in the public sector to increase added value and create good governance (O'Byrne et al., 2014). Establishing successful collaboration is considered a hallmark of good governance because it will encourage the birth of ideas and Innovation (Sørensen & Torfing, 2012; Torfing, 2019). Social Innovation requires collaboration because the public sector has limited resources (Ansell & Gash, 2007).
4. Sustainable Social Innovation. Sustainability relies on policies to maintain positive benefits over time (O'Byrne et al., 2014). For the public sector to thrive in implementing innovative policies, it must have impactful and acceptable policies for the community. Social Innovation can also be sustainable by establishing good relations between the public sector and society (Barsei, 2023; Denhardt & Denhardt, 2007).

In addition to the concept from O'Byrne et al. (2014), this research also adopts the essential elements of social Innovation from Caulier-Grice et al. (2012), consisting of meeting a social need, social Innovation born from the needs and problems of the community; moving from ideas to implementation, social innovation tends to generate new ideas or practical ways; sustainable and impactful, social innovation does not only solve problems but also impacts (knowledge, capacity, relationships). This element becomes vital in analyzing prerequisite conditions in a social innovation process.

METHOD

This research uses a qualitative approach with case studies on community-based waste management in Ciamis Regency. Case studies are conducted when researchers want to comprehensively understand the background of a phenomenon or problem (Creswell & Creswell, 2018; Harahap, 2020) by exploring and analyzing how the Ciamis Regency DPRKPLH implements the Social Innovation concept in managing waste. The selection of informants used a purposive sampling technique in which informants knew the process of formulating, implementing, and evaluating Mas Maggot's Selingkuh innovation. The informants comprised the Head of the DPRKPLH Environmental Sector, the maggot cultivation waste manager, the leading waste bank manager, and the unit waste bank manager. The selection of informants was carried out with the consideration that the informants were involved in waste management from the start until it was initiated. Data collection techniques use in-depth interviews and documents related to waste management regulations and relevant scientific papers. Then the data analysis technique is carried out in 3 stages, namely selecting and simplifying data (data

condensation), compiling data systematically (data display), and drawing conclusions (drawing and verifying conclusions) (Miles, Huberman, & Saldana, 2014) and assisted by using the ATLAS.ti which makes it easier for writers in the process of coding and data analysis (Susilowati, Wibowo, Putra, Said, & Rifai, 2020). This research was conducted from January to April 2023.

RESULTS AND DISCUSSION

We conducted an analysis after interviews with the public sector and several communities that manage waste banks and maggot managers in a few villages. We found out how the Ciamis DPRKPLH initially studied waste problems in the community and invited them to get involved in waste problems.



Figure 3. Social Innovation Model in Community-Based Household Waste Management in Ciamis Regency

Source: processed by author (2023) adopted from Caulier-Grice et al. (2012); O’Byrne et al. (2014)

Motivation as Drivers

From the Social Innovation perspective, the public sector must have a strong motivation and desire to solve social problems (O’Byrne et al., 2014). For this reason, the government must first understand the community’s problems (Denhardt & Denhardt, 2007) to determine the urgency of the problem and the level of motivation. The results of the interviews show that social Innovation is driven by the desire of the Ciamis DPRKPLH to reduce the amount of household waste generation, whose production is increasing every year. To find this urgency and encouragement, we found that the Ciamis DPRKPLH communicates bottom-up with the community to understand the problems and potential that can be empowered to overcome waste problems. Communicating during informal activities is the key to entering and seeing the reality of society (Hendriana et al., 2023), one of which is being involved in their local wisdom activities, such as morning exercises or Friday evening recitations held by the local community every week. From this communication process, the DPRKPLH Ciamis gets the potential in

the community. First, waste management, if it is recycled, will create added value and economic value for the community. Second, the community understands the problem of increasing waste generation because it harms the environment in which they live. Based on an interview with the Head of the Ciamis DPRKPLH Environment Sector, delivered:

"The waste problem in Ciamis is the lack of organic and inorganic waste processing. After taking part in and participating in several village activities, I found that they only collect, transport, dispose of, and even burn the waste. I believe this needs to be corrected and awareness built on waste. It is potential..."

It is also in line with the interviews we conducted with the community managing the waste bank in Saguling Village, that:

"The people here only know that they collect, transport, and dispose of it, at least they also give it to collectors because that is the extent of the knowledge of the village community."

DPRKPLH Ciamis sees that the waste problem can be solved by directly empowering the community because the nature of the community is still friendly and works together. In addition, based on Ciamis Regent Regulation Number 32 of 2018 concerning Regional Strategy Policies in Waste Management, the community can be empowered by involving and increasing their capabilities in the recycling process and reusing household waste in supporting the Ciamis Zero Waste Regency.

It is clearly like what [Navarro-Valverde et al. \(2022\)](#) said: Social Innovation is identical with government efforts to encourage community involvement. [Jalonen \(2022\)](#) and [Meričkova et al. \(2015\)](#) also strengthened findings regarding practical social Innovation, namely that the government must explore the source of the problem from the community itself. In addition, research conducted in Tarakan City regarding waste management also departs from community environmental problems, where collection methods are still limited to gathering and transporting ([Harmana, Wargadinata, & Nurdin, 2021](#)). The problem of increasing waste production, behavior, public awareness in managing waste, and negative environmental impacts are the driving factors for the Ciamis DPRKPLH to make a change through social Innovation. In addition, the plan to involve the community's role in social Innovation is also driven by the limited human resources and infrastructure owned by the agency ([Giyatno, Suryadi, & Bustomi, 2023](#)). It is in line with what was stated by [O'Byrne et al. \(2014\)](#) and [Cole \(2022\)](#) that the public sector must have strong motivation and desire to solve social problems. This finding is also supported by [Caulier-Grice et al. \(2012\)](#), that one of the main elements of social Innovation is that the public sector must find the roots of social problems that occur and become community needs.

Culture as Enabler

Strong motivation alone is not enough. The public sector needs to build an innovative culture so that its desire to change can result in social Innovation. DPRKPLH Ciamis took various steps to the community to provide an understanding that the community and the government both have joint problems and common goals so that the best solution is needed so that these problems can be resolved. This strategy encourages actors to think more creatively because it is driven by a problem-and-solution approach ([O'Byrne et al., 2014](#)).

The first approach taken is to understand that waste is a common problem. Why is the waste problem a community problem? Because the community causes this problem

and impacts their environment, with this approach, the community feels they are part of this problem and is encouraged to play a role in solving it. Shared issues must indeed be the basis for raising community awareness. If shared issues are not agreed upon, the engagement process will become an obstacle (Emerson & Nabatchi, 2015; Lombardi & Costantino, 2020). The second approach is to link waste with values embedded in society, such as the Islamic religious principle that cleanliness is part of faith, so we are all responsible for personal and environmental cleanliness. This information is essential to provide given the characteristics of the people of Ciamis, who are friendly, religious and tend to have a philosophy of life based on the Al-Quran (Sukmayadi, 2016; Yuliani, Endah & Nurwanda, 2018).

The third approach is the approach to the benefits obtained by involving the community in waste management. It relates to the interests of the community that, as economic beings, they must meet their needs and increase (Smith, 2007). DPRKPLH Ciamis conveyed in its outreach that community-based waste management will provide value benefits for the community itself, such as the benefits of knowledge regarding waste recycling, social benefits through waste banks and waste alms, and economic benefits because waste recycling produces products that have added value so that can bring in additional income. Based on an interview with the Head of the Ciamis DPRKPLH Environment Sector, delivered:

"For the social approach, of course, it provides an understanding that waste can be used as a useful resource for them. So, we must change that mindset. We have to instill it, provide lessons or understanding to the community so that the community gets economic, income-wise, socially and environmentally benefits, which can get a clean, healthy and valuable environment."

This effort is in line with what was stated by (Denhardt Denhardt, 2007) that to build public trust, it is necessary to identify common interests so that public administrators can communicate effectively and on target. From the interviews, it was found that there is a shared interest in solving the waste problem.

Table 1. Stakeholders' interest in waste management in Ciamis Regency

Dimension	Government's issues	Community's issues
Human resource	Lack of human resources in overcoming household waste	Having adequate resources, the need for community involvement
Finance	Lack of budget to support household waste management	Community empowerment has the potential for budget efficiency
Knowledge	Have knowledge, skill communication, and power (regulation) to implement waste management	Lack of skill and knowledge; need to improve their capacity, especially in community-based waste management
Benefit	Become an enabler in generating social welfare	The community will get another income, productivity, capacity

Source: Data Processed by Author, 2023

By adopting the perspective of building shared interests from Caulier-Grice et al. (2012), four aspects were found to generate common interests in waste management

regarding human resources, finance, knowledge, and value benefits. As shown in Table 1, the government has a limited budget and human resources but has the knowledge and recognizes the benefits of waste management. Meanwhile, the community they are waste producer, and their waste management so far has only been collecting, transporting, and disposing of it, but the community has adequate resources and has a solid economic motive. Trust and shared goals will be built over time if the government and community understand this interest.

One aspect that stands out in this aspect of culture is how the public sector internalizes values through communication with the public. The interviews found that to find common interests in waste management in Ciamis Regency, the DPRKPLH innovators prioritized the community and business actors as participants, not even village officials/institutions or community leaders. Why is that? It was conveyed during an interview with the innovator of the Ciamis District DPRKPLH:

"For waste management, the village heads and hamlet heads, then the RT RW, then the PKK, are sure to fail. Because they are busy with administrative work, that information does not reach the public. I want it to be invited. I like to request that those invited are those who have fish in their homes, those who have livestock, farms, and those who are immediately interesting for them."

From the interview excerpt above, it can be said that the DPRKPLH Ciamis innovators put forward public values by inviting the business community so that the community can readily accept them. Public value is a common goal in Social Innovation, such as waste management (Jalonen, 2022; Meynhardt, 2019). In addition to public value, the communication channels used also significantly affect the level of adoption of an innovation (Rogers, 1983). It is also in line with research from Siagian et al. (2019), where the efforts of the people of Medan City in managing the waste bank are by conducting continuous communication and education as well as carrying out individual waste management initiatives (enablers) to raise awareness of other communities. The social enterprise approach is more advanced by offering what socioeconomic benefits people get if they are involved in social Innovation (Hansen et al., 2022).

This aspect slightly differs from what was conveyed by (O'Byrne et al., 2014). Our findings find that in the context of culture, innovation culture is more internalized to actors outside the organization, not to the internal organization. Because the social innovation approach carried out by the Ciamis DPRKPLH involves the community as the leading actor, shared values must be understood so that they are aware, think about finding solutions, and are directly involved in Social Innovation. Even though they are different, the leadership factor remains an enabler, as O'Byrne et al. (2014) stated. It can be seen from the leadership of the head of the environmental sector, who always goes directly to the community and can influence the community in a better direction. The similarity of goals and values between the community and the public sector is also a form of the essential elements of social Innovation proposed by Caulier-Grice et al. (2012), where the goals and community values and the public sector must be aligned, such as waste problems and community needs found with the DPRKPLH as the formal authority in charge of waste and environmental issues. The similarity of goals and values is followed up with what ideas are suitable and appropriate so they can be implemented.

Collaboration in processes

The government has been motivated to solve the waste problem in Ciamis Regency, and the community already has the same perception and goals as the public sector regarding waste. Next is how to make changes through social Innovation.

Community empowerment in waste management in Ciamis Regency is carried out in cross-sectoral collaboration, including the community. It is clearly in line with what was stated by [Caulier-Grice et al. \(2012\)](#) and [Denhardt & Denhardt \(2007\)](#) that to realize optimal public services is to take a collaborative approach across sectors, especially with the community. Apart from going directly to the field and communicating with the community so that the community is involved in waste management, the Ciamis DPRKPLH also integrates waste management activities with related agencies with objectives related to the environment, health, and family empowerment. The form of our collaboration is described in Figure 4 below.

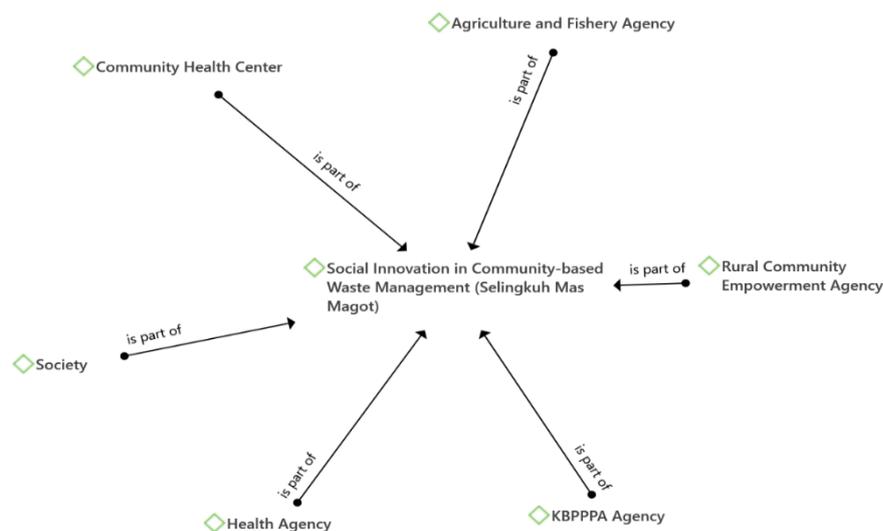


Figure 4. Collaboration in CBWM in Ciamis Regency
Source: Processed by Author, 2023

Based on Regional Regulation No. 2 of 2018 concerning Waste Management article 32 point 5, waste management services can collaborate with government agencies, communities, and business entities. It means that waste management must be carried out collaboratively across sectors. The results of our interviews with the Ciamis Regency DPRKPLH show that the involvement of government agencies in order to mobilize community involvement in waste management, including:

1. Agency of Population Control, Family Planning, Women's Empowerment and Child Protection (Dinas PPKBP3A). This agency has a "Kampung KB" program, and one of its functions is environmental-related. The DPRKPLH of Ciamis Regency sees that they have a role in supporting these activities so that the people of Kampung KB in Pawindan Village are given guidance regarding waste management through Maggot Cultivation and a Garbage Bank in supporting a clean and healthy environment.

2. Agency of Health and Health Community Center. It is related to the program from the Health Service where the Puskesmas is an actor in implementing the GERMAS (Healthy Living Community Movement) program in which one of its activities is to maintain the cleanliness of the household environment. The DPRKPLH of Ciamis Regency also contributes to its social Innovation through the program by providing education and recycling valuable waste.
3. Agency of Rural Community Empowerment (*Dinas Pemberdayaan dan Masyarakat Desa/DPMD*). Through DPMD, the village government provides facilities and infrastructure assistance in community-based waste management. It was encouraged by the Ciamis Regency DPRKPLH because it had budget constraints in procuring facilities and infrastructure.
4. Agency of Livestock and Fisheries. It relates to collaboration in managing organic waste based on maggot cultivation by providing catfish seeds as maggot consumers in supporting maggot own downstream to create a circular economy.
5. Community. as the implementing HR in managing waste from collecting, sorting, and recycling (maggot, composted, and handicrafts).

Collaborative efforts made by the DPRKPLH did not run smoothly. It is necessary to identify the contents of the program and objectives carried out by related agencies aligned with waste management. After knowing their respective roles and objectives, the DPRKPLH takes an approach by informing common interests to produce a shared understanding and goals in waste management.

"... in fact, we should give one output. The output that we do must be clear first. They (services) also need a program from us to support their program, so it is as if we support them; it is purely out of their will. The department needs support from one another, but sometimes the sectoral ego is still there."

Conceptually, the collaborative efforts of the DPRKPLH fit the Collaboration dimension as a collaborative social innovation process in public services and creating added value (O'Byrne et al., 2014). What distinguishes it is that the concept of social Innovation O'Byrne et al. (2014) emphasizes collaboration with the community, but this case study found collaboration with the community and other agencies (see Figure 5). It is also in line with what Denhardt & Denhardt (2007) stated: collaboration encourages implementing innovations to run well and achieve goals. Collaborative efforts in social Innovation are also closely related to the concept of collaborative governance, where governments are encouraged to collaborate because they are unable to solve their problems, either because they are constrained by regulations, human resources, budgets, and knowledge (Agranoff & McGuire, 2003; Ansell & Gash, 2007; Emerson & Nabatchi, 2015). Mutual trust and mutual understanding among actors is a significant prerequisite when the government collaborates (Agranoff & McGuire, 2003; Ansell & Gash, 2007; Emerson & Nabatchi, 2015; Sørensen & Torfing, 2012; Torfing, 2019).

The collaboration carried out by Ciamis Regency with related stakeholders has created public value for the community. Government collaboration (collaborative governance) encourages the government and other actors to cooperate in solving problems that the government cannot solve alone (Ansell & Gash, 2007; O'Byrne et al., 2014). Similar goals and shared visions drive collaboration (Barsei, 2022), thus

stimulating the public sector to immediately realize the ideas that arise to be implemented by the community (Caulier-Grice et al., 2012). The idea is communicated to the community so they can adopt it properly. This dimension is sufficient to describe how an idea is implemented through Innovation and collaboration as an essential element of social Innovation (Caulier-Grice et al., 2012).

Social Innovation for Community Welfare

Selingkuh Mas Maggot innovation has two innovation domains. First, efforts to reduce waste through recycling by cultivating maggots, and second is waste bank management. This social Innovation has involved many people from various villages in Ciamis Regency, such as Saguling Village with the Garbage Bank innovation (Ramdani, 2022), Pawindan Village with organic fertilizer innovation and maggot cultivation (Hamara, 2018; LAN RI, 2018), Imbanagara Village with Innovation in exchanging necessities at the waste bank (Hermansyah, 2021; Soraya, 2021), and Handaperang Village with the Innovation of the central waste bank (Hermansyah, 2022). In the process of empowering waste, we found that the community was able to manage its waste and instead gave birth to various other social innovations that have continued to this day. These social innovations were developed and integrated with community empowerment activities in waste management.

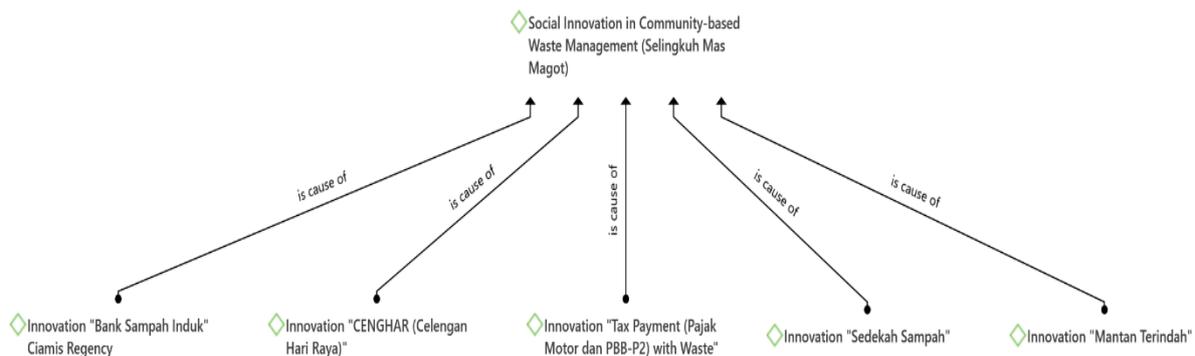


Figure 5. Social innovation in Selingkuh Mas Maggot
Source: Processed by Author, 2023

In the beginning, community-based innovations were born due to DPRKPLH discussions with the community. Then, after this social Innovation took place, we saw that community empowerment through social Innovation indirectly encouraged the community to think innovatively and collaboratively. This change in people's mindset has given rise to other social innovations, as illustrated in Figure 5 above, namely (1) "Bank Sampah Ciamis, which is an innovation resulting from community collaboration with the Ciamis DPRKPLH to serve and educate customers from government agencies, the private sector, companies, shops, and other community groups; this innovation then developed with the "Mantan Terindah" innovation, namely the use of treated methane gas to handle waste so that it is colorless and odorless; (2) There is an innovation CENGHAR "Celengan Hari Raya," which is an innovation from the Tumrah Village Waste Bank, Saguling Village. This activity is sharing the results of waste bank customer savings to encourage increased community participation in waste bank management; (3) Innovation in paying motorbike

taxes and PBB-P2 with the results of waste bank savings. This Innovation makes it easier for people who are customers of the waste bank to pay their waste savings for motorbike tax or PBB-P2 in collaboration with the nearest Samsat and POS Office; (4) "Sedekah Sampah" is a form of public concern for orphans in the form of educational assistance.

As an enabler, the public sector has created an innovative culture in society (O'Byrne et al., 2014). It was driven by the cultivation of a mindset carried out through socialization and facilitation from the head of the DPRKPLH sector, who emphasized that the waste problem is a social problem, and if done together, it will produce added value for the environment and the community itself. In addition to socialization and facilitation from the agency, there is continuous Innovation due to the existence of figures who strongly influence waste management. It is proven by the emergence of other social innovations, such as what happened to the "Bank Sampah" Tumras Village, which created the "Celengan Hari Raya" Innovation and the "Sedekah Sampah" for orphans' education assistance. It means that waste management impacts changing mindsets and creating an innovative culture for the community. It relates to the cultural aspect where leadership has internalized values within the organization, in this case, community groups.

"...our waste bank is used as a "celengan hari raya," named it as cenghar, sir. It was the first time that the Tumras Waste Bank was giving out to the community... Moreover, in my case, there is also sedekah sampah. Every second Friday, the Majelis Taklim collects trash while taking it to the waste bank to donate it or later in the month of Muharram for give to orphans."

This finding differs from that of Indrawati et al. (2021), where the public's knowledge and understanding are still lacking in waste management due to the minimal role of the public sector. It is also one of the causes of social Innovation not running sustainably due to low awareness of the ability to innovate, unlike the research by Siagian et al. (2019), which is in line with our findings that the Medan City waste management community continues to innovate in saving waste such as innovations in providing groceries and saving waste on holidays. The aim is to increase the involvement of other communities in managing the waste bank. Vanclay et al. (2015) also saw that social Innovation impacts people's ability to innovate in the form of products, processes, and policies. This dimension is confirmed by Caulier-Grice et al. (2012), who characterized Social Innovation as Innovation that effectively solves problems and provides a better social and economic impact on the community.

From the findings above, this research is in line with and different from some of the findings of previous studies. The research from Jungsberg et al. (2020) aligns with the authors' findings that social Innovation consists of two phases: the initiative phase is dominated by the role of the public sector, and the community entirely carries out the implementation phase. Meanwhile, research from Daniel & Jenner (2022) and Wahyudi & Hidayah (2022) found that social Innovation was born from community initiatives by the community and for the community. It is also different from Sumardjo et al.'s (2022) and Wulandari et al. (2021) research, where social innovation initiatives were born from SOEs. Research by Siagian et al. (2019) also supports our findings that the role of society and the public sector dramatically determines the sustainability of Innovation. From the aspect of impact, Social Innovation in several areas such as Tanjung Jabung Barat, Medan, Semarang, and Bekasi also supports the authors' findings that social Innovation provides

social, economic, and environmental benefits for the community (Sekito et al., 2013; Siagian et al., 2019; Sumardjo et al., 2022; Wulandari et al., 2021; Yulian & Haswindy, 2017).

CONCLUSION

Result above, it is concluded that community-based household waste management has implemented aspects of social Innovation so that Selingkuh Mas Maggot innovation can run until now; this is inseparable from the strong encouragement of the Ciamis DPRKPLH to solve waste problems, support for friendly community culture and cooperation, communication built by the Ciamis DPRKPLH to instill shared values, goals, and commitments, collaborating with the community as the leading actor and related agencies. This Innovation has provided socioeconomic benefits for the people of Ciamis Regency and has spawned other social innovations from community initiatives. Apart from that, the essential elements of social Innovation, such as the problem of waste as a community problem, ideas implemented in collaboration and Innovation, and providing a sustainable impact on the community, have been identified in Selingkuh Mas Maggot's innovation. The results of this study also found the most significant factor in social Innovation, namely the role of the DPRKPLH as an enabler and facilitator who has direct duties and functions with the environment. This study has limited interview data, which were only conducted in several waste management communities, not the whole. The public's perception and knowledge of the implementation and impact of this social Innovation can be used as a recommendation for future research.

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