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Village's Women Participation in Sustainable Waste Management

¹Emma Rahmawati, ²Taufan Daniarta Sukarno, and ³Anang Dwi Purwanto

^{1,2,3}National Research and Innovation Agency (BRIN), Jakarta, Indonesia.

¹Graduate School, Doctoral Program of Environmental Studies,
Brawijaya University, Malang, Indonesia.

¹emmakpdt@gmail.com; emma004@brin.go.id; ²taufands@gmail.com;
³anan009@brin.go.id

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¹Emma Rahmawati, ²Taufan Daniarta Sukarno, and ³Anang Dwi Purwanto

¹emmakpdt@gmail.com; emma004@brin.go.id; ²taufands@gmail.com; ³anan009@brin.go.id

^{1,2,3}National Research and Innovation Agency (BRIN), Jakarta, Indonesia.

¹Graduate School, Doctoral Program of Environmental Studies, Brawijaya University, Malang, Indonesia.

Abstract: Sustainable development requires the community's active involvement, as well as other development inside the village. One of the most crucial dimensions of development in recent years is the environmental issues, especially waste problems, where there is a lot of unhandled waste in rural areas. Fortunately, now there are villages that have succeeded in managing their waste in a sustainable manner with the support of village women's participation. The aim of this study was to determine the participation of village women in sustainable waste management. The research method uses descriptive qualitative data collection through in-depth interviews, Focus Group Discussion (FGD), observation, and documentation. The results showed that the participation of village women in the flow of sustainable waste management has various forms of participation, which contained in each stage activities of management, sorting, transporting, processing, and utilizing the results of waste processing. Factors that encouraged the participation of village women in village waste management development were the community's own willingness, ability to perform, and the opportunity to be actively involved. The village women proved that they were the largest producers of household waste, but at the same time were the ones that helped solve the waste problem. Through their services to their community, they have also increased the family's economic income through their involvement in waste management.

Key words: women's participation, village, waste management, sustainable development

Abstrak: Pembangunan berkelanjutan memerlukan keterlibatan aktif masyarakat, serta pembangunan lainnya di desa. Salah satu dimensi pembangunan yang krusial dalam beberapa tahun terakhir adalah permasalahan lingkungan hidup, khususnya permasalahan sampah, dimana masih banyak sampah yang tidak tertangani di wilayah pedesaan. Beruntungnya, kini sudah ada desa-desa yang berhasil mengelola sampahnya secara berkelanjutan dengan dukungan partisipasi perempuan desa. Tujuan dari penelitian ini adalah untuk mengetahui partisipasi perempuan desa dalam pengelolaan sampah berkelanjutan. Metode penelitian menggunakan pengumpulan data deskriptif kualitatif melalui wawancara mendalam, Focus Group Discussion (FGD), observasi, dan dokumentasi. Hasil penelitian menunjukkan bahwa partisipasi perempuan desa dalam alur pengelolaan sampah berkelanjutan mempunyai bentuk partisipasi yang beragam, yang tertuang dalam setiap tahapan kegiatan pengelolaan, pemilahan, pengangkutan, pengolahan, dan pemanfaatan hasil pengolahan sampah. Faktor yang mendorong partisipasi perempuan desa dalam pengembangan pengelolaan sampah desa adalah kemauan masyarakat sendiri, kemampuan melakukan, dan kesempatan untuk terlibat aktif. Perempuan desa membuktikan bahwa mereka adalah penghasil sampah rumah tangga terbesar, namun sekaligus turut membantu menyelesaikan permasalahan sampah. Melalui pengabdianya kepada masyarakat, mereka juga telah meningkatkan pendapatan ekonomi keluarga melalui keterlibatannya dalam pengelolaan sampah.

Kata kunci: partisipasi perempuan, desa, pengelolaan sampah, pembangunan berkelanjutan

INTRODUCTION

Current development in most countries leads to the acceleration of sustainable development goals (SDGs) achievement, which carries the principle of "No One Left Behind", which means that no one is left behind based on human rights and equality. Therefore, the issue of gender equality is echoing in the background. Gender equality is the 5th goal of the SDGs, according to the United Nations, and is not only a basic human right but also a necessary foundation for a peaceful, prosperous, and sustainable world. This shows that at this time the position of women is starting to be encouraged to be involved in all aspects of development. In several countries, there have been many programs that have begun to promote gender equality. In Afghanistan, United Nations Women (UN Women) succeeded in increasing gender equality which

was marked by an increasing percentage of women being aware of their right to knowledge in the economic and socio-political fields (Shamimi et al., 2022).

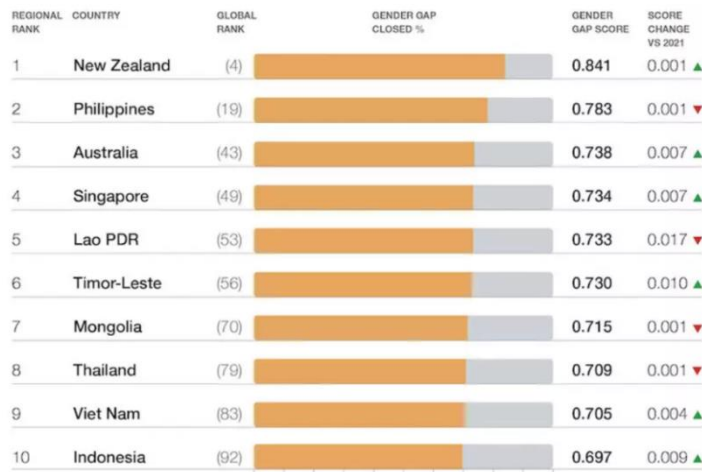


Figure 1:
Top 10 Global Gender Gap Index 2022 East Asia and the Pacific in World Economic Forum 2022 (World Economic Forum, 2022)

Figure 1 above is the ‘Global Gender Gap Report’ data in 2022 from the World Economic Forum. It shows that Indonesia is a country with 135 million women population. As many as 56% of the women are aged between 15-64 years old who They experienced an increase in the gender gap ranking, which is ranked 92 globally and 10th in the regional rankings. This shows that overcoming the problem of gender equality in Indonesia still requires a lot of work that needs to be done. Therefore, it is necessary to have programs or activities that start to involve more women.

Development in Indonesia itself is currently being intensively carried out in rural areas, where villages are at the forefront of achieving sustainable development goals through the achievement of the Village SDGs (Iskandar, 2020). Increasing gender equality awareness is absolutely necessary to encourage women to participate in various development activities in the village. Environmental development is one of the pillars of the SDG's which currently has many problems. But on the other hand, it turns out that the role of community participation can successfully solve environmental problems (Sapiains et al., 2022; Sobhani et al., 2022). Therefore, it is expected that village women can also participate in finding solutions for environmental issues inside the village. The findings of the IPSOS Global research institute in collaboration with the EDF France multinational electricity company, show that the five

environmental issues that are most in the spotlight today include climate change (46%), extreme climate, such as floods, heat, drought, storms, forest fires (43%), piles of garbage, plastic and packaging (41%), air pollution (37%) and depletion of water sources, land and forests (36%) (Santika, 2023).

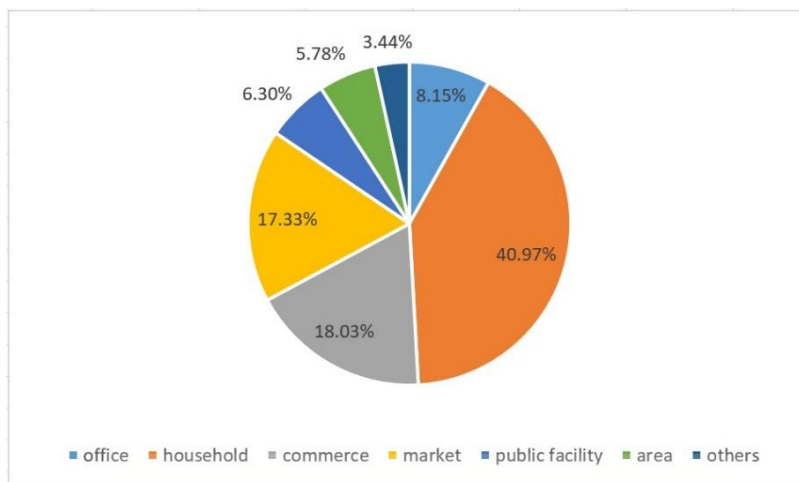


Figure 2:
Waste Composition Based on Sources Year 2021 in National Waste Management Information System (*Sistem Informasi Pengelolaan Sampah Nasional, 2022*)

One of the environmental problems in the village is related to waste. As the population increases, the amount of waste will also increase. Every day waste is always produced, both organic and inorganic (Mandala et al., 2022). Figure 2 illustrates, that households made the most waste, so it requires special treatment related to this waste. Women as housewives who are the most active in producing this type of waste have finally started to contribute to solving this problem. The women's community in Taro Village, Bali is one of the groups that actively participate in the Village's waste management programs, which have proven successful in reducing and handling the volume of waste and even making waste more useful. In other words, a good waste management program could encourage sustainable waste management successes in the village. Based on the background above, the purpose of this study is to analyze the participation of village women in sustainable waste management with several research problem formulations, which are: (1) What is the form of participation of village women in sustainable waste management? (2) What are the factors that encourage the participation of village women in sustainable waste management?

and (3) What benefits are obtained from the participation of village women in sustainable waste management?

LITERATURE REVIEW

A. Gender Equality

Gender equality is a situation where individuals, groups, and institutions consistently treat humans the same way regardless of their gender. Gender equality is all about the same conditions e.g. opportunities, treatment, responsibilities, rights, judgments of both gender and not having the same results/outcomes (Kankaras, 2022). Gender equality is also defined as the concept that women and men, girls and boys have equal conditions, treatment, and opportunities to realize their full potential, human rights, and dignity, to contribute to (and take advantage of) economic, social, culture and political development (UNICEF, 2017). It can be concluded that gender equality is a situation where women and girls have the same conditions of treatment and opportunity in every aspect of development regardless of their gender.

The gender equality goal in SDG-5 aims to achieve gender equality and empower all women and girls. For this reason, gender mainstreaming should be integrated into all SDGs targets and then incorporate local initiatives into policy and development initiatives (Filho et al., 2022). In addition to government organizations, international and local non-governmental organizations also play an important role in promoting gender equality and women's empowerment (Filho et al., 2022; Ven & Pham, 2022). Efforts to achieve gender equality that can be done in rural areas are to strengthen the economic empowerment of rural women (Ven & Pham, 2022). The empowerment of rural women can be started through involvement in various activities that support development in the village. Thus, mainstreaming gender equality at the lowest local level is very important in supporting the achievement of the SDGs.

B. Community Participation

To achieve the SDGs targets, it is necessary to mobilize the community from the lowest level, one way is through community participation. Community Participation (CP) is a process that involves people to participate in planning, implementing and managing their local environment (Sahai, 2015). At the village level, a program will not work if it is not driven by

community awareness in the form of community participation, which needs to be supported by the village government.

According to Slamet et al. (2003), there are three factors driving participation in the development process. First, the existence of opportunities, namely the existence of an atmosphere or environmental condition that the person is aware of that he has the opportunity to participate. Second, the willingness, which is something that encourages or fosters their interest and attitude to be motivated to participate, for example in the form of benefits that can be felt from their participation. Third, the ability, namely the awareness or belief in himself that he has the ability to participate in the form of thoughts, energy, time, or other means and materials.

Community participation has several stages, including the stages of community participation in development which are divided into three stages, namely a) the planning stage, b) the development implementation stage, and c) the monitoring and evaluation stage or assessment (Hardianti et al., 2017; Makhmudi & Mukhtali, 2018; Purnamasari, 2011). Meanwhile, Hermawan & Suryono (2016) and Cohen & Uphoff (1977) both mentioned that the stages of community participation were divided into four namely community participation in planning, implementation, evaluation, and benefit-taking. This research refers to these four stages. While the form of participation refers to Makhmudi & Mukhtali's assessment (2018), which among others are in the form of a) money, b) goods or property, c) energy, d) ideas, e) decision-making, and f) representative participation.

C. Sustainable Waste Management

According to Law of the Republic of Indonesia, Number 18 of 2008 concerning Waste Management, waste is the residue of human daily activities and/or natural processes in solid form. Waste management is a systematic, comprehensive, and sustainable activity that includes waste reduction and handling. Garbage is something that must be managed so that it has added value, can be reused, and does not pollute the environment (Mahyudin, 2014). Waste management is all activities carried out to handle waste from the time it is generated to its final disposal (Sejati, 2009). The waste management mechanism relies on waste reduction and handling, including the following activities:

1. Waste reduction, which is activities to overcome the waste generated by the waste producers (households, markets, and others), reusing waste from the

source and/or at the processing site, and recycling waste at the source and/or at the processing site. Waste reduction will be regulated in a separate Ministerial Regulation.

2. Waste handling, which is a series of waste handling activities that include sorting (grouping and separating waste according to its type and nature), collecting (moving the waste from the source of the waste to a Final Waste Site (TPS) or integrated waste processing site), transporting (activities to move the waste from the source), and TPS or integrated waste processing site, final product processing (changing the shape, composition, characteristics and amount of waste so that it is further processed, utilized or returned to nature and active processing of waste processing activities or residues resulting from previous processing so that they can be returned to environmental media).

The above activities when done correctly can help realize the efforts of sustainable waste management that can generate added value, can be reused from recycling waste, and does not pollute the environment. Sustainable waste management through several stages are among others: 1) reducing waste from its source, 2) recycling and reusing, 3) processing waste into energy resources, and 4) avoiding dumping waste into landfill or as little as possible (Rahim, 2020).

METHOD

A. Type of Research

This study uses a descriptive research method with a qualitative approach. The descriptive qualitative approach is intended to describe and interpret the existing conditions and relationships. Qualitative analysis stages include organizing and managing data, reading and taking special notes, describing, classifying, and interpreting data, and representing and visualizing data (Creswell & Poth, 2017).

B. Research Subjects

This study focuses on describing the participation of village women in managing sustainable waste in Taro Village, Tegalalang District, Gianyar Regency, Bali Province. The selection of informants was carried out purposively to get answers to the research objectives. The women involved in this study is 15 people included representatives of housewives, waste managers, cadres,

Family Welfare Programs (PKK) women, and the Women's Farmers Group (KWT).

C. Research Procedure

This research activity starts from August 2021 to January 2022. Data collection is carried out through field observations, in-depth interviews, Focus Group Discussions (FGD), documentation, and literature studies. The observation was conducted to see the actual conditions that exist in the field so the researchers know what is happening in reality. Interviews and FGDs were conducted with informants to explore answers to the existing research objectives. Informants are getting picked by using a purposive sampling method with certain considerations as mentioned by Sugiyono (2009). Such considerations in this research are the women that actively involved in village waste management processes, such as housewives, waste managers, cadres, Family Welfare Programs (PKK) women, and Women's Farmers Group (KWT), with a total of 20 informants. Thus, documentation and literature studies are carried out through the collection of documents and references related to this research topic.

RESULTS AND DISCUSSIONS

Taro Village is one of the traditional villages in Bali which still preserves their customs and culture inside the community. In every aspect of development that is carried out, apart from being based on national regulations and policies, it also always considers the traditional aspect. Taro Village has several types of extraordinary natural tourism so environmental aspects are a supporting factor in the success of tourism in this village. One of the most important things is keeping the environmental cleanliness in the village waste management program. In line with the SDGs principles, namely: “*No one left behind*”, Taro Village began to involve all elements of society in the development of its territory, including in overcoming problems related to waste. Based on the mainstreaming of gender equality (Kankaras, 2022; UNICEF, 2017), Taro Village has involved the village women in waste management. This is in line with the mandate of Law Number 32 of 2009 concerning Environmental Protection and Management, which provides space for the community to participate in environmental protection and management efforts, namely the participatory principle and the principle of openness. The whole community both men and

women must be involved in this because mainstreaming gender equality is very important at the local level (Filho et al., 2022; Ven & Pham, 2022).

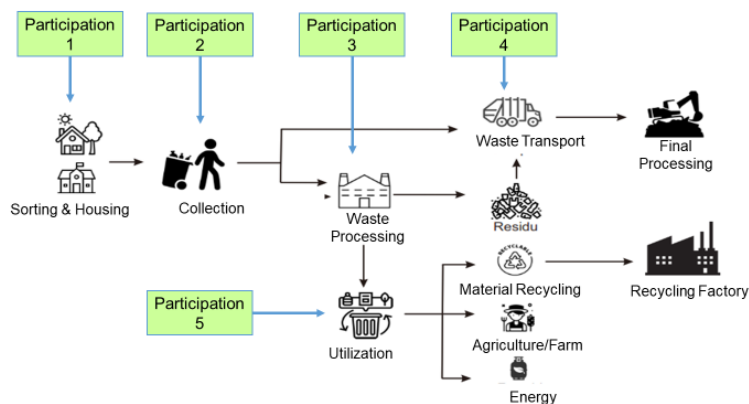


Figure 3:
Participation of Village Women at Each Stage of Sustainable Waste Management (Processed research data, adopted by INSWA, 2021)

The process of participation includes planning, implementing, evaluating, and enjoying the results. In every waste management plan in Taro Village, women are always involved. Planning is usually carried out through village conference which discusses the mechanism and management of waste management. Meanwhile, in the implementation of management, village women are involved in all stages of the waste management practices, including sorting & housing, collection, waste processing, waste transport, and utilization (see Figure 3). At the waste sorting stage at home, women play a role in sorting waste into 2 types, namely organic and inorganic. Then at the waste collection stage, the women collect waste using a container in the form of garbage bags facilitated by the village. The bags are differentiated for organic waste and inorganic waste which are then prepared to be given to the waste carrier who comes according to the schedule, where the waste collection schedule is differentiated between the schedule for transporting organic and inorganic waste. At the waste processing stage, women are part of the BUM Desa waste management business unit employees. Women organize waste in TPS3R and process waste into organic fertilizer. At the waste transportation stage, women are cadres who assist the village in providing education in sorting household waste and utilizing organic fertilizer from waste processing. Meanwhile, in the utilization of waste management, women play a role in using the results of waste processing that has become organic fertilizer, including making the fertilizer for

planting in the yard and in the garden managed by the village women's community.

Table 1:
Forms of Participation of Village Women in the Implementation Stage of Waste Management

Waste Management Implementation Stages	Form of Participation	The Role of Village Women	Role Description
Participation 1: Sorting & Housing	Energy, goods, and time	Household wives	Sorting the waste at home into 2 types, organic and inorganic
Participation 2: Collection	Energy, goods, money and time	Household wives	Carry out garbage collection and payment of garbage fees
Participation 3: Waste Processing	Energy and time	Waste manager TPS3R	Carry out waste processing in TPS3R
Participation 4: Waste Transport	Mind, energy, and time	Cadres	Provide assistance and provide education to the community regarding source-based waste sorting
Participation 5: Utilization	Mind, energy, and time	PKK Women and Women Farmer's Group	Utilizing processed waste that has become organic fertilizer

Taro Village women's participation in the implementation of waste management is carried out in various forms and different roles at each stage (see Table 1). The forms of participation found are in the form of energy, money, time, goods, and thoughts. The most common forms of participation of village women in waste management are energy and time. While the form of participation in the form of money is only done at the waste collection stage where there is a waste fee for each house in the village. When referring to Mahmudi & Muktiadi (2018), the only form of participation that isn't done is decision-making. The role of village women themselves in this case is as housewives, TPS3R managers, cadres, PKK women, and Women Farmers Groups (KWT).

According to Rizqi (2014) currently there are still many parties who have not considered the source of the main problem in waste management, which are paradigms and mindsets. However, in reality, Taro Village has been able to answer these problems where the factors driving the participation of village women in waste management include the willingness, ability, and opportunity to make women's participation come true. At the level of willingness, village women have received the knowledge provided regarding the waste management process, the benefits of waste management, and others that are supported by the village government and parties outside the village who understand waste management. Therefore, village women have a good perception of the environment, attitudes towards environmental management and the motivation to be involved in waste management in the village. Likewise, with the level of ability, Taro Village women have a good level of knowledge, skills, experience, and availability of time in the field of waste management. The results of other studies also show that female respondents of middle and old age are more willing to apply waste sorting behavior (Liu et al., 2022).

Another driving factor is the level of opportunity where the level of institutional effectiveness, the level of ease of bureaucracy, and the level of availability of clear regulations are important drivers in supporting the participation of village women. The research study from Nafurbenan et al. (2022) also revealed knowledge, attitudes, information, and motivation partially and simultaneously affect community participation in waste management. Knowledge has the most dominant influence on community participation in waste management. Chu & Chiu (2003) add that a perceived moral obligation can also further increase the desire to recycle household waste.

In the evaluation process of waste management, village women are involved in evaluating the activities that have been carried out to continue to monitor the course of good management and improve waste management for the better. Figure 4 is proof of the kinds of activities women do.



Figure 4:
**Documentation of Taro Village Women's Participation in the
Implementation of Waste Management**

Eventually, village women could feel the benefits of waste management programs that were carried out, including maintaining environmental quality and the economy. The quality of the village environment can be seen from the clean air in Taro Village where it is proven that there are fireflies that can live well in this village. In addition, plants in the yard of the house and on farms thrive and support the improvement of nutrition and family food security. Through this role, village women can get another benefit from reducing the cost of buying vegetables and fruit and selling processed agricultural products from the use of organic fertilizers from recycled waste. This is in line with Indonesian Law Number 18 of 2008 about waste management, which informs that waste management aims to improve public health and environmental quality and make waste a resource.

Referring to Scheinberg (2010) which states that the failed waste management is still too much in quantity, is in the wrong place, and is not recycled enough. So with the participation of village women in sustainable waste management, it has proven successful in implementing waste management in the village. When referring to the stages of sustainable waste management (Rahim, 2020), the participation of village women has helped reduce waste production from the source where the waste produced in the village has been completely processed in the village so that it does not burden the TPA where village women manage to recycle and reuse waste in the village.

Sustainability will not be able to run without the will and awareness of the community (Mahyudin, 2014) so good environmental management requires the participation of various stakeholders (Sobhani et al., 2022). In line with Sapiains et al. (2022) research, shows that the transformation of institutions, rules, and regulations does not guarantee wider involvement of local communities in solving environmental problems, so a deeper perspective is needed on cognitive and relational change from the bottom-up. It can be seen that there are cognitive and relational changes in this village through a direct communication approach between cadres and the community. Ms. Taro Village Head who is also the Chairperson of the PKK said that the bond of communication between cadres and the community was in terms of providing knowledge about waste management, monitoring, and consultations when there were problems encountered in waste management. Garbage fee collection is also carried out directly as part of the government's friendly relationship with the community to strengthen the relationship between the community and the government.

CONCLUSION

Participation of village women in the flow of sustainable waste management has various forms of participation, which are contained in each stage of management, including sorting, transporting, processing, and utilizing the results of waste processing. Factors that encourage the participation of village women in village waste management development are their own willingness, ability to perform and opportunity to be actively involved. Village women can prove that they are the largest producers of household waste, but also can help to solve the waste problem. Upon their services to their community, they can also increase the family's economic income through their involvement in waste management.

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