

# “Women Empowering Women”: Informal Leadership Education on Becoming “Eco-Heroines” in Solid Waste Management

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## Abstract

**Introduction:** Environmental sustainability has reached considerable awareness among individuals and organisations in some parts of the world. Malaysia and Indonesia also share the same response toward the betterment of the socio-ecological environment. Women’s empowerment through the management of solid wastes received reasonably good interest from women themselves. **Objective:** The article attempts to inform the readers about the virtuous women’s leadership roles to empower womankind to sustain their socio-ecological maintenance. It is the real-life experience of the peasants who turn to be the recyclers and repurposers in two Southeast Asian cities—Kuala Terengganu and Jakarta. **Methodology:** This article is based on an ethnographic study through the eyes and lives of women who directly engage in “something good” for their socio-ecological surroundings, and consequently, get benefits from this informal, lifelong education. This research project utilises methods of one-to-one, in-depth interviews and observation. **Findings:** It indicates that women empowering efforts and leadership encourage them to become effective members of their local communities. They are the “eco-heroines” who empower their women folks through recycling and repurposing solid wastes, particularly the household-based. **Significance:** The article elaborates on the crucial roles of women’s empowering efforts and their participation in a decision-making process that benefits humanities. The direct consequence is that their efforts had produced profound benefits through the elimination of poverty and the improvement of livelihood.

## Keywords

Eco-Heroines, Informal, Lifelong Education, Women Leadership, Sustainable Environment, Women’s Empowerment, Waste Management

## 1. Background

Many cities around the globe raise the issues of environmental behaviour and brought into the problems of waste disposal. The urban areas of India for example have produced total solid waste is about 51 million metric tons (Rawat & Daverey, 2018), with clear efforts to reduce wastes that harm the environment. Since 1994, Denmark had initiated a policy of compulsory levies on the manufacturers of plastic in their efforts to reduce the usage of plastic bags. The effort was able to turn down the use of plastic bags by 66.0 percent (Afroz et al., 2017). Moreover, the local government in Vietnam had implemented separations systems and appropriated categorisation of household waste for applicability of waste management (Kawai et al., 2014; Schübeler, 1997).

Above are some illustrations of the current efforts to reduce human dependence on plastic bags, at the national level. Still, these efforts cannot manage the growing volume of plastic waste produced throughout the world. Few societies around the world are aware that they must not rely on the national levels by government efforts only. They had taken smaller efforts at the societal levels either to solve or minimise the problems. For example, Malaysia and Indonesia started the initiatives by becoming the recyclers and repurposers of plastic bags.

## 2. Introduction

These initiatives were the brain ideas of several female members of the community that eventually gave inspiration to others. They have empowered others that not only benefit them, their village but also the environment. They are an example of eco-heroines. “Eco-hero” is one of the eco-movements that promotes managing the waste and zero waste lifestyle. This research indeed illustrates informal lifelong learning that took place within the research participants’ course of life.

This article elaborates the research findings based on the qualitative methods on the crucial role of women throughout their informal learning in making decisions to ensure the sustainability of eco-friendly development. This study believes many ecological problems can be solved by human empowerment, particularly by women. Increasing awareness of the hazards caused by household waste for example is a good starting point for a better socio-ecological environment. In addition, this study also extends the discussion about the waste minimisation management taken from 4R concepts which are reduced, reuse, recycle and repurpose techniques to minimise waste. All these were obtained via their informal, life-long learning processes.

Most Southeast Asia countries are low-middle income countries. Based on the WECF Annual Report 2016 (WECF, 2017) asserted that the household use of plastics in less wealthy countries is much lower than in wealthy countries due to the poor or lacking waste management. Besides, landfilling waste is still common practice surrounds Southeast Asia countries.

In the early development of Municipal Solid Waste Management (MSWM),

both countries used a conceptual framework as defined by Schübeler (1997) in the collaborative programme of the World Bank, UNDP (United Nations Development Programme) and SDC (Swiss Agency for Development and Cooperation). The framework was based on cooperative development and a complex task that entails suitable organisational capacity between numerous stakeholders in private and public sectors in the participating countries. Among others, MSWM incorporated the functions of collection, transfer, treatment, recycling, resource recovery and disposal of municipal solid waste. The goal of MSWM is to protect the health of the population, specifically low-income groups. Also, it promotes environmental quality and sustainability, supports economic productivity, and it can empower the employment generations. The most important thing of MSWM purposes is to develop MSWM strategies that can be adapted to and carried by the municipality by the local communities (Choon et al., 2017).

By this time, MSWM innovation is improving. Both countries exist the legislation of MSWM. Malaysia having the Solid Waste and Public Cleansing Management Act 2007 (SWPCMA, 2018) mainly respected the management of cleanliness and sanitation. This act was implemented in developed countries such as Japan, Denmark, Switzerland, Germany, and the USA because the main strategies proposed for implementation under the act include a source of separation, efficient solid waste, treatment, interim treatment, and final disposal of solid waste particularly through landfills (Dzwonkowska, 2018; Johari et al., 2014). In 2011, the responsibility of MSWM was transferred from the Local Authorities to the Federal Government. The effect of this situation was brought into the establishment of The Department of National Solid Waste Management and the Solid Waste Management and Public Cleansing Cooperation. They integrated undertake the 3R (Reduction, Reuse, Recycle) strategies in the effort to control solid waste and focused on system and deposit refund system. Fauziah and Agamuthu (2012) stated that the act claimed to bring MSWM in line with global state-of-the-art practices at no additional cost to the public and it tremendously improved all over the country.

### **3. Municipal Solid Waste Management (MSWM) and Women's Empowerment**

There is a clear literature gap in a specific case exploration on MSWM in both countries. Using an ethnographic approach, the study explores the involvement of women as the “eco-heroines” of their community. Through “eco-heroines” community initiative, women are empowered and continuously empowering other women. The process of learning and re-learning among women in Indonesia and Malaysia occurred. This initiative educated and encouraged women to have an awareness of MSWM and bring a new direction in looking at the eco-loving behaviour among people (Mattessich, 2009). Additionally, researchers explore the levels of participation in 4R activities among women in community development in Malaysia and Indonesia.

Even though these two countries already have specific authorities for the Municipal Solid Waste Management (MSWM), the technique, facilities and treatment may be different. Yet the sure thing is that they develop quite slowly. The blame is partly due to human attitudes and awareness toward waste management. Some people still practise improper and non-sustainable waste management such as burying it in the ground or simply burning the waste (Koutra, 2015; Kolzow, 2009). People may still dump waste along the roadsides, inside the incomplete building structure, near bushes and in bare plots of land without any structures. Yet, there a few individuals at both places exhibited concern about the amount of solid waste generation and attempted to sort solid waste properly. They are the group of people that are worth getting involved with and work hand-in-hand with the state governments in the initial planning process.

### ***Malaysian Situation***

The Malaysian government authority has a similar concern for its municipal management and services of solid waste. In early 2019, the Terengganu state government developed a green technology project known as “the waste-to-wealth environmentally friendly project”. It is a partnership with a private company that uses REnescience technology—the first of its kind in Southeast Asia, to process between 400 and 500 tonnes of waste every day. The project expects to generate electricity for the population in Terengganu.

The discussion of the community-based approach is always related to empowerment and when it is engaged with the sustainability of the environment may prove to be a challenge. On the other hand, it establishes the possibility of transit to more practices of a sustainable environment that can contribute effectively to nature, the ecosystem, and human well-being. According to Ambepitiya and Gao (2019), women’s empowerment is a framework of gender equitability to enjoy their work at individual, household, community, and broader levels essentially. Nevertheless, the important part that women perceived women’s empowerment is also norms and values from one culture to another. Moreover, their status can be improved through literacy, education, training, and awareness. Based on that, one of the effective women’s empowerment programmes is to develop and encourage women to make decisions that would pave the way to elevate their lives in society.

The community-based approach also realised to reach empowerment strategies. It is recognised globally as a fundamental element to achieving progress in all sectors because it has multiple dimensions which help to see the relationships of what local communities share, contribute and act to ensure the community has equal access. Many countries have implemented MSWM. Most of them are also using an approach of women’s empowerment as their strategy. Many research also explored women’s understanding of MSWM. For example, is Tripoli, Libya. MSWM project touched on the attitudes and behaviours of middle-income housewives. At the level of middle-income housewives, the research found that their participation in the process of learning to manage waste. They became a master to distinguish recyclable materials at the source and donate

them to scavengers who collect, sort and sell them for a living (Hoz, 2010).

#### ***Indonesian Situation***

The Southeast Asia scenario has the problem of solid waste usually collected by the municipal council without a source of separation or pre-treatment and transported directly to landfills or open dumping sites. They are rarely managed technically because of budget constraints. In particular, this study took such cases from Malaysia and Indonesia in terms of their management and services of solid waste.

Indonesia familiarised new laws and regulations on waste management in 2008. Government Regulation No. 81 in 2012 regarding household waste management and Ministry of Environment Regulation No. 13 in 2012 regarding the implementation of the reduce, reuse, and recycle (3R) concept through waste banks are some latest legal updates about the waste management of the country. The authorities carry out integrated waste management by allowing the waste hierarchy (3R) which includes collection, sorting, and disposal of the waste at the landfill sites.

MSWM in Indonesia has been encouraged since 2008. Similarly, like Malaysia, the Ministry of Environment of the Republic of Indonesia also promoted 3R strategies using a community-based approach of the waste bank. Moreover, new regulations of MSWM which are Regulation No. 13 in 2012 also introduced to implement 3R through waste banks. These two laws of MSWM had been brought into the idea that integrating stakeholders have a responsibility and carried out to reduce the impact of waste (Sulami et al., 2018).

The explanation above indicates that Malaysia and Indonesia apply 3R strategies to manage solid waste. Malaysia uses a deposit refund system, while Indonesia uses waste bank management. Two countries needed support technically and financially from developed countries and international organisations. Another support is from the local communities that participated and they used the methods of community-based approaches.

## **4. Women's Empowerment as the Image of Leadership Capabilities: Stories of Malaysia and Indonesia**

### ***MSWM and Informal, Lifelong Learning: A Case of Terengganu***

The research site was in Kuala Terengganu, in the state of Terengganu. The researchers chose a group of women community who were waste collectors, recyclers and repurposers. Observations were done at three sites: 1) at their homes, 2) at the garbage landfill and 3) RiD (the pseudonym where they work). The researchers followed the day-to-day experiences of five women research participants, who are waste collectors, recyclers and repurposers. They were observed and interviewed on the three above mentioned sites to explore their insights on work activities while researchers connected them with the objective of the research. The ages of the participants were ranging from 28 to 54 years old. Their main job scope was only to separate the plastic- and paper-based recyclable items. On the other hand, their male counterparts had varieties of job scopes

such as collecting recyclable materials from collection centres around the state, picking them from personal homes, receiving them from individual donors, to processing them into manufactured resins at the RiD factory. The participants did not involve in the factory manufacturing processes. Since it had a gendered job specification, there was a gendered job pay, in which women received much less pay than men.

The participants received a fixed monthly income of RM500-RM700 at RiD, not inclusive of over-time work. According to them, their husbands allowed them to work as their income eased the household financial burden. One participant mentioned that “At first, my husband was reluctant (to allow me to work). But my family needs additional money. We are very poor. My husband only has odd-job work around the village. Not sufficient for us. And not fixed too. Only after having the fixed income (which received) from RiD that I managed to organize household expenditures better”.

The demographic data of the spouse’s employment found that three husbands had odd-job work; one worked as the lorry driver at RiD; and one garbage collector with the municipal council. When asked, all of them informed that their household monthly income was ranging from RM1800 to RM3000. These incomes were accumulated from the wife-husband work. Based on the literature, the researchers had later identified them as the B40 women. They were categorised within the “bottom 40 per cent” members of the population, or in short, the B40, whose monthly household income is RM3855 and below (USD945 and below) based on currency exchange on March 29, 2019 (*Khazanah Research Institute, 2018*).

Their homes were either at the sides of RiD or just a little farther away. All of them arrived to work on foot. They were the so-called “women-at-home” workers. They did not leave behind their homes and care for the sake of work. As quoted, “I can just run back, if anything is needed at home”. They were also mothers to children within the age range between 1 to 20 years old. Most of the participants’ children were still at school or college. Only one of them already worked at a pre-loved clothes boutique. These children were still under the participants’ care.

These women worked at RiD on weekdays from 9 am to 4 pm. But according to them, the working time was quite flexible. They normally started their job after seeing their children off to school for the school morning session and finishing their household morning tasks. If required, the RiD Management might call them for overtime jobs during late afternoons or over the weekends. Normally on some Saturdays, they would go to the garbage landfill, which was about 10 kilometres away from their homes. They were the waste recyclers at RiD, but here, they were the collectors of the wastes. They rode on motorcycles to the landfill as early as 6.00 in the early morning. They scavenged many sorts of recyclable wastes of which many were exchanged with money at the landfill centre itself or RiD. When asked, the Centre’s Supervisor informed the researchers that the exchange rates vary according to the items per kilogram (roughly): 0.20 sen

for paper; 0.30 sen for steel; RM2.00 for aluminium; 0.30 sen for plastic, just to provide a few examples. Since the exchange rates were almost the same at both sites, at most times, the participants just exchanged the collected items at the Centre. The less wanted ones such as plastic bags and anything made of thin PVC materials were not wasted. They were brought home.

They later repurposed them into something new and useful, such as transforming them into purses, pencil cases, flowers, etc. For ethnographic researchers, describing regular routines, normal behaviour around the home and simple interactions were more easily done in words. Researchers observed the mundane activities of how the wastes have been cleaned and dried at homes. On some agreed Fridays, the five participants together with a few community members gathered together to create new stuff out of the sweet wrappings, plastic bags, and old fabrics. It was an interesting moment to see them enjoying themselves and interacting with each other freely while recreating unwanted materials into wonderful cottage crafts.

These products were simple creations, yet they were created out of their noble acts, which they might not realise. When asked, they stated, “We enjoyed doing this. Making new things from old things. But what I enjoyed most is to be able to talk and gossip with my friends here (laugh aloud). I have my times, apart from families’ time”. Their lived experience of “being enjoyed” had different connotations for interpretation. One interpretation, the enjoyment which they experienced was about the accomplishment to repurpose things. In the process, they folded the old candy or sweet plastic packages into particular folds and arranged each fold nicely according to the coordinated patterns to transform them into a nice elegant purse or flower. The design depends on each one interest and speciality. This transformation from being “ugly” to “beautiful” is a process that elevated their sense of enjoyment among themselves. Another interpretation of enjoyment was about the expression of their feelings to be able to socialise with friends in one social setting. The “my times” as mentioned in the excerpt above could be further interpreted as the sense of eclectic enjoyment in which experienced by most full-time house managers once they had the chance to do out-of-routine activities. They have friends, apart from families, who shared the same interest and hobbies.

Social researchers believed that ethnographic research is one technique that is most suitable to seek new insights into the communities (Bryman, 2006; Blaxter et al., 2010; Brown & Strega, 2005; Davis & Hughes, 2014). This research captures the experiences of women’s empowerment at work in collecting, recycling and repurposing wastes. It follows the participants’ life experiences from their workplace, to homes and the garbage landfill. Since this kind of ethnographic account was not documented fully, the research aims to obtain in-depth descriptions and narrations of their activities. The origin of this story derives from the woman participants’ poverty-stricken life. The employment opportunities for them are limited due to some persistent negative elements of customary practices (or ‘adat’). “I am not allowed to work”; “I should stay at home... to take care

of children and family” are among the normal phrases conversed by the researchers. This situation is more affected by the rural women, who have no satisfactory academic qualifications.

Moving forward, the participants unintentionally “forced” themselves to shoo away any social obstacles to earn some monies for family maintenance. They forced against all odds elements such as cultural expectations and also not-so-odds aspects like husbands. By “forcing”, they are actually “empowering” themselves. They received “approval” at the end because of the obvious monies that came into the households. Also, approval comes from the community members. One of them was saying “My husband allows me to work and collect garbage now, though he was not happy before, due to working with the garbage. Since I bring home daily incomes, he sees the coming of monies as good things for our household maintenance. He is now encouraging further me in handicraft making. He says that I look happy working together with friends. And yet, they still, bring money home with the selling of those handicrafts (that are made from garbage). I hope more womenfolk join us as garbage collection and repurposing them is fun and brings lots of benefits like friendship, apart from monies, of course (laugh)”. This excerpt summarised the socio-psychological-economic influences on women who were “before” and “after” working. They were happier, more content, and more confident than before. This transformation would benefit their families and community, not to mention the country.

The influence of community participation in waste management activities is extremely important to bring in major positive changes. Proper waste management has the potential for social-ecological sustainability. According to Kotler et al. (2008), community participatory projects may lead to income generation. In particular, women’s equal participation in the planning process provides employment opportunities for them (Kotler & Keller, 2006).

#### ***MSWM and Informal, Lifelong Learning: A Case of Indonesia***

The essence of choosing a case study was to explore MSWM activity through women’s empowerment among members of the Nyiur Community (NYC). The name “Nyiur Community” was inspired by the coconut trees. Because a coconut tree has many benefits, ranging from the roots to the fruits where each has its function. From the philosophy of the name, this community hopes to contribute to developing people. Moreover, the existence of the Nyiur Community also aims to protect the socio-ecological sustainability of the district and people. Furthermore, it expects to play a continuous active role by encouraging the education process.

The Nyiur Community has specifically an interesting case because it is one of the most successful community development projects in Jakarta. It carried out many activities to empower women through the implementation of its MSWM project. It is an interesting community development because it is managed by volunteers from Nyiur Community whose motto is “I want to dedicate myself to the people while I am still to able do”.

Nyiur Community is a community association which is located at Jalan H.

Gaim no.50 RT 10 RW 02, Petukangan Utara (sub-district), in district of Pesanggrahan (Kecamatan), South Jakarta. Petukangan is a slum sub-district that is a flood-inflicted area. This area is close to the Pesanggrahan River. This river causes regular flooding for this area because the watershed is occupied by housing. Despite those ill situations, Nyiur Community has a clear awareness of providing life for its people, particularly in the field of a healthy environment, empowerment, education, and creativity. This community has a recycling programme that has the potential to achieve a sustainable environment.

The selection of the community development as the research setting and the members of the Nyiur community as the participants was made due to the harmonious blend between the active participation of the members in MSWM programmes and the existence of the Nyiur Community. Moreover, the ill physical environment motivates the members of the Nyiur Community to have an awareness and provide MSWM assistance for its people, particularly in the field of social-economic, education, and creativity. This community has its own MSWM programme which has the potential to achieve a sustainable environment. Besides, most community development with empowered activities in Indonesia concentrates on small areas such as RT and RW. RT (Rukun Tetangga) is a “neighbour solidarity” unit that consists of less than 30 households. Yet, RW (levels of officials and residents) is a “community solidarity” unit that consists of more than 30 households. Both RT and RW are people’s organisations that are approved by the government. These organisations aim to conserve Indonesian values such as cooperation (gotong royong).

In terms of its physical conditions, the Petukangan sub-district is a flood-prone area due to an improper drainage system. In this situation, the community residents live in an ill condition. Besides, most of the residents are uneducated and do not receive proper medical service from the hospital. Because of that Nyiur Community development started in Petukangan Utara, South Jakarta. In February 2016, after the last regular flooding in this area, the owner initiated to have a “Green Project” which is a waste recycling programme.

The owner believes people who polluted the soil with garbage problems are the culprit of environmental damage and the various sources of diseases. Every people produce 1 kg of rubbish every day and mostly in the form of plastic waste. Whereas this type of waste is difficult to unravel. Usually, plastic waste takes a century to become biodegradable so perfectly by nature. She had assumptions that if plastic waste is not managed properly, it will damage the environment.

In 2015, the owner started with the education training and collaborated with some stakeholders. Due to her background is a member of the Family Welfare Movement (PKK), and the objective of the PKK organisation is to empower poor mothers in the urban centres for better living conditions. Therefore, she knows what she will do and her targets to be empowered. According to that background, after meeting with some stakeholders he and her members in were decided to focus on Municipal Solid Waste Management (MSWM) to reach their

goals and the 3R projects were their efforts for socio-ecological movements.

The Nyiur Community champions community development, by empowering its community, particularly its women. The reason why Nyiur Community is a champion in developing the community is that the approach opted by it is suitable for the community even for the smallest level of community to improve their living condition.

Many NYC members have the same opinions that their motivations to participate brought them in to be better people. For instance, Yn said, she became an independent woman after joining NYC. Fd also had the motivation that she was joining NYC to learn how to have a sincere character. For Da, her motivation to join NYC was to make herself become more useful for her contributions. The rest of the eight participants were having the same reasons and motivations to join NYC such as to increase their knowledge of the socio-ecological environment point of view, become active women, care for their environment, increase financial of the family, network, and their experiences were increasing. These motivation factors pointed out to change them and their family. Yn for example believed that after joining NYC her life is more blessed because she can contribute something to her environment. Fd has an opinion that she learns to have a beneficial act and be generous to people. Tu, Dy and Sa acquired to be persistent and not give up on something that they already started. The rest of the participants believe that they explored their abilities much after joining NYC.

Furthermore, after its establishment, the community continues with its empowerment activities in the Kamal district, West Jakarta. The physical condition in this district is poorer than in Pesanggarahan. They are mostly labourers and work in a home-based industry, and produce waste plastics. Due to home-based industry area which produces most plastic recyclable products. The owner has an opinion that it is a place that empowers people through the recycling programme. Nyiur Community in Kamal district does not only educate its people about recycling activities but also teaches them about a healthy lifestyle. This opinion motivates the members to build their motivation and ability to do something in Kamal Districts.

There was a huge potential community-based activity for the education of MSWM. They began the educational eco-empowerment programme on 4R (Reduce, Reuse, Recycle and Repurposer). It has attracted residents' interest. To illustrate the matter, during the observational visit in December 2016, it observed the running of the educating waste recycling programme in stages.

In the first stage, they educate the public about the importance of MSWM for a healthier environment. The residents were extremely interested and brought various patterns of plastic waste during the day. Later, in the second stage, the residents of the NYC, conducted counselling in a yard, which was interesting because they would occasionally have it, informally, such as having a picnic. It is reckoned this social interaction technique strengthens the bonding between the residents and NYC. This may be an influential factor in the success of NYC programmes. Finally, NYC coached them to systematically process waste in the last

stage. Starting from the collection of plastic waste to the cleaning, followed by the folding, up to the sewing of the plastic wastes to make specific products, which could drag up to several days or weeks. The community is happy to see the product that they produced from scratch is ready to be sold.

Apart from collecting recyclable products, NYC also supports the face-to-face promotion of waste reduction and recycling. This is a crucial way of sustaining community participation in separating the wastes. The findings show that face-to-face promotion is a crucial way of sustaining community participation in separating the wastes. There are many steps to conducting a face-to-face promotion. The first step is to have those who join NYC collect plastic waste from households. Plastic waste can range from food packaging, beverage packaging, and plastic bags. The second step is to collect these plastics waste in Bank Sampah. The third step is to begin the cleaning process. In this process, the volunteers usually use a detergent to clean the plastic waste and after that plastic waste is dried and can be used and shaped into a pattern. Before the members design the handcraft from plastic waste, they start with cleaning the waste. All of the plastic wastes are then placed in a bucket together with water and detergent. When it is done, the plastics are shaped into the desired pattern. Finally, the patterns are cut into squares for a bag or wallet.

Moreover, an education on the waste management is not ended in the last stages of sold products. They educated people continuously, and NYC collects mainly plastic waste such as food packages. These wastes are targeted because they have low market value and some of them are not yet recycled in other areas. What the Community does is to stimulate a financial source for its members by providing a collection outlet called “Bank Sampah”, where money is exchanged with plastic packages.

Bank Sampah or waste collection points to public awareness about recycling and encourages community participation in waste recovery by providing collection points for plastic wastes. Participants and members can drop these plastic wastes off at a local waste collection outlet. Moreover, waste banks can be easily found in neighbourhoods across Indonesia because it was a suggestion by the local government that suggests that every household should separate organic and inorganic waste. On the other hand, only certain waste banks have efforts to foster collective awareness of managing waste due to the expensiveness of the dustbin. Through Bank Sampah, people continuously educated people and become a new recycling habit in both districts. It also is a part of grassroots movements because waste banks are established as a community-based organisation. It works from the ground level upward to address environmental issues. The waste bank in NYC is organised by residents that joined this community and have shared interests in waste management around their neighbourhood.

Volunteers also shared the same purpose when joining the recycling activities. Getting acquainted is among the main reasons for participation, besides gathering with the residents from the same district, and making use of their leisure time. It was a simple form of empowerment and a good activity for keeping a

healthy environment. To them, participating the recycling activities gives them new knowledge and is interesting.

In the eco-empowerment programme, the members have their name as “garbage peasants”. Their functions are to pick up and collect waste plastics from any place in their districts. Besides, they even opened a recycling “clinic” that involves women cultivating garbage plastic wastes into handicraft products. These products are transformed into bags, wallets and flower vases. The marketing record indicates that these handicraft products are top-selling. Most importantly, the Nyiur Community gave support and even shared their knowledge with the residents about utilizing plastic garbage wastes for economic value in supporting a family’s finance.

The direct impact of handicraft sales from recycling activities brought in additional incomes for the households, which is most welcomed by the residents. For example, the price for one bag ranges from Rp 50.000 to Rp 350.000 (converted to Malaysian ringgits is around RM25 to RM150). The price depends on the level of difficulty and the time spent crafting. In the earlier establishment of Nyiur Community, the venue was made unavailable for the outlets. They sold the recycling products at craft exhibitions which were recommended by the local government as their partner.

Leadership in community organisations plays an important role in community development. The leader can lead grassroots innovations and nurture them. Usually, grassroots innovation begins with the social motives and the development of communities (Ani et al., 2021). Community leadership is embedded into social networks with the stakeholders. A community leader can also support niche building by working with middleman actors which enhance its presence and ensure commitments from the residents, specifically for women (Alotaibi, 2020). Therefore, leadership is a vital element to manage the community and organised the actions.

Based on the observation, it is important to have a charismatic lead character, especially those possessed by the owner of the Nyiur Community. Residents’ respect and trust enable her to do a “top-bottom approach”. She knows everything from the top-level community to the bottom level of community, particularly to better empower people in socio-economic conditions. Moreover, she never pushes her members but she always works collectively to solve and organize their future with her knowledge of the recycling programme and improving their skills.

The owner elaborated on the matter: “(For me) Nyiur Community and I are like ‘sugar and water’”. Once we are diluted, I cannot separate myself from becoming one entity. Thus, whatever I conduct empowerment activities, full cooperation from members is necessary. We must not blindly instruct people to do something, for example regarding the impact of the waste plastics problem. If we are “bossy”, people will never join the empowerment activities. (For this matter) I try to teach them to make a craft out of plastic waste. Plastic waste is our potential recyclable products that relate to the environment. We teach them to

care. When I gather with my volunteers, I always remind them with a hadith of the Prophet Muhammad (peace be upon him) “The best people are those who bring most benefits to the rest of humankind”.

According to the interview with the owner of Nyiur Community, it can simply say that she can mobilise people in their community. She is a potential leader, when she speaks to others, people will listen to her and agree with her idea because she does not blindly instruct people to do something. She can easily shape the communities with her idea for Nyiur Community existences. She encourages people to be good as it mentioned in hadith that “the best people are those who bring most benefits to the rest of humankind”.

Findings show that the most significant MSWM programme is proven to empower women such as the waste recycling programme. It is a very potent activity that educates people on waste management. Another potential of waste recycling activity is bonding the relationship between the people and community.

This activity portrays empowerment to the upcycling of the recycled. It can be said that recycling programmes are the “new look at habitual of management waste using the 4R (Reuse, Reduce, Recycle and Repurposer) references”. It is an effort to foster collective awareness of managing waste due to the expensiveness of the dustbin. The Nyiur Community started the empowerment efforts from the grassroots, where the activity of waste recycling was to reduce the volume of garbage for developing waste eco-cycles.

Furthermore, most volunteers share the same purpose when joining the recycling activities. Getting acquainted is among the main reasons for participation, besides gathering with the residents from the same district, and making use of their leisure time. It was a simple form of empowerment and a good activity for keeping a healthy environment. To them, participating the recycling activities gives them new knowledge and is interesting. People care about their environment by decreasing the pile of garbage. Tu said:

*“The first time I joined this community, I brought a hundred pieces of waste plastics. Most of them are from food packaging. I started to learn about cutting and cleaning waste. I joined the community because I was not to learn how to make a bag from plastic waste. I was so curious about it. I practised every day during my leisure time. I was so envious of UmmiTuti, she can do many patterns very fast. Even though I was in pain from my swollen fingers, Ummi Tuti refused to give up on me and guided me. If I was stuck, I texted her through Whatsapp. Then Ummi Tuti will share the method by posting a photo. I was so happy when I was done with one pattern. For one week I practised the same pattern. I became addicted to doing the pattern and learnt other patterns from simple to complicated ones. Alhamdulillah, I finished making one”.*

The uniqueness of these socio-ecological activities in the Petukangan and Kamal districts is that the residents can start with the small things to empower their community. In the case of NYC, it discovered that it has introduced a new initiative to address this waste crisis by offering a very radical, yet effective solution. Based on the interview inputs which it has obtained, NYC provides a place

to disseminate information on waste reduction and recycling and also encourages community members to participate in waste segregation.

Solidarity is an asset for the community when doing empowerment. Without the common interest of contributing to and worshipping Allah SWT, they would have never registered as members. At first, the call of doing charity touched the people's hearts and then evolved towards the community.

The strategy, which Nyiur Community's owner used to invite the female members to join their activities, is by providing a skill set-based programme. For example, Nyiur Community organised cooking classes in the women's houses. The owner focuses on building a good rapport with the female locals until they trust her. The presence of a social bond enabled her to educate female members about a healthy environment.

Usually, they gathered at the park to discuss empowerment activities that they can do for their districts. While discussing, they also carried out recycling activities, such as collecting plastic waste in the park and around the neighbourhood. The cleaning and separating processes took place, which developed better relationships among them. Taking up handicraft skills might take some time, but the gathering of the locals promotes caring attitudes toward people and the environment.

The Nyiur Community kept on inspiring residents. Many housewives were interested to join the programmes. They wanted to serve people as much as they can. As stated by Yn a housewife who joins this community. According to her: "In this world, we live to worship Allah. One of the ways is to increase our charity acts. When Nyiur Community was established, I did not think twice. I (straightaway) registered straightaway. Here, I was able to explore my potential to act for a better environment. We should have sincerity in our hearts. If not, we will be far away from empowering people. We can contribute anything here because not all actions can be measured by money".

## 5. Discussions

This article highlights women's effort in taking up the leading role in eco-empowerment via the eco-empowerment programme. It is an adaptive response to municipal solid waste management (MSWM) faced by all participants in research localities—Malaysia and Indonesia. It also gives a perspective on the reasons for joining the eco-empowerment programme with a common interest in contributing to the environment and worshipping Allah SWT (i.e. God).

In every community development, the members' participation plays an important role. A community development that focuses on doing empowerment gives more attention to the people by giving solutions to their problems. Moreover, there are reasons for participating, such as the benefits received, including the benefit of gaining cultural advantages through membership. Participation also benefits them by expanding their social relationships and network between members and residents. It also creates social trust which acts collectively for the

common good.

The outcome of community development is seen in its improvement. It is the way that community development takes action that is related to leadership. Good leadership is necessary to bring all stakeholders to the table and reconcile differences on a vision and path forward. As such, successful communities make leadership an integral part of their community development plan. Leadership is related to power and influence. Power may be defined as the ability to influence the actions of others, and leadership may be viewed as the effective use of power.

Many factors that are related to leadership such as personal qualities, control of access to such resources, personal reputations, their ability to get things done, and their confidence and positive outlook. Furthermore, capabilities, social capital, and improvement are also some of the elements that can influence the direction of community development. The chemistry among the locals in community development is based on bonding, bridging and linking social capital. The combination of the three elements which are bonding, bridging and linking, enhances empowerment participation among the people in the community. This is because strong solidarity can only be formed when the members have, both material and symbolic objectives to gain and are achievable through organised participation and action.

Moreover, social capacity can influence development through structural and cognitive approaches. The first approach is structural wherein inter-connections between members of the community create social networks. This network thus facilitates community development in getting access to information, ideas, products, and services. The second approach is cognitive wherein inter-connections create a shared sense of purpose, increase levels of commitment, promote mutual trust, and strengthen norms among the members of the community.

## **6. Conclusion**

MSWM may have a framework to mobilise. It is required for women's empowerment that they should know what is needed to be done, by whom, when, and to what end. In addition, effective and reactive leadership at all levels is required from local responsible to individuals, particularly women, and all stakeholders as all would have a part to play. If every stakeholder is taking part, it will bring them into social solidarity. It is a unity that produces sympathies among societies. It binds people together as a family. It is a framework that holds society together.

A community focuses on establishing the capacity of neighbourhood residents, associations, and organisations to work with, either collectively or individually. To work individually, community concerns on the capacity itself and empowerment of neighbourhood residents to identify and receives access to opportunities and effect changes. As well as developing personal leadership. To work collectively, on the other hand, community building focuses on the nature, strength, and scope of relationships among people within the neighbourhood. Through them, that connections and networks associated beyond the neigh-

bourhood are formed.

The eco-empowerment programme is an adaptive response to municipal solid waste management problems. It also gives reasons for joining a recycling programme. For instance, without a common interest in contributing to other people and the environment, and also worshipping Allah, the participants would have never registered as members. Therefore, an act of charity has touched the heart of the people.

This eco-empowerment programme is simply an unregulated collection of domestic waste from individual households. From an outsider's perspective, this activity might not bring many benefits or bring any significant effect, but it does. This effort may recover the human ecological system while regenerating resources. It can be seen as a contribution to preserving the environment and socio-environment sustainability. Besides, it can also portray the community's life experience as an empowering agent, which benefits all.

The result of this study is expected to be useful for the practitioners that have a concentration in the field of eco-empowerment. Moreover, it gives a guideline to women to have a progressive change both individually and socially. It also may reach higher and better levels of awareness about socio-ecological environmental issues in both countries. And most importantly, women's empowerment brings the possibility of changing the world for a better humanity.

This article is based on an ethnographic study via observations and interviews. It was found that participation from female members was the main role in eco-empowerment. Their lived experiences signified the importance of informal, life-long learning and education. Throughout their lives, they observed, learned and respected the eco-systems surrounding them.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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