

**THE POTENTIAL OF SOCIAL CAPITAL (NETWORK)
IN COMMUNITY BASE SOLID WASTE MANAGEMENT**

Case Study: Solid Waste Management in Semarang, Central Java

MASTER THESIS

A thesis submitted in partial fulfillment of the requirements for
the Master Degree from University of Groningen and
the Master Degree from Institut Teknologi Bandung

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DOUBLE MASTER DEGREE PROGRAMME



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POLICY DEVELOPMENT
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ABSTRACT

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In solid waste management, social capital has an important role that could generate a sense of togetherness, solidarity, and also the responsibility to moving forward so that the waste problem could be faced and solved together. Network is one the aspects that build the social capital beside the norm and trust.

The purpose of this study is to describe the potential of the utilization of the network as social capital of the society in waste management. Furthermore, it has conducted stakeholder analysis and also analysis of network utilization as social capital in waste management. This research uses the case study research method. Afterward, all the process was analyze with the descriptive qualitative analysis techniques and also qualitative comparative.

In this study obtained that the success of waste management activities due to the role of the community within their community organizations activities and also the relationship with the NGO, private sector and government. The use of network as social capital can achieve successfully in solid waste management due to mobilization of existing resources within the community (bounding social capital) and easy access to the other resources (bridging social capital) in waste management. Several factors which encourage the occurrence of bounding social capital are the intensity of the meeting, a sense of ownership for the organization, and leadership. Meanwhile, the factors that affected to the bridging social capital is a common purpose, paternalistic relationships, trust, and the existence of interest. In brief, to carry out their activities, the community organizations also require the other party's role as a mediator to promote and facilitate activities, financiers, procuring facilities and infrastructures and also the distributor of recycled waste products.

Keywords: Network, Social Capital, and Waste Management

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PREFACE

This thesis is conducting during February to September 2011 at Environmental and Infrastructure Planning Program, the Faculty of Spatial Science, Rijkuniversiteit Groningen. The subject of this thesis is about social capital in solid waste management. This research aim is to give recommendations for improvement of solid waste management by utilizes the social capital.

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Groningen, September 2011

Dulfikar Ali Achmad

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CHAPTER 1 INTRODUCTION

Community-based systems are critical for environmental management programs like solid waste management in developing countries because these countries are rich in communal resources and social capital although they are often poor in financial resources. The possibility of tackling the most serious environmental and health problems with limited resources such as solid waste management will require cooperation between groups of actors (Mwangi, 2000). This study will describe the lessons from the current practice in term of the potential of networking between actors that seen as social capital in infrastructure management by examining the case study. The purpose of the research is to identify the potential in building a network in community base solid waste management. The study will take place in Semarang, Central Java, Indonesia.

1.1 Research Background

Solid waste management still becomes a problem in most developing countries around the world especially in the cities. In many cities of developing countries, private or public systems of waste management are inadequate, only able to collect between 30 to 50 percent of solid wastes and most cities dispose solid waste in ways often detrimental to the environment such as open burning, burying or dumping in rivers (Hoorweg & Thomas, 1999). Solid waste management (SWM) is a major responsibility of local governments, typically consuming between 20 and 50 percent of municipal budgets in developing countries (van Beukering, Sehker, Gerlagh, & Kumar, 1999) . It is a complex task which depends as much upon organization and cooperation between households, communities, private enterprises and government authorities as it does upon the selection and application of appropriate technical solutions for waste collection, transfer, recycling and disposal (UNEP, 1996).

In fact a solid waste management system is a continuous maintenance system which can not separated from human activities as its primary sources. To keep the service running, continuous participation of the community receiving the service is required, for example, to store the garbage in a specific bag or bin, to

bring it to an agreed point, to separate it in dry and wet waste etc. This means that community participation is a rather crucial aspect of solid waste management, maybe even more important than in any other urban service. It will also involve networking groups that exist in those communities.

The importance of networks as social capital in waste management could be seen in Dhaka, Bangladesh (Pargal, Huq, & Giligan, 1999). In Dhaka waste management system used a voluntary waste management system (VSWM). VSWM is a system to collect garbage in every household which done independently. VSWM shows the important role of social capital in practice, where this activity can generally succeed in areas that have high social capital because solid waste management needed an organized coordination. According to the opinion of the Woolcock and Narayan that the norms or values and networks which called as social capital in society are that allows people to act collectively or together (Woolcock & Narayan, 2000). As exemplified by the existence of trash disposal committees in the neighborhoods seen as a direct benefit of collective action, which is a function of the social capital in the neighborhood. In order to make the coordination work properly and smoothly required a voluntary organization or association that can manage the waste properly.

Base on the experience in Dhaka, the formation of the network as one element of social capital is has proven capable of providing a positive impact on the provision of public services (solid waste services) based on the community (Pargal, Huq, & Giligan, 1999). Network has an important role as one of the parameters of social capital to be able to move people in a community. The network facilitates communication and interaction, enabling the growth of trust and strengthens cooperation. Healthy communities tend to have social networks are robust where people know each other and intersect with others. Then they will build a strong inter-relationships, either formal or informal (Onyx & Bullen, 2000). Putnam (1995) argues that social networks in close cooperation will strengthen the feelings of its members as well as enlarge the benefits from the participation of these members.

Networking can be a social capital within a community because its provide benefits in daily activities in the community. The existence of social capital allows

the common achievement and shapes the behavior of togetherness and community organization (Lesser, 2000). Social capital make a commitment from each individual for more open each other, trusting, giving authority to any person who chooses to act in accordance with its responsibilities. This tool produces a sense of togetherness, solidarity, responsibility and at the same time will moving forward together. Participation in the local networks and mutual trust will make it easier for the group to reach a decision and implement the work together (Grootaert & Bastelaer, 2001). The expansion of positive social capital, especially for communities with few economic resources and political, consequently result in increasing economic and political performance and improved quality of life.

Most of cities in Indonesia are generally unable to handle problems of solid waste management optimally. There are many factors caused this condition, including a number of bottlenecks in the system and mechanism for waste management, institutional forms that are not in accordance with the authority to their job description and inadequate human resources. There has been an over-reliance on costly western waste management methods and the application of this technology fails because it is centrally organized, heavily subsidized, lacking in community cooperation, and is based often on disposal (Supriyadi, Kriwoken, & Birley, 2000). Moreover, the limited facilities and infrastructure waste collection, sewage treatment technology has not exactly as well as lack of support and community participation also becomes an actual problem at present. Although many Indonesian municipalities have attempted to reform their solid waste management system through a variety of funding and planning strategies, none of them has yet succeeded in finding a long-term solution to waste management. A variety of collection, transfer, and haul and disposal methods have been tried but have had limited success.

Any project that base on the community can not ignore about the local social capital which exists in the community, including the project such as a solid waste management. The social capital has the role to encourage people to participate in doing work together. People relationship in the community, which they know each other and communicating interactively between them are one of the potential aspects to support the project. It creates network between people in

the community and also network with other communities or organization. Furthermore, the study will attempt to find the better understanding about the potential of network as social capital in community base solid waste management. In this study will use the case study which takes place in Kelurahan Jomblang, Semarang City which have applied the community solid waste management in that area.

1.2 Research Objective

The main purpose of this research is to describe the potential of social capital which is in this study will focus on the networking in the community base solid waste management. In order to get this main purpose, firstly the research will examine the current implementation of community base solid waste management in other cities such as Ho Chi Minh City and Dar Es Salam. Secondly, this research will identify the existing solid waste management in Semarang (Jomblang). Finally this research will identify the network as social capital in community base solid waste management by analysis the waste management stakeholders and identify the network that involved in the Jomblang waste management.

1.3 Research Questions

Nowadays, many efforts to create a solid waste management base on community especially in several developing countries. There are indications that the project only runs properly in the first or second year, but after that it stopped and must handle again by their local government. One of the problems that may cause this discontinuity is the lack of knowledge of local government about the potential network which can support the solid waste management. People usually only follow the rule or directions that have given by the government and they do not have any sources or supports to develop their social network.

The way to engage people is by understanding about what they concerned in recent daily life or in the future. The government as the authority needs to address what they were worried about or they will not want to get involved in the projects.

People need to trust the institutions that involved and also be convinced that their own contribution is meaningful, and believe that the actions are achievable within the bounds of their current lifestyle.

As mention in the introduction that network is have such a role to succeed community base solid waste management. A better understanding of how these work and support the social capital can be an empowering experience for those who uninformed about how to engage people or mobilize the resources. This study tries to explore and describe how the network as part of social capital in the community base solid waste management. There are three research questions which have to answer by this study, as follows:

- *How is the current situation of solid waste management in location study?*
- *How are the stakeholders of waste management work in order to address Solid Waste Management in location study?*
- *How does the network (social capital) involve in the community base solid waste management?*

1.4 Chapter Outline

The report of the research consists of six chapters. Chapter one introduces the research background, objectives, research questions which relate to the objectives. At the end of chapter one the structure of research report is drawn to show the connectivity between chapters. Chapter two elaborates theoretical foundation of the research. Some theory and definition about solid waste management, social capital and its parameter, stakeholder analysis, and best practice in solid waste management are discussed here. Chapter three specifically explains about the methodology and methods being used in this research. Chapter four provides exploration on findings that relates to the research problem and questions. The findings comprise compiled secondary data and interview result. Chapter five discusses on aspects such as the use of network as social capital in waste management and stakeholder analysis in solid waste management in location study. Finally, chapter six provides some conclusion and recommendations.

CHAPTER 2 SOLID WASTE MANAGEMENT AND SOCIAL CAPITAL

This chapter explains about the theoretical background that is used in approaching the research problems and questions. Some definitions and discourse on solid waste management, social capital and best practice in solid waste management will be presented and interconnected. This is important to get better understanding about social capital related with solid waste management and their characteristics. Due to extensive literature on social capital, theoretical discussion on this issue is oriented to find out some social capital aspects that are significant to attain successful solid waste management. Finally, concluding remarks are drawn to give overall picture of this chapter.

2.1 Solid Waste Management

Human activities generate waste materials that are often discarded because they are considered useless. These wastes are normally solid, and the word waste suggests that the material is useless and unwanted (Tchobanoglous & Kreith, 2002). However, many of these waste materials can be reused, and thus they can become a resource for industrial production or energy generation, if managed properly. Waste management has become one of the most significant problems of our time people lifestyle all over the world produces enormous amounts of waste, and most people want to preserve their lifestyle, while also protecting the environment and public health. Industry, private citizens, and local government are searching for means to reduce the growing amount of waste that urban homes and businesses discard and to reuse it or dispose of it safely and economically.

Waste also interpreted as something that is not used, unused, not liked or something that is discarded, which comes from human activities and does not occur by itself. It could be the remains of materials that have certain treatments, either because it has taken its main part, or due to processing, or because there are no benefits, which are socioeconomically no value and in terms of the environment may cause pollution or disturbance in sustainability.

Sources of solid wastes in a community are, in general, related to land use and zoning. Although any number of source classifications can be developed, the following categories have been found useful: (1) residential, (2) commercial, (3) institutional, (4) construction and demolition, (5) municipal services, (6) treatment plant sites, (7) industrial, and (8) agricultural.

Management of solid waste reduces or eliminates adverse impacts on the environment and human health and supports economic development and improved quality of life. A number of processes are involved in effectively managing waste for a municipality. These include monitoring, collection, transport, processing, recycling and disposal (UNEP, 1996).

Reduce, Reuse, Recycle

Methods of waste reduction, waste reuse and recycling are the preferred options when managing waste. There are many environmental benefits that can be derived from the use of these methods. They reduce or prevent green house gas emissions, reduce the release of pollutants, conserve resources, save energy and reduce the demand for waste treatment technology and landfill space. Therefore it is advisable that these methods be adopted and incorporated as part of the waste management plan.

Waste reduction and reuse

Waste reduction and reuse of products are both methods of waste prevention. They eliminate the production of waste at the source of usual generation and reduce the demands for large scale treatment and disposal facilities. Methods of waste reduction include manufacturing products with less packaging, encouraging customers to bring their own reusable bags for packaging, encouraging the public to choose reusable products such as cloth napkins and reusable plastic and glass containers, backyard composting and sharing and donating any unwanted items rather than discarding them.

All of the methods of waste prevention mentioned require public participation. In order to get the public onboard, training and educational

programs need to be undertaken to educate the public about their role in the process. Also the government may need to regulate the types and amount of packaging used by manufacturers and make the reuse of shopping bags mandatory.

Recycling

Recycling refers to the removal of items from the waste stream to be used as raw materials in the manufacture of new products. Thus from this definition recycling occurs in three phases: first the waste is sorted and recyclables collected, the recyclables are used to create raw materials. These raw materials are then used in the production of new products.

The sorting of recyclables may be done at the source (i.e. within the household or office) for selective collection by the municipality or to be dropped off by the waste producer at a recycling centers. The pre-sorting at the source requires public participation which may not be forthcoming if there are no benefits to be derived. Also a system of selective collection by the government can be costly. It would require more frequent circulation of trucks within a neighborhood or the importation of more vehicles to facilitate the collection.

Another option is to mix the recyclables with the general waste stream for collection and then sorting and recovery of the recyclable materials can be performed by the municipality at a suitable site. The sorting by the municipality has the advantage of eliminating the dependence on the public and ensuring that the recycling does occur. The disadvantage however, is that the value of the recyclable materials is reduced since being mixed in and compacted with other garbage can have adverse effects on the quality of the recyclable material.

Waste Collection

Waste from our homes is generally collected by our local authorities through regular waste collection, or by special collections for recycling. Within hot climates such as that of the Caribbean the waste should be collected at least twice a week to control fly breeding, and the harboring of other pests in the

community. Other factors to consider when deciding on frequency of collection are the odours caused by decomposition and the accumulated quantities. Descriptions of the main types of collection systems are given in the table below.

Table 2.1 Description of the main collection systems (Hann, Coad, & Lardinois, 1998)

System	Description	Advantages	Disadvantages
Shared : Residents can bring out waste at any time			
Dumping at designated location	Resident and other generators are required to dump their waste at a specified location or in a masonry enclosure	Low capital costs	Loading the waste into trucks is slow and unhygienic. Waste is scattered around the collection point. Adjacent residents and shopkeepers protests about the smell and appearance
Shared container	Residents and other generators put their waste inside a container which is emptied or removed	Low operating costs	If containers are not maintained they quickly corrode or are damaged. Adjacent residents complain about the smell and appearance.
INDIVIDUAL : The generators need a suitable container and must store the waste on their property until it is collected			
Block collection	Collector sound horn or rings bell and waits at specified locations for residents to bring waste to the location vehicle	Economical. Less waste on street. No permanent container or storage to cause complaints	If a family members are out when collectors comes, waste must be left outside for collection. It may scattered by wind, animals and waste pickers.
Curbside collection	Waste is left outside property in a container and picked up by passing vehicle, or swept up and	Convenient. No permanent public storage	Waste that is left out may be scattered by wind, animals, children or waste pickers. If collection

	collected by sweeper		service is delayed, waste may not be collected or some time, causing considerable nuisance.
Door to door collection	Waste collector knocks on each door or ring doorbells and waits for waste to be brought out by resident	Convenient for resident. Little waste on street	Residents must be available to hand waste over. Not suitable for apartment building because of the amount of walking required.
Yard collection	Collection laborer enters property to remove waste	Very convenient for residents. No waste in street.	The most expensive system, because of the walking involved. Cultural beliefs, security considerations or architectural styles may prevent laborer from entering properties.

Treatment & Disposal

Waste treatment techniques seek to transform the waste into a form that is more manageable, reduce the volume or reduce the toxicity of the waste thus making the waste easier to dispose of. Treatment methods are selected based on the composition, quantity, and form of the waste material. Some waste treatment methods being used today include subjecting the waste to extremely high temperatures, dumping on land or land filling and use of biological processes to treat the waste. It should be noted that treatment and disposal options are chosen as a last resort to the previously mentioned management strategies reducing, reusing and recycling of waste (figure 2.1).



Figure 2.1 Solid Waste Management Hierarchy (UNEP, 1996)

Integrated Solid Waste Management

Integrated Solid Waste Management (ISWM) takes an overall approach to creating sustainable systems that are economically affordable, socially acceptable and environmentally effective. An integrated solid waste management system involves the use of a range of different treatment methods, and key to the functioning of such a system is the collection and sorting of the waste. It is important to note that no one single treatment method can manage all the waste materials in an environmentally effective way. Thus all of the available treatment and disposal options must be evaluated equally and the best combination of the available options suited to the particular community chosen. Effective management schemes therefore need to operate in ways which best meet current social, economic, and environmental conditions of the municipality.

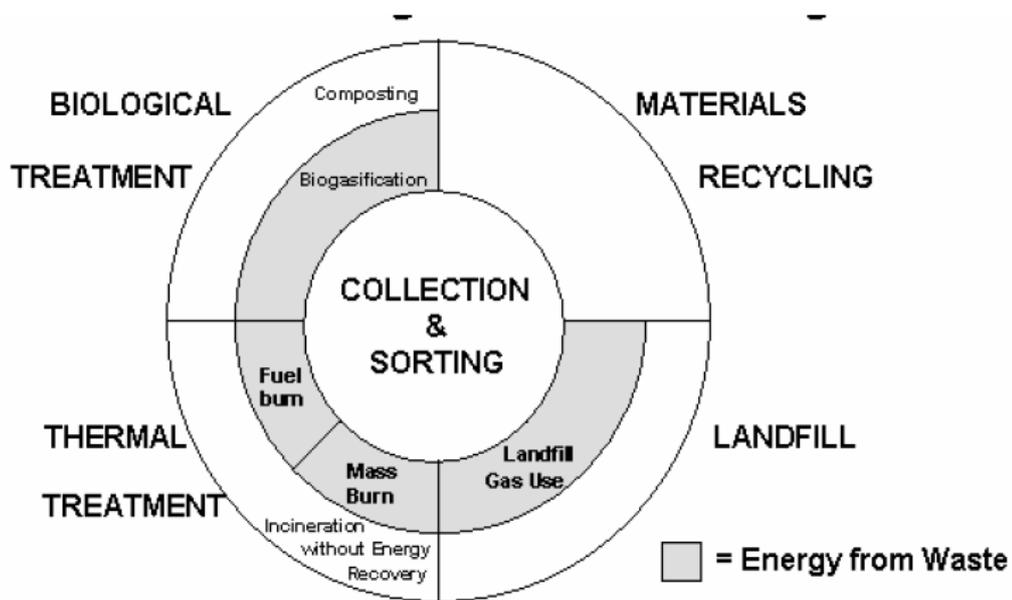


Figure 2.2 Element of Integrated Solid Waste Management (UNEP, 1996)

Integrated Sustainable Waste Management

The concept of ISWNI has been developed by WASTE, Advisers on Urban Environment and Development, and has first been presented in 1995 during the UMP Workshop on Municipal Solid Waste Management in Ittingen, Switzerland (Klundert & Anschütz, 2000). ISWM is based upon the principles of equity, effectiveness and efficiency. It combines three components to produce sustainable solutions to waste management problems. The different elements of the whole waste trajectory from waste generation to final disposal are mapped out. Not only are the technical and financial aspects of the system analysed, but also environmental, social, health, legal, political, institutional and economic aspects.

This approach ensures that all the local issues affecting waste management in a specific area are taken into consideration (Rosario & Scheinberg, 2004). All of the stakeholders involved and/or affected by the waste management trajectory are identified and encouraged to participate in the ISWM assessment and subsequent planning and implementation phases of projects as a means of creating consensus and ensuring commitment to the final ISWM solution.

2.1.1 People Participation in Solid Waste Management

Public participation is a key element in the management of waste (garbage), without the participation of the community both in funding and in implementation, then the waste was only wishful thinking. Therefore community participation in creating a clean and healthy environment is crucial. According to Ahmed and Ali, the role of the people may take the form as following (Ahmed & Ali, 2004):

Waste pickers

Millions of poor people in the teeming cities of the developing countries support themselves and their families by directly or indirectly participating in waste collection and recycling. For instance, over 20,000 women work as paper pickers in Ahmedabad city (Salahuddin & Shamim, 1992). It has been estimated that up to 150,000 waste pickers are active in Municipal Corporation of Delhi area (Chaturvedi, 1998). In fact, all cities in the developing world have a sizeable population that ekes out a living from picking waste generated by their wealthier neighbors'. This is the most vulnerable and marginalized group that comprises mostly of women and children.

Itinerant/stationary waste buyers

Itinerant buyers are people who walk around town to buy any waste material that they can sell for a profit such as paper, plastic and glass bottles and metal cans. There are also stationary buyers who operate shanty shops to buy waste brought to them by others including waste pickers. These are very small-scale operations.

Small-scale recycling industry

Small businesses involved in SWM are mainly recyclers of waste material. They purchase items like glass, metal cans and plastics. Using these wastes as raw materials, they manufacture saleable products. Their suppliers may be waste pickers, itinerant and stationary waste buyers, even microenterprises. These are self-sustaining operations that remain in existence as long as the demand for their

product remains. They may have informal linkage with the public sector as buyers of waste from the public sector SWM workers.

Large-scale recycling industry

Large factories are industrial establishments that buy suitable waste material in bulk to use in their manufacturing process. Compared to small industries they buy waste in large quantities. Their suppliers may be itinerant/stationary waste buyers or any operator who can store waste until a saleable quantity is reached. These are profit-oriented operations whose sustainability depends on the market forces.

CBOs

Community-based organizations (CBOs) are informal institutions that are formed by members of a community to address a need such as a park, sports facility or community centre. Sometimes these organizations respond to deplorable environmental conditions in their locality by initiating SWM operations, mainly primary collection and street cleaning. They are usually run by activist youths with support from the community. Providing a social service is usually the primary moving force in such operations. Breaking even financially is sought rather than making a profit. Sustainability of this type of initiative depends on the activists of the project to attract financing and remain accountable.

NGOs

Non-governmental organizations (NGOs) may enter into SWM related activities for a number of motives—social concerns for waste pickers, introducing new recycling technology (e.g. composting), extending micro-credit, concern for the poor environment in which their beneficiaries live, or simply because they are contracted by other agencies to implement a project. They are driven mainly by the need to achieve their goal, and not to make profit. Their scope of work may include primary collection, rehabilitation of waste pickers, building awareness in the communities, dissemination of information, research and the introduction of new technology. NGOs traditionally work closely with communities and there is

usually good cooperation from the community members. Sustainability of NGO initiated operations depends on the length of their 'interest' in the project or on external source of funding. However, sometimes the initiatives may be picked up by entrepreneurs and developed into self-sustaining enterprises.

Micro-enterprises

Micro-enterprises are for-profit business operations. These are run by entrepreneurs. Entrepreneurs are by definition innovators and agents of change. Their focus is on creativity, innovation and the constant search for new products or process ideas. They want to know what their customers want and strive to deliver that at the best competitive price (Carson, Cromie, McGowan, & Hill, 1995).

Based on the above explanation can be seen that the community's role in waste management varies depending on the level of interest and source of funds available. Communities can be involved in the smallest role as collectors, small to non-governmental organizations. Although the role of the different communities but the exact role of such a positive impact on the presence of waste around them.

2.1.2 Stakeholder Analysis in Solid Waste Management

Base on Integrated Sustainable Waste Management (ISWM) there are several stakeholder that should be consider in the municipal waste management, such as city council, central/provincial government, NGOs / CBOs, service users, private informal sector, private formal sector and donor agencies (Klundert & Anschitz, 2000). Having identified the main problems and the cause and effect relationship between them, it is then important to give further consideration to who these problems actually impact on most, and what the roles and interests of different stakeholders might be in addressing the problems and reaching solutions.

On some occasions it may be advisable to undertake the stakeholder analysis before embarking on the problem analysis. For example, if it is likely that there are strong competing interests within or between stakeholder groups that may influence their input into the analysis of the development problem, then this should be known beforehand so that the problem analysis can ensure such

divergent views and interests are appropriately ‘captured’ and factored into the analysis (AusAID, 2005).

The main purposes of stakeholder analysis are to understand the interests of different groups, and their capacities to address identified problems, and design activities that appropriately address institutional capacity, distributional and social issues. Stakeholder analysis is about asking the questions: “Whose problem” and, if an activity is then designed: “Who will benefit?” Stakeholder analysis is thus an essential element of both poverty and gender analysis. Stakeholder analysis also helps to determine who needs to change the way they operate/work in order to address problems and thus achieve desired objectives.

The main steps in stakeholder analysis include identifying the principal stakeholders (these can be at various levels, eg local, regional, national), investigating their roles, interests, relative power and capacity to participate, identifying the extent of cooperation or conflict in the relationship between stakeholders, and interpreting the findings of the analysis and defining how this should be incorporated into activity design (AusAID, 2005). Other suggestion about the steps in stakeholder analysis are coming from Norad (1999), The first phase of stakeholder analysis is to build a comprehensive picture of the interest groups, both individuals and groups and then identify all the parts involved by writing people, groups and institutions that are affected by environmental problems. Following by categorize them into interest groups, individuals, organizations, groups, and others and also discuss the person's interests and viewpoints that will be given priority when performing analysis of problems, particularly gender (Norad, 1999).

The main actors which included in this analysis have the potential not only to win but also potentially to lose. So in the stakeholder analysis there is some recommendation that should be considered such as:

- An incorrect assumption about the views and interests of others often happens if we do not ask them directly. In conclusion, always provide the opportunity for each group involved to speak for themselves express their opinion.

- Man and woman have a range of different activities and different perspectives to a problem. Women should get more attention to ensure they get the opportunity to express their own opinions.
- Planners need to distinguish between active stakeholders and parties involved passively.
- Planners should not be fooled by the stakeholders conducting fictitious. They should all be truly engaged in their social activities.

2.2 Social Capital and Network

This literature consist of social capital definition, social capital parameters, the type of social capital, network capital as one element of social capital and social capital benefits. More detail can be seen below:

2.2.1 The Definition of Social Capital

The term 'social capital' has been applied to a variety of ideas that generally concern economic returns from networks of social relationships. While there has been limited work in economics on providing a theoretical context for social capital, there is a growing empirical literature that identifies considerable economic returns to networks of social relationships, to trust and norms of reciprocity, and to institutions that foster civic engagement.

The common meaning between social capital with other capital is that the capital is productive because it is a product of human relations to one another, particularly intimate relationships and consistent so that the effect on community productivity. Like other forms of capital (ie human, financial, physical), social capital is productive, providing material benefit for individuals who are connected to other people and groups (ie networks and relationships) (Coleman, 1988). However, social capital is different from financial capital, because social capital is cumulative and increases with itself (self-reinforcing) (Putnam, 1993). Therefore, social capital will not be exhausted if used, but increasing. The destruction of social capital is more often caused not because of we using it, but because it is not used properly. In contrast to human capital, social capital also refers to the ability of people to associate with others (Coleman, 1988). Relying on the norms and

shared values, the association between humans resulted in the trust which in turn has a huge economic value and measurable (Fukuyama, 1999).

There is some understanding of social capital such as (Putnam, 1995) mention about social capital as features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit. It means that in social capital could be consist of trust, norms, and networks which are combine in social organization form. Supporting this idea (Fukuyama, 1995) prefer to said that social capital is anything that makes the community work together to achieve common goals on the basis of togetherness. Meanwhile, James S, Coleman (1998) explain the social capital as a tool for understanding social action theoretical perspective that combines sociology and economics (Coleman, 1988).

Social capital is also understood as the knowledge and understanding shared by the community, as well as patterns of relationships that allows a group of individuals perform a productive activity. It is in line with was presented by the World Bank (1999) that social capital means more to the institutional dimension, the relationship created, the norms that shape the quality and quantity of social relationships in society. Social capital did not mean only the number of institutions and social groups that support it, but also adhesive (social glue) that holds together the members of the group as a whole. So in simple way I can conclude that social capital can be understood as a resource available to individuals who come from group interaction because of the trust, reciprocity and cooperation.

2.2.2 The Parameter of Social Capital

Referring to the Ridell (1997), there are three parameters of social capital, namely trust, norms and networks. Trust, as explained by Fukuyama (1995), trust is the expectation that grows in a society that is shown by the behavior of honest, orderly, and cooperation based on the norms shared. Social trust is the application of this understanding. (Cox, 1995) later noted that in a society that has a high level of trust, social rules tend to be positive; relationships are also collaborative. He said 'We expect others to manifest good will, we trust our fellow Human

Beings. We growing niche to work cooperatively, to collaborate with others in collegial relationships (Cox, 1995). Social trust is basically a product of good social capital. The existence of social capital are well characterized by the presence of non a solid social institution; social capital gave birth to a harmonious society (Putnam, 1995). Destruction of social capital will lead to anomie and antisocial behavior (Cox, 1995).

The second parameter is norms, social norms will be very instrumental in controlling the forms of behavior that grows in society. Understanding the norm itself is a set of rules that are expected to be obeyed and followed by members of the community in a particular social entity. Understanding other norms which are understandings, values, expectations and goals which are believed and executed jointly by a group of people. The norms can be derived from religious, moral guidance, and standards of secular as well as professional codes of ethics. These norms are usually institutionalized and contain the social sanctions that could prevent individuals from doing something deviant and customs prevailing in the society. These rules are usually not written collectively but understood by every member of society and determine patterns of behavior that is expected in the context of social relationships. The norms can be neither a precondition nor a product of social trust.

Network as social capital parameter is explain by several researcher. Dynamic infrastructure of the social capital networks is cooperation relationship between people (Putnam, 1993). The network is facilitating communication and interaction, enabling the growth of trust and strengthen cooperation. A healthy society is likely to have a solid social networks. People know and meet other people, then they start to build a strong inter-relationships, both formal and informal (Onyx, 1996). Putnam (1995) argues that social networks in close cooperation will strengthen the feelings of its members as well as the benefits of that participation.

2.2.3 Network as Social Capital

Social networks can be characterized as primarily ‘horizontal’, in which individuals share relatively equal status and power, or primarily ‘vertical,’ with

asymmetric relationships based on hierarchy and dependence. Putnam (1993) argues that horizontal networks such as “neighborhood associations, choral societies, cooperatives, sports clubs, mass-based parties, and the like” are the building blocks of ‘networks of civic engagement.’ These networks are “an essential form of social capital: The denser such networks in a community, the more likely that its citizens will be able to cooperate for mutual benefit”. Trust and reciprocity to sustain civic networks (as social capital) are self-reinforcing because as these networks become more dense the costs of opportunistic or selfish behavior increase.

Specifically on the social capital, the research focusing in the three types of social capitals which explain below. The usefulness in making distinctions between Bonding, Bridging and Linking Capital, on the basis that Social Capital is multidimensional and not a single entity of which people have "more" or "less" (Asian Development Report, 2002) :

- Bonding Social Capital - refers to the "social glue" that binds relatively homogenous groups together: or rephrased: "the trusting and cooperative relations between members of a network who are similar in term of social identity." For example: ethnic groups; family relations and friendship circles.
- Bridging Social Capital - refers to the "social oil that lubricates relations": the more cross-cutting "weak ties" between heterogeneous groups, or said differently "the connections between those unlike each other yet on relatively equal levels of status and power" For example: business associates and acquaintances
- Linking Social Capital - refers to the vertical collection across power and authority ranks, or the "norms of respect and network of trusting relationships between people who are interacting across explicit, formal, or institutional power or authority gradients in society" (Szreter & Woolcock in Jacob, 2009).

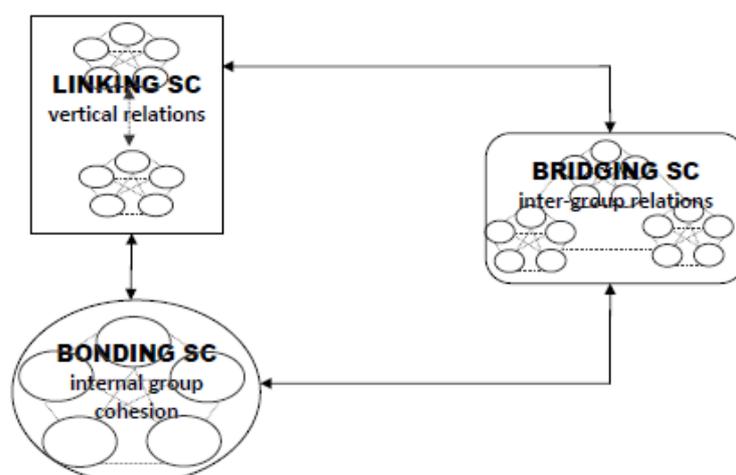


Figure 2.3 Three Types of Social Capital (Szreter & Woolcock in Jacob 2009)

A study by CENI distinguishes between Bonding, Bridging and Linking Social Capital and they have developed a framework for Social Capital indicators by driving from those indicators which identified by the World Bank. They try to reorganizing indicators into the three social capital dimensions as below:

- Bonding Social Capital - refers to internal cohesion or connectedness within a community;
- Bridging Social Capital - refers to the levels of engagement between communities: and
- Linking Social Capital - refers to the engagement between community and voluntary organizations and resource agencies and policy makers (Jacobs, 2009),

The indicator for each type of Social Capital has been summarized in the table bellow:

Table 2.2 : Indicator of Bonding, Bridging and Linking Social Capital (Jacobs, 2009)

Type of SC	Core Element	Indicators
Bonding SC	Empowerment	1. Increased confidence to participate in group activity 2. Contribute skills and leadership to group activity

	Infrastructure	3. Connect and network with other people and groups 4. Marginalized people represented in group structure
	Connectedness	5. Levels of trust between people and groups 6. Sharing information and resource between people 7. People working together to achieve shared goals
Bridging SC	Engagement	8. Level of engagement with other groups/communities 9. Quality of structures of facilitate engagement 10. Understanding of group interdependence
	Accessibility	11. Willingness to engage outside communities /sectors 12. Know how to deal with differences between sectors
	Innovation	13. Explore and adopt new ideas to meet community needs 14. Appropriateness of new solutions to changing needs
Linking SC	Resources	15. Formal contracts with resource/development agencies 16. Value of additional resource leverage
	Influence	17. Participation in public form at local and regional level 18. Formation of alliances and change policy

2.3 Social Capital in Solid Waste Management (Lesson from Ho Chi Minh, Bangkok and Dar Es salam)

This literature consists of waste management in Ho Chi Minh City and Bangkok, and waste management in Dar es Slam, the Government of Tanzania. More detail can be seen below:

2.3.1 Waste Management in Ho Chi Minh City and Bangkok

Social capital is unique, generally every region has its own characteristics. Simply, social capital is a resource that could make something available to individuals who come from group interaction because of the trust,

mutual relations and cooperation (Carpenter, Danieri, and Takahashi 2004). Social capital produces a sense of togetherness, solidarity, responsibility and at the same time will progress together. In the environmental management, the need for social capital, including the network aims to manage the infrastructure can be sustained.

This case will be discussed about the network in Bangkok and Ho Chi Minh City which already applied in the waste management successfully. In Bangkok, managing household affairs handed over to women. This is due to the characteristics of women who tend to be conservative in Bangkok. Level of equality between women and men is still low. But in this city, the relationship between the neighbors, especially women with other women are very closely. Women in this city who was then involved either directly or indirectly in the waste management. Some women play their role to help their neighbors by collecting their waste. On the other hand, their neighbors also had a role to help the living conditions of women who collect garbage.

In Ho Chi Minh City, women considered capable of working with men. In this town, women and men share in financial responsibility and decision-making on household management. Women may also play a role inside and outside the home. By law women have equality with men. It is the women who worked hard preparing for a meeting with the People's Committee and representatives from DOSTE (local Ministry of Science, Technology and Environment). They requested that these representatives can help facilitate garbage service.

According to social capital understanding can be seen that the existing forms of social capital in these two cities are different. In Ho Chi Minh City, a network that potentially is bonding social capital that is the networking between women. Network is then used in waste management. While in Bangkok the network used against the people's representatives to tackle the waste issue. The network that is potentially worked in this case is linking social capital.

2.3.2 Waste Management in Dar es Slam, Tanzania

In Dar es Slam, the Government of Tanzania has tried to implement community-based waste management, by involving NGOs and community organizations. However, NGOs and community organizations are still feeling not included yet their presence with the local government contractor. This is indicated by the absence of clear support by the government against the existence of NGOs and community organizations, especially in the distribution of income. As a result, NGOs and community organizations are more runs in an environment of low-income communities where the contractor ignores this environment.

In this environment, NGOs and community organizations have the opportunity to organize even the scavengers with easy to reuse and recycle materials to be sold in the market. The scavengers are given an understanding of the benefits and importance of the environmental management, then they are trained in order to recycle the waste. The presence of the NGOs and community organizations has contributed to the job creation and income generation for youth and women in the city (Smith, 1996). They also involve themselves in campaigns to preserve city environment with a reduction in combustion, landfill, strengthen social relationships and improve community life spirit. Based on the above conditions can be seen that social capital plays in Dar Es Salam is the existence of a network (network). The existence of NGOs and community organizations that can actively cultivate capital

2.4 Concluding Remarks

Network approach can be used to determine the existence of social capital in society by measure the presence of certain types of bonds in a network and then assumes that the bond is qualitatively generate social capital consistently to all people. In the analysis conducted is required to perform the grouping of individuals within the community as in the independent class, race, ethnicity and gender.

Society plays an important role in waste management in a community, in society has a social capital that is different from one place to another place. One

approach to understanding the existence of social capital in society is to approach the network (network) that exist in society. We can only know that a particular network are likely to have and generate social capital by using statistics, but to be able to reveal how those possibilities could happen in the society requires but a matter of statistical interpretation. Among the types of social capital (bonding, bridging or linking) there is a possibility presence of varying dominance. It is where social capital will affect the community's role in waste management in the neighborhood.

From the explanation about waste management, social capital and network above, as to understand about relationship between those theories which will conduct in this research we conclude in the conceptual framework into diagram as bellow:

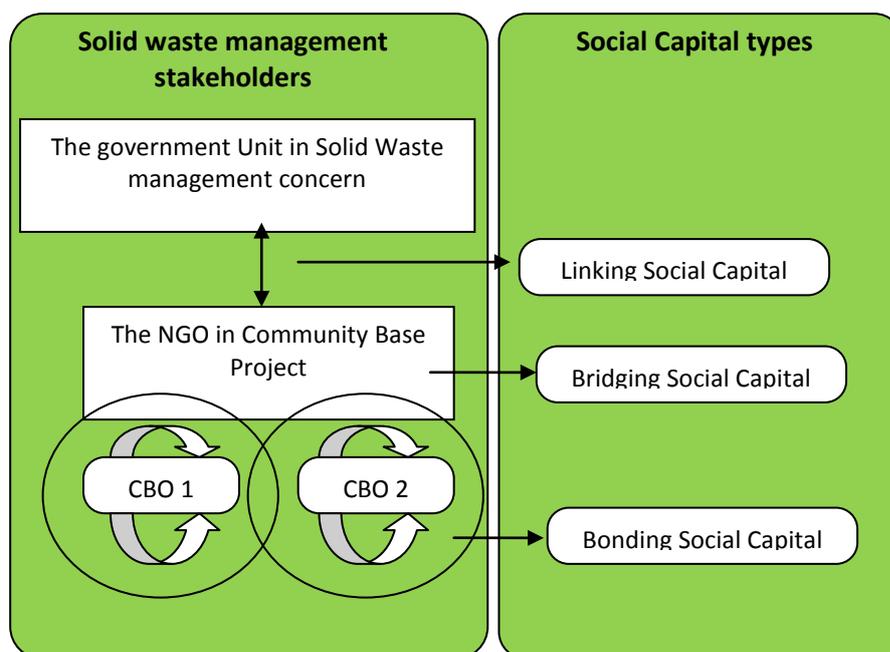


Figure 5.1 Conceptual Framework of Network as Social Capital in Solid Waste Management

Three types of social capital could be seen on the relationship between stakeholders which concern with the solid waste management. Inside the community base organization should be found the bonding social capital that creates people power to move together within their organization. In the process to gain their objectives usually they have to communicate with other people from

other organizations. The cooperation that has conduct between those organizations creates new type of social capital called as bridging social capital which in this case support by the NGO. Furthermore the NGO connected with the authority to support their action by policy and legalization. This also could be mention as one of the social capital type called as linking social capital.

CHAPTER 3 METHODOLOGY

The method chosen was a case study methodology, according to Creswell is an exploration of a “bounded” system (a system limited to geography, a specific time period and focused on a group of individuals, organizations or events). A case study methodology can also be used to explore a case (or multiple cases) over time through “detailed, in-depth data collection involving multiple sources of information rich in context” (Petrusevich, 2005). To study such a case, the researcher must engage in various activities that will help to understand the case study from internal and external points of view. This could be achieved through interviews, documentary research, participant observation and others.

The methodology for a case study involves assessment and research of multiple information sources by using the methods described above. The findings can be examined using a holistic analysis by looking at the whole case, or as an embedded analysis, which is concerned with a particular element of the case. This process reveals the description of the case and analysis of the themes and findings (Creswell, 1998).

In this chapter will explains about how this research would be operated within a framework that links between research questions, data requirements, and methods needed to analyze those data. In general, there are three main activities conducted in this research: data collection, literature review, and qualitative analysis.

3.1 Data Requirement and Acquisition Methods

Data collection and literature review are done simultaneously to build theoretical base of solid waste management, social capital and network and to elaborate solid waste management in location study (Chapter 4). Data is collected through two methods: secondary data collection and semi-structured interview. This part describes the data collection process, starting from defining the required data, data sources, data acquisition methods, to the data analysis methods. Data used in this research divided in two group; primary data, obtained from field

survey/observation and semi-structured interview with local people and organization; secondary data, gathered and derived through literature survey, internet browsing, and secondary data collected from office and other instances.

Respondents were selected purposively (purposive sampling) from the organization or local association concerning with network in solid waste management, and from the waste management stakeholders in Jomblang. It will take from the local government, community base organization, NGO in community base project in Kelurahan Jomblang. On this research sample amount determined by the information required. The respondents have chosen by their competency in their field in waste management and by their expertise. Even the respondents may only one each the organization but they are already represent their organization specifically in the waste management concern. Base on research requirement and consider the resource limitation, observational object selected are as follows:

Community base organization (CBO) :

- Alam Pesona Lestari (APL)
- Family Welfare fostering Group (PKK) Kelurahan Jomblang
- Karang Taruna Kelurahan Jomblang

Local Government Organization

- Sanitation department of Semarang City (DKP)
- Environment Department of Semarang City (BLH)

Non Government Organization (NGO)

- Bina Karta Lestari Foundation (Bintari)

Data collection process will be conducted before and during the field period. Data from literatures, internet sources and temporary analysis are obtained before the fieldwork. During the field survey/observation, data acquisition method includes primary observation data and result from interview. The table below provides the list of data requirement and data acquisition methods in accordance with the research objective and question.

Table 3.1 Data Requirement and Acquisition Method

Objective	Data	Source	How to get it	How to analyze it
Identify solid waste management conditions in Jomblang	<ul style="list-style-type: none"> • Waste Infrastructure condition • Local Government Policy in waste management • People participation in waste management 	<ul style="list-style-type: none"> • Bappeda Semarang (Regional development planning agency of Semarang City) • sanitation department of Semarang city 	Secondary Survey	Descriptive analysis
Identify the characteristics of social, economic and cultural communities in Jomblang	<ul style="list-style-type: none"> • Social fact • Economic fact • Cultural fact 	<ul style="list-style-type: none"> • BPS Semarang (Central Statistical bureau) • Bappeda Semarang (Regional development and planning agency) • Population Agency of Semarang City • Kesbanglinmas of Semarang City 	Secondary Survey	Descriptive analysis
Analysis of social capital in terms of community networks in Jomblang	Indicator of Bonding, Bridging and Linking Social Capital	Respondent (Local Government, CBO, NGO)	Primary Survey	Descriptive and comparative analysis
Analysis of the role of community networks as social capital in community-based solid waste management	Indicator of Bonding, Bridging and Linking Social Capital	Respondent (Local Government, CBO, NGO)	Primary Survey	Descriptive and comparative analysis

3.2 Analysis Method

Analyses which conduct in this research are the descriptive qualitative analysis and comparative qualitative analysis. Descriptive qualitative will

formulate what become the problem and the purposes that wanted. It also will interpret the issues in macro and micro view from the study area. The procedure is to reveal the issues by describing the social characteristic, potential, challenge and prospects with their supporting factor. This analysis also could explain by using the existing condition in the field and describing into several facts. Furthermore, the comparative analysis will compare between the data from several sources to find the information which needed in the research and to gain the objective of the analysis. Moreover, it also support by the finding from other theory about social capital, policies and government law that concern with the object and also other researches. The detail procedure that shows the link between research questions, data required, and methodological steps is served below:

1. How is the current situation of solid waste management in Jomblang, Semarang?

To understand the current situation of Semarang solid waste management system, it is necessary to know first the context of community characteristic in Jomblang and Semarang government policy about solid waste management. These contextual matters have influenced the implementation of solid waste management direct and indirectly in Kelurahan Jomblang as location study. After that, the description about community base solid waste management in Jomblang narrated. For this purpose, I use narrative analysis to retelling the historical and currently program of solid waste management that occurred in Jomblang including some achievements among them. The process of this analysis consists of several steps:

- a. Collecting secondary data from journal articles, internet sources, and government publications that provides basic information about social economic data, government policy and solid waste management cases in Jomblang and Semarang (see Table 3.3).
- b. Doing literature review to show the historical activities that occurred in Jomblang from the beginning until the current state by identifying some achievements.

- c. Focusing on one case study of current solid waste management in Jomblang by elaborating some elements such as activities, facilities, people characteristics and stakeholder.

The discussion to answer this first research question will be elaborated in Chapter 4 (Community Characteristics and Solid Waste Management in Kelurahan Jomblang)

2. *How are the stakeholders of waste management work in order to address in Solid Waste Management in location study?*

In this part, a qualitative explanatory analysis is used to make a stakeholder analysis. The methodological steps for operating this analysis are described below:

- a. Collecting and reviewing secondary data from journal articles, books, internet sources, and government publications that relates to the implementation process of current solid waste management.
- b. Collecting data through semi-structured interview. Semi-structured interview is executed to gain some information related to the stakeholder policy that are not included formally in government report or other sources and to understand the relationship between stakeholders in solid waste management. The targets of this interview are stakeholders from municipal government, kelurahan government, and community representatives or organization. With the limited time visiting Indonesia, some of the interview already conducted directly in the field and some of them conducted via internet (see table 3.2).

Table 3.2 The List of Interview Sources

No.	Name	Institution	Information
1.	Rafik	NGO Bina Karta Lestari (Bintari)	members who are actively involved in waste management in Jomblang
2.	Feri Prihantoro	The manager of Bintari	Represent as NGO (Bintari), directly involve in Jomblang waste management and direct connected with the city government of Semarang
3.	Mrs. Muniarti Singgih	Environmental Cadres RW IX	Represent as community in Jomblang, she is the head of

			Seruni Group, the first environmental cadres group in Jomblang
4.	Mrs. Suryadi	The head of APL and PKK Kelurahan Jomblang	Represent as community base organization that actively involve in solid waste management.
5.	Mrs. Kustanto	Secretary of Lurah Jomblang	Represent as lowest tier of government in Kelurahan Jomblang, she is also as secretary in PKK Kelurahan Jomblang
6.	Drs. Woro Sugito	The head of waste management operational sub division in Semarang Sanitation Departement	Represent as the government of Semarang municipality.
7.	Sikki Handini Sh	The head of Recycle Sub Division in BLH Semarang	She is the key person who bridging the relationship with Japan's government in environmental preservation
8.	Ir. Endang Pratiwiningsih, MSi	The head of Recyle Subdivision in BLH Semarang	Represent as the government of Semarang municipality

The interview activities will be broken down into several steps:

- Determining the interviewee and arranging appointment with them. The selection of informants is based on *gatekeepers* approach by choose an individuals in an organization that have the power to grant or withhold access to people or situations for the purpose of research Burgess in (Valentine, 2005). In this research, I have chosen the head of the CBO (APL), Mrs. Suryadi as the gatekeepers as well as the informant.
- Constructing a detailed list of key questions that relates to the implementation process and classifying the questions based on the stakeholder types.
- Recording the interview section and writing additional notes.
- Translating the tape into transcription and typing the notes into readable form. If necessary, writing down what they mean or what ideas they sparked off in separate set of memos.
- Categorizing each stacks and piles of material into certain themes, events, or topic.

- c. Interpreting and building ideas from these materials using academic knowledge and literature review. Using the stakeholder analysis variables to make a better conclusion (see table 3.3).

The discussion to answer this second research question will be served in Chapter 5 (The Analysis of Network Utilization as Social Capital in Solid Waste Management in Kelurahan Jomblang).

Table 3.3 Waste Management Stakeholder Analysis Variables (adapted from AusAid, 2005)

No	Analysis	Variables
1.	stakeholder characteristics	<ul style="list-style-type: none"> • Social, economy characteristics • The role and existency of woman • Structure, institution and organization, • Attitudes and behavior
2.	interest and expectations	<ul style="list-style-type: none"> • Interests • Goals • Expectations (Ekternalitas)
3.	sensitivity and respect	<ul style="list-style-type: none"> • concerned about ideas of virtue or change (environment, gender equality, etc)
4.	potential and limitation	<ul style="list-style-type: none"> • financial resources • Experiences and knowledge • Potential contributions
5.	Conclusion and impact	<ul style="list-style-type: none"> • possible action • How to achieve the goals

The result from this stakeholder analysis will give an assessment to each stakeholder whether they support or less support to solid waste management in Jomblang.

3. How does the network (social capital) involve in the community base solid waste management?

The operationalization of this analysis is conducted through two methodological steps:

- a. Deepening theoretical background especially on the variables in network as social capital (see table 3.4) which already conducted in chapter 2 about the literature review.

b. Interpreting the identification of each network in waste management that occurred in Jomblang. This interpretation is done to get the indication of the network involving in the waste management and it is generated through a series of discussions between the researcher and the supervisors, by using academic knowledge and deepening literature review related to solid waste management practices in other countries.

Table 3.4 Network as Social Capital in Solid Waste Management Variables

No	Analisis	Variabel
1.	Social Capital with the neighborhood	<ul style="list-style-type: none"> • Providing assistance in various forms with the surrounding community • Invite the community to participate in public activities • the public interest against the activities that we do • The intensity of the meeting
2.	Social capital with other organization in waste management network	<ul style="list-style-type: none"> • Participation in public activities and the role given • The existence of cooperative relationships with other stakeholders • Often communicate with other stakeholders • A sense of mutual need with other stakeholders • Inviting stakeholders to participate in public activities • Provide feedback / opinion to resolve the problems as well as for the development of group / other institutions

The last analysis will give the assessment to the network condition in the solid waste management in Jomblang, use the result from the previous stakeholder analysis combine with the interpretation from the result of the interview with several respondents about the variable above. There are four assessment that will conclude in this analysis about the network:

Strong bonding social capital :

- Stakeholder in the community have supported the project
- Social capital with the neighborhood actively support each other activities

Weak bonding social capital

- Stakeholder in the community have less support the project
- Social capital with the neighborhood passively support each other activities

Strong bridging social capital

- Stakeholder in the community have supported the project
- Social capital with other organization actively support each other activities

Weak bridging social capital

- Stakeholder in the community have less supported the project
- Social capital with other organization passively support each other activities

The discussion to answer the third research question will be served in Chapter 5 (The Analysis of Network Utilization as Social Capital in Solid Waste Management in Kelurahan Jomblang).

CHAPTER 4 COMMUNITY CHARACTERISTICS AND SOLID WASTE MANAGEMENT IN KELURAHAN JOMBLANG

This chapter consists of an overview of Kelurahan Jomblang, community characteristics, and policy review at the Jomblang waste management. In detail, this chapter will be presented as follows:

4.1 The Characteristics of Kelurahan Jomblang

Administratively, Jomblang is part of Candisari District area with the total area is 108 ha and divided into 15 (fifteen) pillars of the community (RW) consisting of 120 (one hundred twenty) neighborhood area (RT). The conditions of Jomblang area is hilly and includes as densely populated residential areas with population reach 18.561 people (District, 2010). Furthermore, about the other characteristics of people in Jomblang such as social cultural and economic characteristics will be describe as follow :

4.1.1 Social Cultural Characteristics

The majority of people in Jomblang viewed from their education level are equal to 19.90% or about 2787 people are graduating from high school education (District, 2010). Meanwhile, residents who do not complete primary school or no school are around 6.25%. By comparing the data above it can be concluded that Jomblang Village residents have a pretty good level of education for residents who graduated from high school three times the number of people who do not complete primary school and no school. Hopefully, the attempt to suggest the importance of environmental hygiene to the community would be more easily done in an educated society. Moreover, viewed from the network as social capital, educated people generally may have a wider network because they can make the network by using the mass media and electronic media more easily. This condition would affect the utilization of social capital to increase the success of waste management in Jomblang.

Characteristics of the religion in Jomblang also could influential for the utilization of social capital in waste management. In terms of religion, majority of

the people in Jomblang population are muslims with ranged about 83%. Normally, It should be facilitating the implementation of community based waste management in Jomblang since for muslims there is a belief that to maintain cleanliness is half of their faith. Moreover, relationships within a network between people in Jomblang also potentially increase the social capital since a relationship with others is also one of a obligation taught in their religion because of strengthening muslim brotherhood.

There is another predominance about people in Jomblang, it is the habits of local residents that typically have a spirit of mutual help and hard worker. It could be seen from their willingness to clean up the environment together and mostly start their daily activities before the sunrise. The high spirit of mutual help and a strong work ethic of these communities would facilitate the implementation of community based waste management activities in Jomblang.

4.1.2 Economic Characteristics

Almost a half of the people in Jomblang are working as a construction worker that is equal to 44% is 3784 people, followed by people who work in the service sector that reaches 1686 people or 20% of all people in Jomblang (Table 4.1). The data also give the fact that the average income of people in Jomblang are at the middle to lower level. Moreover, people will need another income to support their daily life. This could become another indirect supporter to engage in waste management easier if it is shown that the waste management activities are also potentially increases their revenue.

**Table 4.1 Population Data According to Livelihood in Jomblang, 2010
(District, 2010)**

NO	Occupation	Population (people)
1	Farmer	0
2	Farm worker	0
3	Fisherman	0
4	Enterpreuner	349
5	Industrial worker	687
6	Construction worker	3784
7	Merchant	367
8	Transportation	0
9	Civil servant (civil/military)	1145

NO	Occupation	Population (people)
10	Retired	592
11	Others (services)	1686
Total		8610

4.2 Waste Management System in Jomblang

This sub chapter generally will describe about waste management policy in Semarang and in particular will explain about waste management system in Jomblang.

4.2.1 Waste Management Policy Review in Semarang

There are four patterns of waste management in the technical operations of Semarang City (The government of Semarang city, 2006) :

1. Open dumping

These activities are done by people with a direct throw garbage into the yard, open space or disposal into a river. This activity is applied to the area that there is no service system or areas with high density.

2. Conventional Waste Services

This service is performed by transporting waste from waste source to final disposal. Services performed by container, collection, transportation and final disposal sites.

3. Directly to the landfill disposal

This system is applicable to industrial activities or other infrastructure facilities that dispose of waste vehicles to landfill operations.

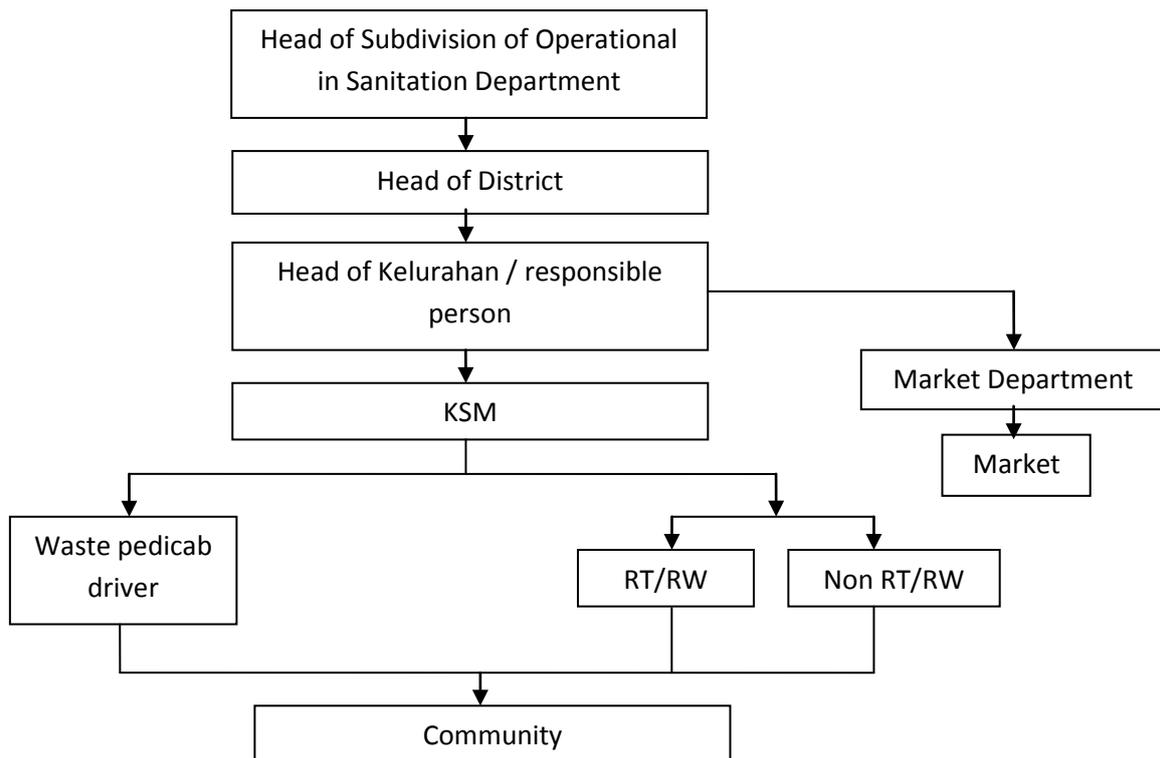
4. Waste Recycle

This activity is performed by processing waste into recycled products.

According to the Decision of the Mayor of Semarang number 660.2/133 2005 about the Technical Guidelines for the Management of Hygiene in the city of Semarang, waste management from container depots TPS and the transportation going to landfill Jatibarang polling stations is become the responsibility of Kecamatan (district) included in the management of sanitation

facilities and infrastructure to the cleaners. The implementation of waste management in neighborhood level is conducted by the Kelurahan. Sanitation Department only facilitates the provision of transportation facilities such as waste transportation fleets. More detail can be seen in Figure 4.1.

Figure 4.1 Organization Structure of Waste Management from Department to Kelurahan (Sanitation Department, 2010)

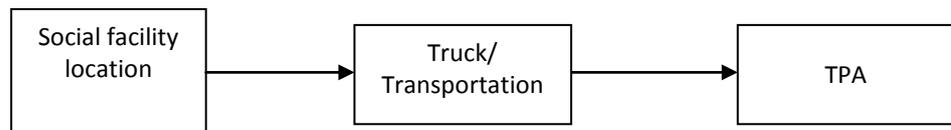


However, the kelurahan or district was not authorized to collect fees for operating expenses. Financing of operational activities can be done by submitting a request by the administrative needs of the budget to the districts with the knowledge of the district. In the decree of Mayor of Semarang city number 660/341 year 2000 about the establishment of Self-Help Groups (KSM) to handle the reforestation problem, sanitation, beauty and order (K3), explained that the task of waste management agency is divided into three sections:

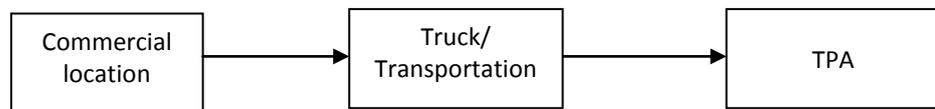
- a. Waste management from the source to the TPS-managed by kelurahan with community self-help groups in each RT / RW.



- b. Waste management from TPS to TPA which conduct by sub district under sanitation department coordination



- c. Waste management in commercial area (industry), public facilities provided by sanitation department moreover it become TPA manager.



4.3 Waste Management System in Jomblang

History

Waste management program in the Jomblang begins with the waste handling activities of the tempe and tofu home industry which located around the Bajak river in Jomblang. This is due before 2002 at the Jomblang, the productivity

of tofu have polluted the environment around the Bajak River. Seeing this condition, a NGO namely Bintari then take the initiative to reduce pollution which generated from the tofu industrial activities. Bintari then cooperate with the Kitakyushu International Techno-cooperative Association (KITA) which is an NGO of Kitakyushu Japan jointly to follow up the problems with the construction of Installation of Tofu Waste Water Management. This activity was first performed in 2003 in RW XI.

Bintari along with the Kitakyushu International Techno-cooperative Association (KITA) supported by the Government of Semarang City and Semarang State University have held a Capacity Building program for Supervisors Regarding Environmental Education through the mechanism of JPP (Japan Partnership Program) at JICA Japan. The program is conducted over two years since 2006. The program, entitled "Capacity Building for Supervisors Regarding Environmental Education in Semarang City" has aims to change people's behavior in environmental management with the implementation of environmental management and increased public awareness of environmental preservation. The activities of the program consist of increasing public awareness and increasing the role of local communities in waste management. Increasing the public awareness through formal education by conducted the counseling on primary schools activities in Semarang city, while the non-formal education applied to the community in Jomblang.

“Our hopes is simple, we hope people in Jomblang could manage their own waste without any help from the outsider. Thanks God, it’s already succeeded although not 100% yet” (Prihantoro, 2010)

At first, Bintari trying to encourage the public or the government to provide land to accommodate the polling station as waste in the environment RW. In addition, Bintari also seeks to train some members of the PKK to be able to organize a cadre of environmental waste management activities. Environmental cadres are then accommodated in environmental organization called APL (Alam Pesona Lestari). In addition, Bintari also established that a cadre of environmental for children and adolescents namely Eco Club.



Figure 4.2 The Collecting of Household Organic Waste

Activities

Community-based waste management in the Jomblang has been successfully implemented along the Bajak River which includes 7 (seven) RW. Seen from the technical aspects of operations waste management activities in Jomblang consist of three activities: waste sorting, waste collecting, and waste recycling.

Sorting

In sorting activities, waste separated by type, separation was achieved starting from the household (see figure 4.3).

“We provide plastic bags of flour. Organic garbage is put into the plastic bag. Organic waste is placed in black plastic, while for other waste such as batteries, soap or other unused junk must be placed in any color of plastic”(Singgih, 2010)

Waste other than of organic waste and then put in a common container. Common container used in the Jomblang are a freight container that is practical and more hygienic, it was trash cans in front of the house community.



Figure 4.3 Sorting House in Jomblang

Collecting

In collection activities, the patterns that have used are indirect communal patterns. The Waste collection conducted individually by each of the waste producer (household and other) to a landfill that has been provided/specified. This pattern is implemented in two ways. The first way is, communities that have an organic waste sorting of waste household brought directly to the TPS. Then at the polling stations were sold to garbage collectors. People who do direct sales is generally a middle to lower economic community. The second way is the organic waste which have not been sorted and then taken by rickshaw garbage or trash cart to the sorting house by cleaning workers. There are 6 RW which already has a sorting house. 4 (four) RW scouted by Bintari namely RW V, RW VII, RW IX and XI. While in RW 4 and 6 are the result of built by the APL. The workers who brought this garbage are paid Rp. 200.000/month. Conveyances used are rickshaw garbage that is partly a relief from the Environment Department of Semarang (BLH) by 5 rickshaws and carts which are also donation from the Sanitation Department of Semarang city.

Trash is separated into 4 groups: plastic, paper and cardboard, cardboard, metal and glass waste. The waste that has been sorted will be for sale to the collectors. While the waste that can not be used anymore will brought by the

workers from the household to the TPS located near the Market Mrican once every two days.

Recycle

The last activity conducted on waste management in the Jomblang is recycled the solid waste. The waste is recycling based on the type of waste, for the organic waste and non organic waste. Organic waste is processed into compost. Organic waste recycling activities can be carried out by the household or environmental cadres by using IM4 or Takakura box (see Figure 3.6). Takakura that currently exists in Jomblang already reach 525 boxes from Bintari. Another environmental Cadre obligation is to provide inokulen as material waste processing. Inokulen is then given to the public to use. The results of the composting process except for their own use are also sold to SMEs (UKM) around Semarang city.



Figure 4.4 Organic waste being processed become compost with the IM4 and Takakura

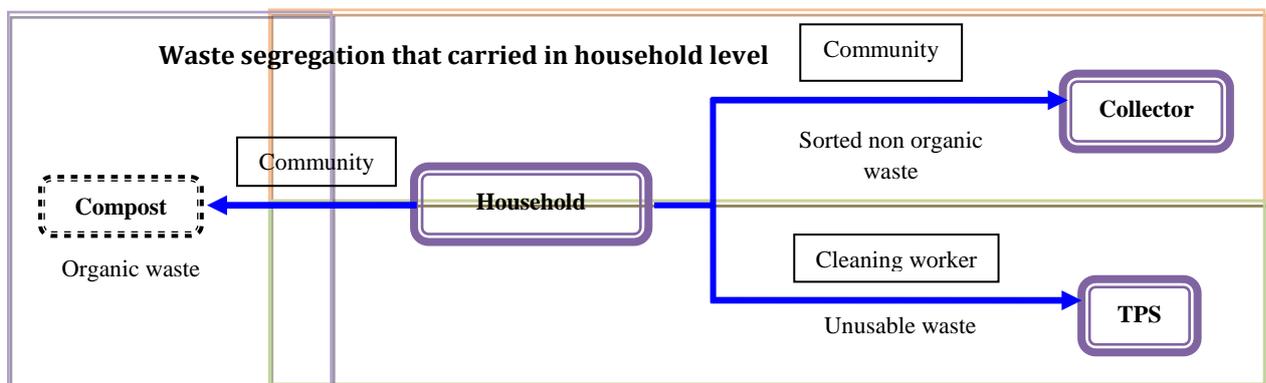
Furthermore, the next process is for the non organic waste recycling. After getting the adequate waste which is proper enough to use again from the sorting activities, then it will proceed to next step. They are process those waste into various handicraft such as rugs, slippers, bags, gallon caps and other objects (see figure 4.5).



Figure 4.5 The Recycle Product from the Non Organic Waste

The product of the recycled waste, especially from the non organic waste could be sold during the exhibition. Beside that, the APL also sold the recycled product by cooperating with various agencies and private parties such as the PT. Marimas Company. Furthermore, APL is also entered into collaboration with private parties such as PT Marimas in the recycled product market.

Based on the previous description about the waste management system that conducted in Jomblang, from the technical aspects the system can be known that the waste management operations in Jomblang consists of activities such as sorting, collection, and recycling waste. More detail can be seen figure 4.6.



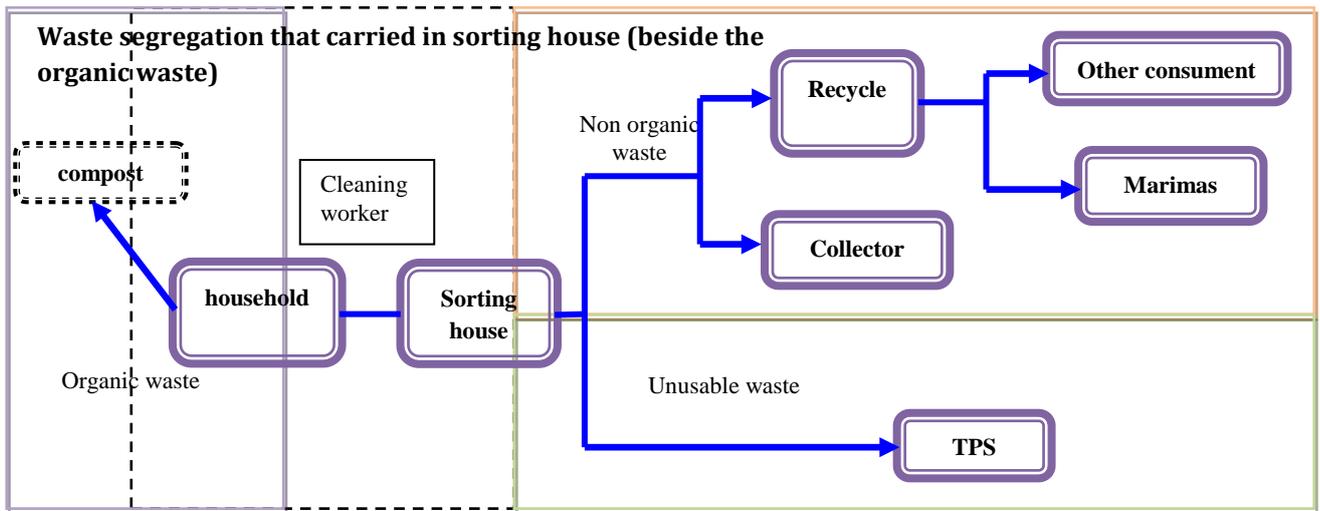


Figure 4.6 Waste Management System in Jomblang

Stakeholder

The stakeholders that involved in the Jomblang waste management can be distinguished as stakeholders from within (internal stakeholder) and from the outside the community (external stakeholder). The internal stakeholders are APL, Eco Club, PKK, and the Kelurahan. While the external stakeholder originating from Bintari, Kitakyushu International Techno-cooperative Association (KITA), the Environmental Department of Semarang City (BLH) and the Sanitation Department of Semarang City (DKP).

Each stakeholder has their own role in the waste management system in Jomblang, the internal stakeholder such as APL, Eco Club, PKK, and the Kelurahan have different roles in waste management. APL is a major driver of community-based waste management in Jomblang. The member of APL are personally already being involved in the waste management but beside that they also become a cadre that have obligations to increase public awareness of the importance of environmental cleanliness. Eco Club which consists of children and adolescents are also involved, especially to help pick up trash and sorting trash that they found. The role of PKK in waste management is to help provide support to the activities of APL for example in financial support. Cadres of the environment are also beginning comes from members of the PKK. Kelurahan is

socializing the role of waste management activities and to facilitate the community to be directly involved in this waste management.

The role of stakeholders from outside the area or external stakeholder such as Bintari, Kitakyushu International Techno-cooperative Association (KITA), the Environment Agency and the Sanitation Department of Semarang and Semarang City Landscaping also varies. Bintari an NGO from the outside who has committed to raising awareness of community to be self-manage the waste they produced. Various efforts already attempted by them to conduct the community outreach and training in Jomblang by bringing a variety of solid waste experts. Bintari also formed a group of environmental cadre, providing infrastructure such as waste Takakura box. Kitakyushu International Techno-cooperative Association (KITA) also has a very important role in this system. They have provided the financial support in community-based waste management activities in Jomblang. They were also doing some technology development such as compost processing Takakura tool box. In addition, KITA also always evaluate the activities which carried out by Bintari and make some recommendations for the next waste management activities.

Besides involving Bintari, APL and the Kitakyushu International Techno-cooperative Association (KITA), the Jomblang waste Management also has a network of cooperation with local governments. BLH has provided assistance in the provision of 5 (five) pieces of garbage rickshaw. The sanitation department (DKP) has also provided trash carts for transporting waste to the TPS.

CHAPTER 5 THE ANALYSIS OF NETWORK UTILIZATION AS SOCIAL CAPITAL IN SOLID WASTE MANAGEMENT

Analysis of the utilization of the network as social capital in waste management in the Jomblang consists of two analysis, stakeholder analysis and analysis of the utilization of waste management network as social capital in waste management. This analysis is as follows:

5.1 Waste Management Stakeholder Analysis

To determine the extent to which that role has been given and its potential that can be used in waste management, it is necessary to carried out the stakeholder analysis which are include the characteristics, interests and expectations, sensitivity and attention to the developing issues as well as the potential and shortcomings / barriers stakeholders. The analysis carried out as follows:

5.1.1 Internal Stakeholder Analysis

Alam Pesona Lestari (APL)

APL is an environmental organization that consists of district level cadres who wanted to create the environment clean and sustainable environment. Currently the Chairman of APL is Mrs Suryadi. APL was established for the first time on January 17, 2007, it forms from the previous environmental group called Seruni. The aims of the formation of this group also to follow the old group goals that is to support the sustainable waste management in Jomblang. At this time the APL membership has reached 525 families. If the first member of the APL are all women, now the member of APL also has included men.

The vision and mission of this APL is to have "Green and Clean my village". To realize this vision and mission are needed for waste management that can be done properly and make over on each side of the village greener. Some programs related to waste management that has done by APL in Jomblang regarding the solid waste management.



Figure 5.1 The Activities of APL in Waste Management

PKK

PKK Jomblang is one of the environmental organization which have household women as their primary member. This organization has a vision of the Community Empowerment and Family Welfare. Mrs. Suryadi already led the PKK in Jomblang for more than five years. This woman is very trusted by the community so she is now also become as chairman of not only the PKK but also in APL and BKM (Family Welfare Agency).

Kelurahan

Kelurahan Jomblang is one of the villages in the district Candisari. Kelurahan Jomblang has a vision that is as Jomblang a Clean, Beautiful and Prosperous. Kelurahan Jomblang is comprised of 15 (fifteen) Pillars of the Citizen (RW) and 120 (one hundred twenty) the Neighborhood (RT). Officially there is no chief in Kelurahan Jomblang until now, the authorities are delegated to the secretary. Both chief's who served previously never finished their obligation properly until their time because of sick and death.

Ecology Club (Eco Club)

In order to engage the Jomblang public awareness in waste management continues to grow then in addition to APL, Bintari also formed Ecology Club (Eco Club) on 20 February 2008 and is located on RT. 02 RW. VII Jomblang, Semarang. Eco Club is a group of teenagers and children (elementary through high school) which is engaged in the environmental field and will serve as the environmental cadres. The coordinator of the Eco Club is Bintari along with the student Environmental Engineering, University of Diponegoro.



Figure 5.2 The Eco Club Activities

5.1.2 External Stakeholder Analysis

There are several stakeholders from outside the Jomblang community (external stakeholders) that are also involved in the waste management in Jomblang such as Bintari, KITA, DKP, BLH, PT. Ulam Tiba Halim. Below are the short explanation about those stakeholders:

Bina Karta Lestari (Bintari)

Bintari vision is to empower the community in sustainable environmental management and justice based on community participation. While Bintari mission is to empower the community in environmental management by increasing knowledge, awareness, and promote environmental preservation efforts. The value contained in the programs and activities Bintari is sustainable, equitable,

participatory and independent. While the principle of Bintari is transparent, professional, accountability and innovation.

At first Bintari supported by the Kitakyushu International Techno-cooperative Association (KITA) trained several members of the community become environmentally neighborhood level cadres who can coordinate the activities of this waste. Environmental cadre is then developed into a cadre of village level environment called the Alam Pesona Lestari (APL). KITA have supported Bintari by training composting using Takakura for people in Jomblang



Figure 5.3 Bintari and KITA Activities in Jomblang

Kitakyushu International Techno-cooperative Association (KITA)

The KITA Vision is to spreading the international technology cooperation for harmony and sustainability of industrial development in harmony with environmental conservation. KITA has role in waste management in Jomblang is as their funder of activities. KITA also the first to introduce the waste by using Takakura. JICA's role in waste management in Jomblang is to provide funding, support facilities, infrastructure and support of experts such as Mr. Takakura (who teaches composting with Takakura box).

BLH (Environment Department)

Environment Agency of Semarang has a vision that makes BLH as institutions that are responsive to environmental changes. BLH roles associated

with the presence of APL in Jomblang are to assist the waste management facilities such as an organic 8 bins, tricycles and garbage. Based on the results of the assessment, in 2008 the Kelurahan Jomblang won as the second the best waste management in Semarang and in 2009 Jomblang succed become the first.

DKP (*Sanitation Department*)

DKP Semarang city has a vision that is the realization of Semarang Metropolitan City neighborhood a clean, beautiful, healthy, and shade. However, to realize the vision and mission, this service later encountered obstacles that limited budgetary allocations from the budget which resulted in an inadequate means of transport in terms of both quantity and quality of service.

Marimas (*PT. Ulam Tiba Halim*)

PT. Ulam Tiba Halim or also called as PT. Marimas is a company Limited Liability Company which is engaged in the production of fresh powder drinks. Derived from the type of company in the form of domestic industry which was originally managed by the family management system has now evolved into a Limited Company. Role of PT. Ulam Halim Arrive in waste management in waste management in Jomblang is as distributor of waste garbage that has been processed by people in Jomblang. That could seen from the statement of the head of APL about the cooperation with PT. Marimas or PT. Ulam Tiba Halim.

“The forms of cooperation, we are booking as many as 1000 pieces the mat with the raw material comes from the PT Marimas own. Waste is then provided to the household women in Jomblang to be processed into mat which is then sent back to PT Marimas ”(Suryadi, 2010)..

The stakeholder analysis from the the description above can be seen completely in table 5.1. It will explain more about the performance of characteristic strengths, interests and expectations of the potential and limitations of sensitivity as well as stakeholders from the standpoint of waste management in Jomblang. From the table is then compiled the conclusions that can be seen in Table 5.2 and Figure 5.4.

Table 5.1 Stakeholder Analysis of Solid Waste Management in Kelurahan Jomblang

No	Stakeholder	Characteristics	Interest and Expectation	Sensitivity And Respect	Potential And Limitation	Conclusion and Impact
		<ul style="list-style-type: none"> • Social, economy characteristics • The role and existence of woman • Structure, institution and organization, • Attitudes and behavior 	<ul style="list-style-type: none"> •Interests •Goals •Expectations (Externalities) 	<ul style="list-style-type: none"> •concerned about ideas of virtue or change 	<ul style="list-style-type: none"> • financial resources • Experiences and knowledge • Potential contributions 	<ul style="list-style-type: none"> • possible action • How to achieve the goals
1.	APL	<ul style="list-style-type: none"> - Community-based environmental groups - To cooperate actively - Some programs related to waste management that has done quite a lot - Dominated by women so much more at home and take care of household needs - Chairman of the APL is also the Chairman of the PKK, Secretary of the APL is also secretary of the village chief 	<ul style="list-style-type: none"> - Goal: Increase public awareness of the importance of environmental hygiene - Hope: a village green and clean - Interests: making sub Jomblang as a champion of national hygiene 	<ul style="list-style-type: none"> - Awareness of the importance of the environment is very high (a willingness to sacrifice time, energy, and thoughts 	<ul style="list-style-type: none"> - There are some people who still like littering - The government is not enthusiastic about supporting the implementation of the activities of APL - Has the innovation and creative ideas in the activities - Has a fairly strong relationship with other stakeholders - Cadres get an award from the Ministry of Environment 	<ul style="list-style-type: none"> - Following a variety of training to improve themselves - On to continue to invite people to participate keeping the environmental cleanliness.
2.	PKK	<ul style="list-style-type: none"> - Multi-office chairman - The structure to the structure of the smallest communities - Members is the woman who have different backgrounds 	<ul style="list-style-type: none"> - Objective: to realize a prosperous family - Hope: a clean environment, free from disease and beautiful - Interests: earn extra income 	<ul style="list-style-type: none"> - High awareness of environmental management (funding) 	<ul style="list-style-type: none"> - Have enormous power to change a system that is in the public 	<ul style="list-style-type: none"> - Increasing the capacity utilization of waste so that its presence can help to improve the welfare of the family. - PKK can provide awareness as early as possible for his children the importance of the environment.
3.	Kelurahan	<ul style="list-style-type: none"> - Role as a waste manager of the polling stations to transport container to the landfill Jatibarang - Having an independent community 	<ul style="list-style-type: none"> - Purpose: To people can manage their own waste generated - Hope: Village clean, beautiful and prosperous - Interests: getting an award of exemplary Pemko as civil servants. 	<ul style="list-style-type: none"> - High awareness of environmental hygiene (socialization, facilitation) 	<ul style="list-style-type: none"> - conditions of Lurah - The limited number of staff - Has a high work ethic communities and a strong sense of cooperativeness 	<ul style="list-style-type: none"> - The Kelurahan can facilitate & provide counseling so that citizens can actively participate in environmental activities that children do in their environment. - Provide support to the activities of APL both morally and materially.
4.	Eco Club	<ul style="list-style-type: none"> - Consists of children and 	<ul style="list-style-type: none"> - Objective: to build awareness of 	<ul style="list-style-type: none"> - Concern for the 	<ul style="list-style-type: none"> - Concern of parents towards 	<ul style="list-style-type: none"> - Attempting to independent in doing

No	Stakeholder	Characteristics	Interest and Expectation	Sensitivity And Respect	Potential And Limitation	Conclusion and Impact
		<ul style="list-style-type: none"> • Social, economy characteristics • The role and existence of woman • Structure, institution and organization, • Attitudes and behavior 	<ul style="list-style-type: none"> •Interests •Goals •Expectations (Externalities) 	<ul style="list-style-type: none"> •concerned about ideas of virtue or change 	<ul style="list-style-type: none"> • financial resources • Experiences and knowledge • Potential contributions 	<ul style="list-style-type: none"> • possible action • How to achieve the goals
		<p>adolescents</p> <ul style="list-style-type: none"> - Activity in the form of games to keep the environment clean - Coordinator: Bintari and Undip 	<p>children and youth the importance of protecting the environment</p> <ul style="list-style-type: none"> - Hope: Village, clean, beautiful and prosperous - Interest: awarded as one of the best environmental cadres 	<p>environment is quite good but still rare to perform activities</p>	<p>children's activities to maintain a relatively low environmental</p> <ul style="list-style-type: none"> - Operational funds are limited - Still hanging with the Karang Taruna 	<p>activities.</p> <ul style="list-style-type: none"> - To provide awareness for parents to be concerned with children's activities in manage the waste.
5.	Bintari	<ul style="list-style-type: none"> - NGOs are independent, independent, nonprofit, and not oriented toward practical political activity - Consisting of practitioners and environmentalists are very concerned about environmental issues and sustainable development - Moving on community empowerment in environmental management. 	<ul style="list-style-type: none"> - Objective: to empower the community in environmental management by increasing knowledge, awareness, and promote environmental preservation efforts. - Hope: Bintari target area communities can manage waste properly, irrespective of the presence of outsiders - Interests: to be especially successful NGOs in the field of waste management 	<ul style="list-style-type: none"> - High awareness of environmental management. (research & waste planning, training, provision of garbage sarpras, the formation of APL) 	<ul style="list-style-type: none"> - Have experience in waste management. - Having access to international NGOs - It has broad access to researchers and environmental praktisi - Concern the government on the activities carried out Bintari still minimal. - Limited operational funding activities 	<ul style="list-style-type: none"> - Always develop Bintari capabilities. - Provide creative ideas for activities and help provide access to APL for APL to develop its activities. -
6.	KITA	<ul style="list-style-type: none"> - Is a Japanese NGO working on environment - Have access to a broad international world. - Having a researcher and engineer environmentally friendly technologies. - 	<ul style="list-style-type: none"> - Objective: transfer of environmentally friendly technologies for the development of the international community towards sustainable development - Hope: the realization of sustainable development in developing countries - Interest: WE widely known as a pioneer of environmentally friendly technologies 	<ul style="list-style-type: none"> - High awareness of the importance of the environment (funding, facilities and infrastructure assistance, expert) 	<ul style="list-style-type: none"> - Expertise on environmentally friendly technologies - Is a source of potential funding - Having access to a broad almost to the entire world. - 	<ul style="list-style-type: none"> - Providing input for citizens to obtain a better life. - Giving credit for the success Bintari and APL. -

No	Stakeholder	Characteristics	Interest and Expectation	Sensitivity And Respect	Potential And Limitation	Conclusion and Impact
		<ul style="list-style-type: none"> • Social, economy characteristics • The role and existence of woman • Structure, institution and organization, • Attitudes and behavior 	<ul style="list-style-type: none"> •Interests •Goals •Expectations (Externalities) 	<ul style="list-style-type: none"> •concerned about ideas of virtue or change 	<ul style="list-style-type: none"> • financial resources • Experiences and knowledge • Potential contributions 	<ul style="list-style-type: none"> • possible action • How to achieve the goals
7.	BLH Kota Semarang	<ul style="list-style-type: none"> - Consists of people who understand environmental issues. - Many potential employees (continuing education abroad) - Have the socialization and facilitation of technical assistance in the field of LH. - Dana APBD dependent activities 	<ul style="list-style-type: none"> - Objective: BLH as yng institutions responsive to the changing environment. - Hope: Environmental sustainability is maintained - Interests: become a qualified institution, valued by other institutions and communities 	<ul style="list-style-type: none"> - Jomblang minimal sensitivity to hygiene (5 bins to help the organic waste and tricycles) 	<ul style="list-style-type: none"> - Having qualified human resources - Towards an effort to always respond to environmental changes. - Having access to a broad enough in government circles. - Funds for the environment is limited. 	<ul style="list-style-type: none"> - Conduct training and development of APL capability in protecting the environment. - Utilizing human resources for the development of the ability of community owned Jomblang in managing waste. - Extract accesses alternative funding sources for Bintari and APL. -
8.	Dinas Kebersihan &Pertamanan Kota Semarang	<ul style="list-style-type: none"> - Have waste management infrastructure - Many number of officers but less activity. 	<ul style="list-style-type: none"> - Objective: All the parties concerned and want to get involved in waste management - Hope: the realization of Semarang, clean, beautiful, healthy and calm. - Interest: trash is not a source of problems again so that waste management becomes easier. 	<ul style="list-style-type: none"> - Minimal sensitivity to hygiene Jomblang 	<ul style="list-style-type: none"> - Limited operational funds that have an impact on the amount and quality of transportation service is inadequate - 	<ul style="list-style-type: none"> - - Increasing concern for environmental cleanliness. - Always looking for creative ideas to be actively involved in waste management, without being dependent on the support of local budget funds -
9.	PT. Ulam Tiba Halim	<ul style="list-style-type: none"> - The company which is engaged in the production of fresh powder drinks - Regional marketing include Sumatra, Java, Kalimantan, Sulawesi and Bali - Exports include Nigeria, Bangladesh, Philippines and United Arab Emirates 	<ul style="list-style-type: none"> - Objective: reuse Marimas products that are not useful. - Hope: Products Marimas be known everywhere. - Interest: Maximizing profit 	<ul style="list-style-type: none"> - Low sensitivity of this company. Recycling of products is limited only to the products of this company only. 	<ul style="list-style-type: none"> - Having a variety of promotional media - Regional marketing spread both nationally and internationally - Is a source of potential funding - 	<ul style="list-style-type: none"> - Able to receive all the products of recycling organic waste Jomblang regardless brands. - Always provide creative ideas for the development of the ability of APL.

Table 5.2 The Assessment of Stakeholder Seen From Waste Management Activities In Jomblang

NO	STAKEHOLDER	CHARACTERISTICS	INTEREST AND HOPE	SENSITIVITY	POTENTIAL AND LIMITATION
1.	APL	Support	Support	Support	Support
2.	PKK	Support	Support	Support	Support
3.	Kelurahan Jomblang	Less support	Support	Support	Less support
4.	Eco Club	Support	Support	Support	Less support
5	Bintari	Support	Support	Support	Support
6.	KITA	Support	Support	Support	Support
7.	BLH Semarang	Support	Support	Less support	Less support
8	DKP Semarang	Less support	Support	Less support	Less support
9.	PT. Ulam Tiba Halim	Support	Less support	Less support	Support

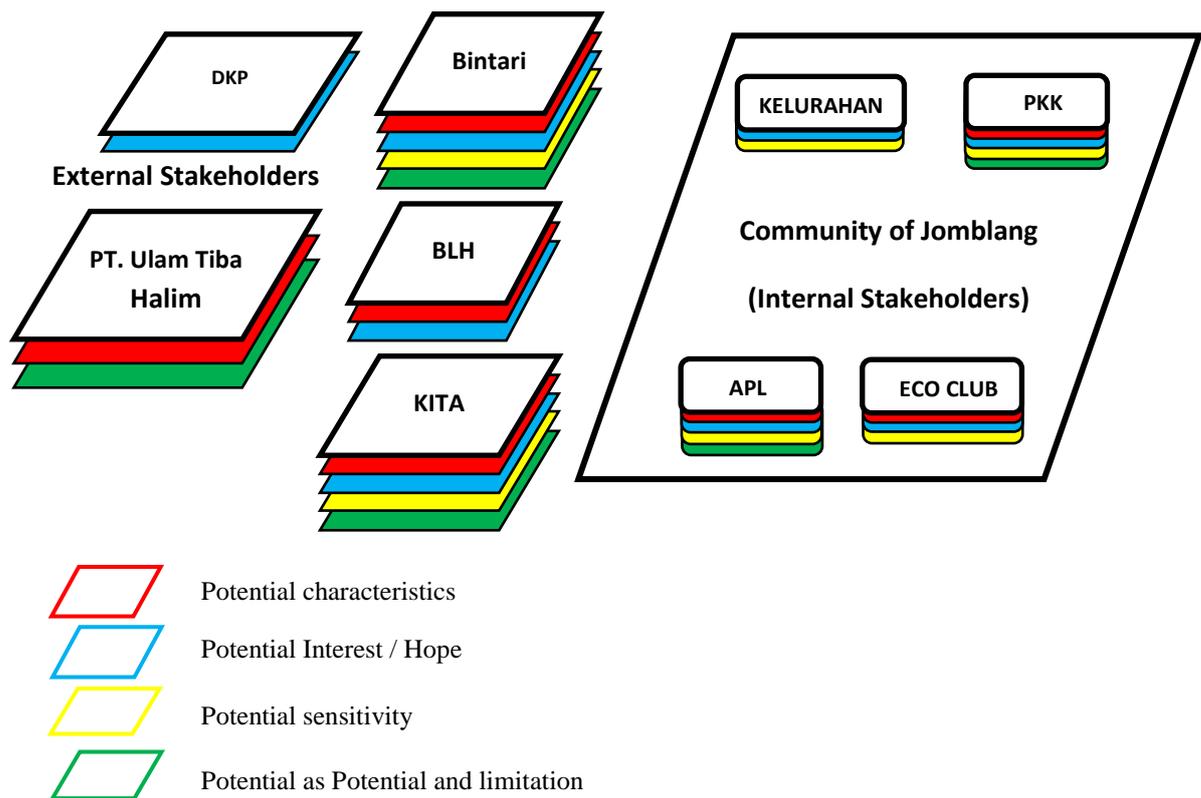


Figure 5.4 The Potential of Stakeholders Role in Solid Waste Management in Kelurahan Jomblang

The figure 5.4 above was extracted from the previous table which explains about the assessment of the stakeholder in solid waste management. From the figure above we can see that there are five external stakeholders and four internal stakeholders in solid waste management in Jomblang. The external stakeholder which has potential in characteristic, interest/hope, sensitivity and potential as potential and limitation are Bintari and KITA. The internal stakeholder which has all four potentials is PKK and APL. The role of kelurahan only have potential in sensitivity and interest. Furthermore the relation between those stakeholder will describe in the next chapter.

5.2 Analysis of Network Utilization as Social Capital in Solid Waste Management in Kelurahan Jomblang

Putnam's high-level dichotomy of social capital into bonding social capital and bridging social capital, where bonding social capital refers to the value assigned to social networks among homogeneous groups of people and bridging social capital refers to the value assigned to social networks among heterogeneous groups of people

5.2.1 Bounding Social Capital Stakeholder Analysis

Based on the results of previous analysis can be seen that the environmental groups that have the most powerful bounding social capital and also the characteristics, expectations and interests, sensitivities and the potential to support waste management in Jomblang is the APL and PKK. Bounding environmental groups that have low social capital are the Eco Club and Kelurahan Jomblang. As for the utilization of social capital in waste management will be describe as follow:

- Alam Pesona Lestari (APL).

The utilization of network as social capital for the APL with the public in waste management can be seen from the success of APL mobilize the community to be actively involved in waste management. Moreover, APL is a member of the community itself because APL is a community-based organization so that people feel familiar with APL programs. APL with a willingness to sacrifice time, energy and mind to grow and increase public awareness of the importance of the environment it hopes to achieve a clean and green village should be secure.

- *PKK*

The PKK has strong bounding social capital. Based on the stakeholders analysis previously could be seen that in the characteristics, expectations and interests, sensitivities and the potential to support waste management in Jomblang also strong. Network (network) between the PKK with the community are has close social capital because the women-housewife is generally a member of the

PKK. The PKK has a membership structure to the structure of the smallest communities and their members have different backgrounds. Strong social capital between the PKK with the community led to socialization waste management activities become easier. These conditions have the same meaning with the views which stated by Putnam and Coleman for whom reciprocity, civic engagement and trust are engendered by a sense of community and collaboration among members (Coleman, 1988; Putnam, 1993).

5.2.2 Bridging Social Capital Stakeholder Analysis

The environmental groups that have the most strong bridging social capital and network and has the advantage of the characteristics, expectations and interests, sensitivities and the potential to support waste management is a APL and Bintari. Following the both groups is the eco club. But the eco club has a bigger obstacle than the potential to support waste management.

APL

APL became the prime mover in the Jomblang waste management. Supported by the results of the analysis of the utilization of social capital in waste management are as follows:

- Social capital between APL is very strong with the PKK. The utilization of network as social capital in waste management can be seen from the mobilization of resources at the APL and the PKK is the financial support of the PKK and volunteerism APL work managing waste.
- The network between the Kelurahan and APL also has a strong social capital. The utilization of network as social capital in waste management can be seen from APL who are willing to help run the job description of Kelurahan as a person in-charge of cleanliness in their area and facilitation Kelurahan when there was conflict in RW V and VII. APL's willingness to sacrifice time, energy and mind and a willingness village and help facilitate the activities of waste management with all its limitations enhances the realization of this activity.
- The network between the APL with the Eco Club has a strong social capital. Cadres in the APL environment generally took his son to get into the Eco club

that they also realize the importance of environmental management. The utilization of network as social capital in waste management can be seen from eco club participation in activities held by APL such as clean rivers and waste segregation.

- Bintari and APL with a strong social capital. The utilization of network as social capital in waste management can be seen as follows:

In waste management, Bintari willing to provide counseling, training, provision of sarpras and APL have a high work ethic, willingness to cooperate and enhance the ability of a strong desire. The relationship between Bintari and APL are intertwined because Bintari NGOs working in the field of community empowerment in environmental management, while APL is an object of community empowerment activities in waste management activities. APL is a success Bintari success as well. Not only that wide access to international NGOs, experience in waste management as well as easy access to researchers and practitioners who owned Bintari environment also helps to raise public awareness of APL around it and develop the skills they have.

- APL with BLH has a strong social capital. Use of this network in the waste management facilities for APL is to get information about activities related to waste management, such as race hygiene as the city of Semarang, recycled products exhibit both urban and national scale. By leveraging the potential that exists in the BLH-quality human resources and access to ample in the government of course can support the achievement of the objectives of APL activities to increase public awareness of the importance of environmental success.
- Relationship with PT Ulam Arrive APL Halim has strong social capital. Views from the network and results of stakeholder analysis can be seen that APL has an advantage in terms of characteristics, interests and expectations, sensitivity and potential while PT. Ulam Tiba Halim has advantages in terms of characteristics and potential. Cooperation between APL with this company makes APL also attempted to collect the waste products Marimas both inside

and outside the community. APL is also always seeking to develop creative ideas in an organic waste processing.

Bina Karta Lestari (Bintari)

- Bintari with the Eco Club has a strong social capital, the utilization of network as social capital in waste management could be seen with the effort by Bintari to introduce eco club of waste management activities in Jomblang. For eco club, an attempt is then to realize the hopes of a cadre Bintari best environment that not only understands but also play an active role in waste management in the Village Jomblang.
- The network between Bintari the Kelurahan has a strong social capital. The utilization of network as social capital in the management is that Bintari helps to empower village communities. Bintari also provide time, labor, and mobilizing its ability to foster cadres and when Bintari environmental problems, urban villages to help resolve the issue. Kelurahan also socialize Bintari activities that the community spirit to the event. Social capital also improves the quality of the relationship between the village government and voluntary agencies are NGOs.
- The network between Bintari with KITA is have a strong social capital since the community-based waste management activities in the Jomblang is a collaboration of KITA with Bintari. Within this network KITA do the transfer of knowledge and experience of waste management has been successfully applied in Japan to Bintari. KITA also provide recommendations for Bintari in resolving the problems faced in the activities. For example, WE bring in experts namely Mr. Takakura composting technology. Bintari also trying to get the most money and the knowledge that has been given to the well so that WE can achieve the expected goals. The success of these activities can certainly realize the importance of KITA and Bintari as a successful NGO in the utilization of environmentally friendly technologies and community-based waste management NGO.

For illustration about the network that consist in Jomblang solid waste management could be draw in figure 5.5. Based on the results of the analysis can

be seen that through the use of bounding social capital led to APL and the PKK is able to encourage people in Jomblang. APL with a high sense of ownership of the organization caused them freely to sacrifice their time, energy and mind to grow and increase public awareness of the importance of the environment. Environmental cadres are able to provide confidence that the community involvement in waste management activities will have positive impact for the preservation of the environment by providing concrete examples of how communities can be involved and what benefits they receive. Moreover, this condition is then pushed to the community to participate in waste management.

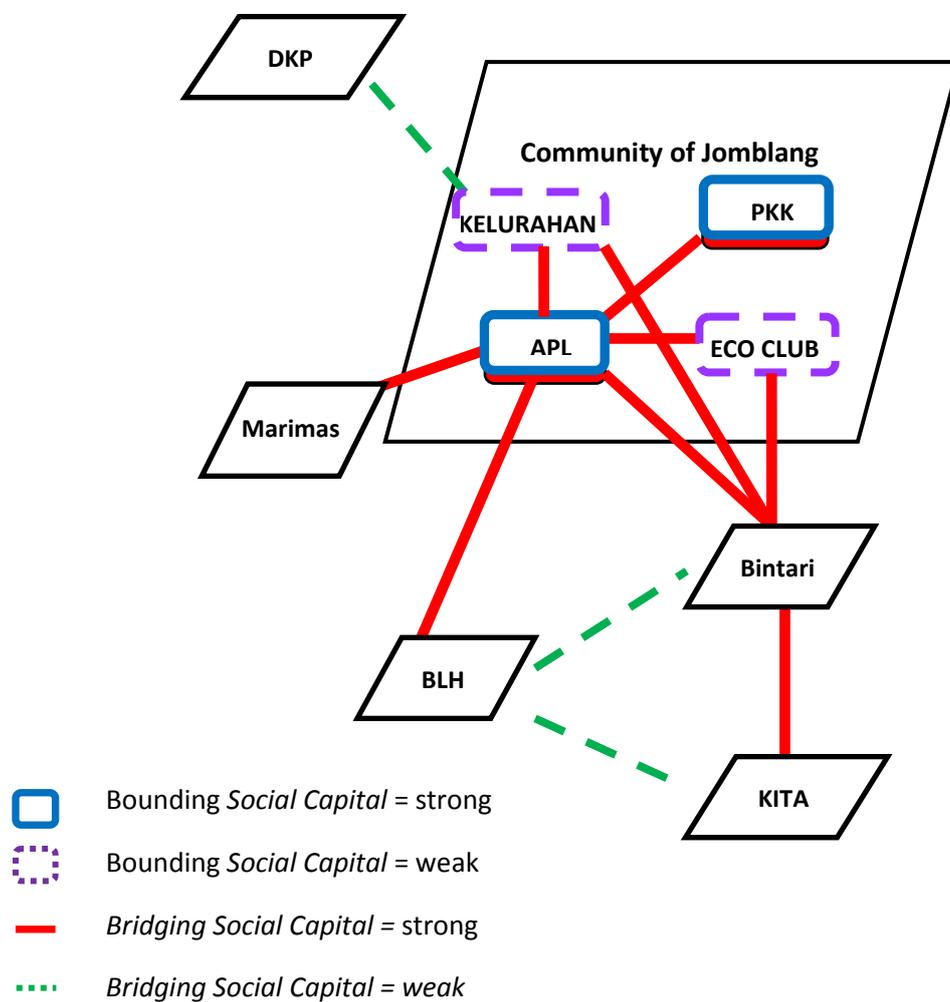


Figure 5.5 The Network Utilization as Social Capital in Solid Waste Management in Kelurahan Jomblang

The utilization of bridging social capital with strong social capital among the network between APL and PKK affected to the strengthening of collective action that reflects by the feeling of shared responsibility in waste management activities. PKK was willing to help APL for their activities by providing financial support. Social capital within the network (network) APL and Eco Club also led both groups to have some waste management activities which are conducted together. APL also could foster a sense of trust by demonstrating a high work ethic, willingness to cooperate and enhance the ability of a strong desire to create community-based waste management. This has led to other stakeholders would be involved with a variety of roles. The pattern of correlations suggests that social capital is about more immediate and personal connections between people and events rather than more distant and formal relationships with government institutions and policy (Grootaert, 1998). This is not to say that government policy is unimportant but, rather, that it is not experienced in any immediate way or connected with people's daily lives.

The community organizations such as APL, PKK and also NGO such as Bintari and KITA have proofed become a primary actor that drive the solid waste management in Jomblang. They have strong social capital both bridging and bonding. Coleman (1988) have argued that social capital is most likely to be formed in a closed community where informal norms and sanctions are particularly strong. Moreover, Cox (1995) argues that a truly civil society requires both of community connections and tolerance of diversity. This would suggest a negative relationship between the two sets of factors. The study found a positive relationship between those factors. This would suggest that it is at least possible to hold high levels of both community connectedness and tolerance of diversity.

CHAPTER VI CONCLUSION

6.1 Conclusion

Based on the utilization of such networks can be seen that the benefits derived from the existence of social capital within a network (network) in waste management are as follows:

- Participation and local networks and mutual trust will make the group more likely to reach joint decisions and implement them in joint activities.
- Participation of individuals and social networks increase the availability of information at a low cost, for example: a. Availability of information obtained from the network activity (network) with BLH APL, APL-sub-community; b. Availability of information science / experience gained from the network between APL with Bintari, Bintari with WE, Eco Club with Bintari and APL with PT. Ulam Tiba Halim; c. Improving networking and attitudes to reduce bad behavior obtained from members of the network between APL with the community, the PKK with the community. Through the relationship between APL with the community then there is a change habits of littering habit of throwing rubbish into the place.
- Seen from the technical aspects of operations waste management activities in Jomblang consists of activities sorting, collection, and waste recycling furthermore it also could be classified into two systems. 1) Waste management system that sorting has been done at the household level, both organic waste, the organic waste and waste that can not be used again. 2). Waste management system in addition to organic waste sorting done at sorting house. Non organic garbage that has been sorted is then recycled, or sold to collectors by the cadres of the environment.
- The utilization of network as social capital can realize the success of waste management due to mobilization of resources in the community (bounding social capital) and easy access to other resources (bridging social capital) in waste management.

- There are several factors that affect the bounding social capital and bridging social capital. Factors affecting the bounding social capital is 1). The intensity of the meetings, 2). Sense of Ownership to the Organization, 3). Leadership.
- Factors affecting the bridging social capital is 1). The similarity of objectives, 2). Paternalistic relationship, 3). Trust, 4). The existence of interest.
- Judging from the network utilization as social capital in waste management can be seen that the strength of social capital both bounding and bridging is supported by a large stakeholder potential for causing a community organization that is able to mobilize communities APL is directly involved in waste management activities. These community organizations play a role is inseparable from the existence of external stakeholders who becomes an accelerator for community organizations to broaden and enhance the ability of waste management activities (Bintari).

6.2 Recommendation

In terms of policy implications, this work shows the feasibility of privatizing the collection of solid waste in urban middle-class neighborhoods. It also indicates that the government should be more play a useful role in publicizing success stories and in providing information on how successful neighborhoods were able to organize themselves for solid waste management. The role of local government need to be more grounded to the real action, not just by the policy.

However, more analysis is needed before one can conclude that the city is ready for wholesale privatization of the solid waste management with the community base system. The most important policy implication of this study is that the introduction of community base solid waste management which supported by private sector and local government or self-help schemes is more likely to be successful in neighborhoods which are high in social capital. Thus social capital proxies or determinants can be used as predictors of success when targeting neighborhoods for different social or public good oriented interventions.

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