© 2016
Biro Penerbit Planologi Undip
Volume 12 (3): 263 - 276 September 2016

JURNAL PEMBANGUNAN WILAYAH & KOTA

The Role Of Local Champion In Community - Based Adaptation In Semarang Coastal Area

Bintang Septiarani[1] , Wiwandari Handayani[2]

Diterima : 27 Juni 2016
Disetujui : 18 Juli 2016

ABSTRACT

Community-based adaptation (CBA) is a new approach that is attractive because it is a process of planning led by the community, based on community priorities, needs, knowledge and capacity - a process that should empower people to plan for climate change impacts (Hordijk and baud, 2010). Governance at the community level regarded to be a way to help them in adapting and maintain their livelihood on the coastal so that they can remain in the region. Governance in community engaged individual communities to group and jointly manages their livelihoods and conservation in their coastal areas. The intervention of the government and non-government organizations also play a role in the process of adaptation that occurs. This paper aim to elaborate the role of local champion in CBA process. Interesting findings from Tapak Village, Semarang who have done their community-based adaptation process is that the involvement of the community in the adaptation to climate change is greatly influenced by the presence of local champion in the region. The existence of networks between community and the relevant stakeholders in both the government and non-government organizations also became one of the supporting factors for the sustainability of community-based adaptation processes in coastal areas of Semarang City.

Keywords: *Semarang, Community-based Adaptation, Local Champion, Coastal*

ABSTRAK

Adaptasi berbasis masyarakat (Community-based Adaptation - CBA) adalah pendekatan baru yang menarik karena merupakan proses perencanaan yang dipimpin oleh masyarakat, berdasarkan prioritas masyarakat, kebutuhan, pengetahuan dan kapasitas - sebuah proses yang harus memberdayakan orang untuk merencanakan dampak perubahan iklim (Hordijk dan baud, 2010). Tata kelola di tingkat masyarakat dianggap menjadi cara untuk membantu mereka dalam beradaptasi dan mempertahankan mata pencaharian mereka di pesisir sehingga mereka dapat tetap berada di wilayah tersebut. Tata kelola di tingkat masyarakat dapat melibatkan kelompok maupun individu untuk bersama-sama mengelola mata pencaharian dan konservasi di wilayah pesisir mereka. Intervensi dari organisasi pemerintah dan non-pemerintah juga berperan dalam proses adaptasi yang terjadi. Tulisan ini bertujuan untuk menguraikan peran tokoh lokal dalam proses CBA. Temuan menarik dari Desa Tapak, Semarang yang telah melakukan proses adaptasi berbasis komunitas mereka adalah bahwa keterlibatan masyarakat dalam adaptasi perubahan iklim sangat dipengaruhi oleh kehadiran tokoh lokal di wilayah tersebut. Adanya jaringan antara masyarakat dan stakeholder terkait dalam organisasi baik pemerintah dan non-pemerintah juga menjadi salah satu faktor pendukung bagi kelangsungan proses adaptasi berbasis masyarakat di wilayah pesisir Kota Semarang.

Kata Kunci: *Semarang, Adaptasi Berbasis Masyarakat, Tokoh lokal, Pesisir*

[1] Mahasiswa Magister Pembangunan Wilayah dan Kota, Universitas Diponegoro,Semarang,
Kontak Penulis : bintang.septiarani18@pwk.undip.ac.id
[2] Dosen Magister Pembangunan Wilayah dan Kota, Undip, Semarang, Jawa Tengah

INTRODUCTION

The direct impact of climate change is affecting on a local scale, that's why CBA considered as the most suitable approach to cope it. However, in conducting adaptation measures, it required overall effort at various levels of government, guided and supported by the strategies and adaptation policies at the national level. Meanwhile, management of climate change (both in adaptation and mitigation) is considered as a new concept and not fully understood by the stakeholders at the local level. The capacity of local governments to integrate climate change into long-term development planning is still also limited as climate change considered as a new issue in Indonesia. For instance as mentioned above, in Semarang, CBA effort has been being a concern since 2009, however, the existence of a spatial plan by the government also becoming the threat to the sustainability of CBA effort.

At the grassroots level, the need to be survived from the changing condition in coastal area has led community-based adaptation. Those processes have been identified as an approach to increase community resilience to climate change (Marshall, Park, Howden, Dowd, & Jakku, 2013). As climate change is considered as a new knowledge in Indonesia, the dissemination of this knowledge also become a concern. In accordance with national policy to increase adaptive capacity, local-based adaptation also fostered as one of national strategy (RAN-API – *Rencana Aksi Nasional – Adaptasi Perubahan Iklim*) along with the mitigation strategy. The government of Semarang also enacting adaptation based on community to increase local resilience. Thus, various stakeholder also involved in enacting the city adaptation strategy through community-based approach especially in a coastal region which directly affected by climate change not only in the physical but also in non-physical aspects. Community-based Adaptation become relevant to be focused on Semarang City since the pilot on climate change adaptation has been being conducted since 2009 to help increasing community resilience in coastal area.

RESEARCH METHOD

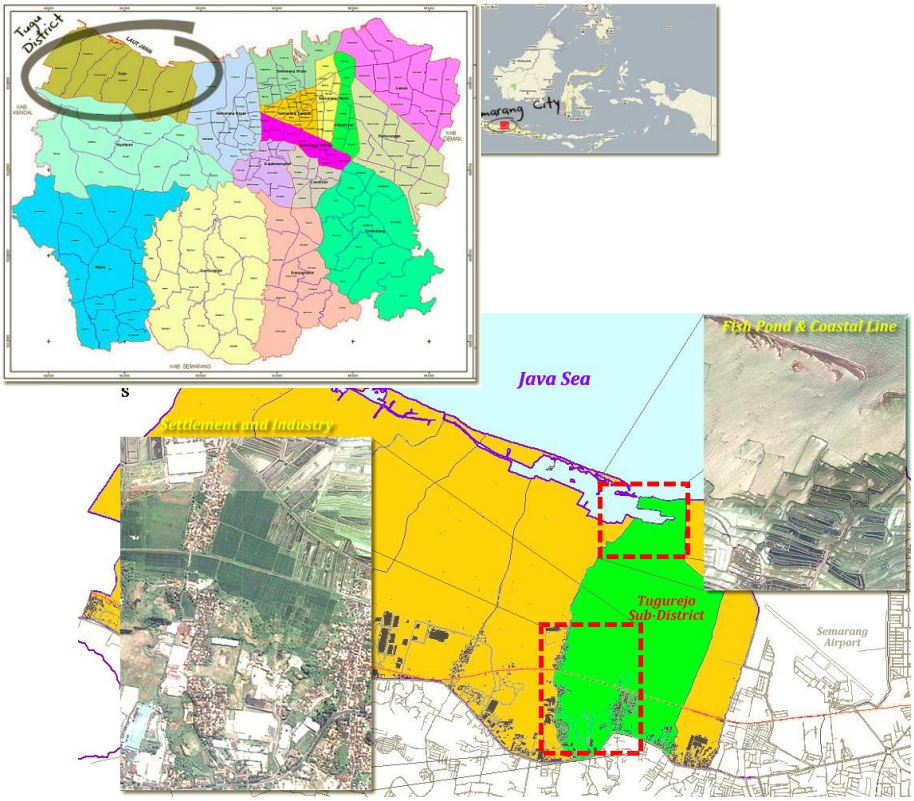
The purpose of this paper is to elaborate the role and the importance of local champion in climate change adaptation measure that already been rolling in Semarang since 2009. This quantitative study using questionnaire to collect information regarding community perception in the role of local champion in their area. Simple distribution of frequency chart is use to describes the data obtained for the study. Tapak village become the study area as the location is regarding as the pilot of Community-based Adaptation in Semarang coastal area from 2009 and still present until today.

OVERVIEW OF STUDY AREA

In Semarang City, there are 6 districts which considered as coastal district. One of them is Tugu District which is located in the western part of Semarang. Tugu District that has a coastal line along 6.17 kilometers consists of 7 sub-districts and all of them are bordered by the sea. Tugu width is 3,128 hectares. According to Semarang City plan, Tugu is directed for industry activity and fish cultivation. The development of the industrial area in Tugu causes a land conversion from agricultural and fish farming sectors into an industrial area in the last ten years. Its strategic location, located on national transportation lane, and its land price which is relatively cheaper make investor runs their industrial activity in this area.

Tapak is located in eastern of Tugurejo Sub-district, Tugu District which area large about 545.06 hectares. Tapak is located at 110020'22"E – 110020'43"E and 6057'16"S – 6059'10"S. Most of land in Tapak use to fish farm which is about 67% of their land. Compare with others sub-district in Tugu District, fish pond area conversion cause of coastal erosion and industry activity is smaller. During last ten years, they are losing fish pond caused by coastal erosion.

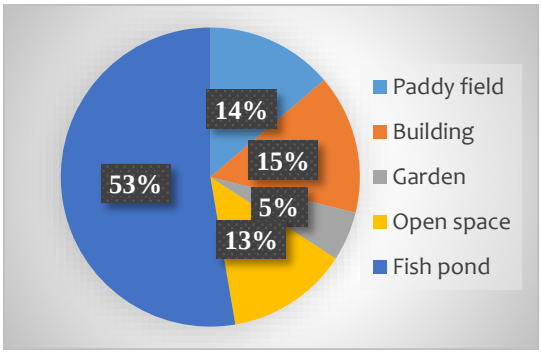
Tapak population in 2015 reaches 1.389 people in total. Based on age composition, 75% of the population also in the productive age.



Source: Bintari, 2009; modified

FIGURE 1.
TAPAK VILLAGE LOCATION

Based on the use of land, this village is dominated by the fishing pond which measured as much as 454.43 hectares or 53% of the total area. The shift is in addition to their livelihood opportunities in the industrial sector as well as the insistence of the various problems that threaten fisheries and marine farms. Revenues fall continuously due to declining productivity of the pond to encourage people to move to other jobs, especially in the younger generation.

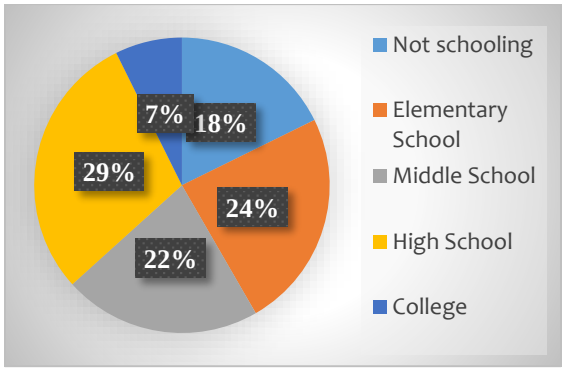


Source: Monograph Kelurahan Tugurejo, 2015

FIGURE 2.
LAND USE IN TUGUREJO SUB-DISTRICT

Social Dynamic in Tapak Village

Tapak village already exist since long ago and there is no record of when did this village first established. Many people in Tapak has been living there for more than 10 years and inherit the land from their ancients. The houses in Tapak are usually passes through one to their next generation. For instance, if they happen to own a house or fish pond in Tapak, they will pass the assets to their descendant. Family will often divide the house or assets according to the number of their descendant.



Source: Monograph Kelurahan Tugurejo, 2015

FIGURE 3.
LEVEL OF EDUCATION IN TAPAK

Seeing the level of education, Tapak village average level of education is vary from elementary school to high school. However the percentage of people who graduate from high school is slightly higher with 29% from the total population. Although there is also people who graduate from the college, but the number of people who are not get in the formal education or not schooling is quite high which reach 18% from total population in 2015.

Because people in Tapak has been living there from their ancestor, most of people who live in their neighborhood area are still their family member. The interaction between them are more based on the family connection. For instance, in one community group in Tapak, there can be more than one family member that also involve in the group. They will invite other family member to be in the community group with them.

Climate changes impact in Tapak Village

Studies conducted by BINTARI in 2010 showed that coastal erosion or abrasion has removed 300 acres of land and 225 hectares of mangrove in Tapak Village. One of the obvious effects of abrasion is the loss of Tirang Island area which is one of the islands that are part of the history of the Semarang City. In addition to the threat of climate change in the form of extreme weather, rising temperatures, and rising sea levels also increase the vulnerability of the region. Development activities also put pressure on society and pose a threat to their economic life. River pollution due to industrial activities, domestic waste due to lack of service, and high sedimentation due to changes in land use in the upstream region aggravates Tapak Village which dominated by the fishing ponds. The area of a fish pond in Tapak is approximately 454.43 hectares or 53% of the total area.

In addition, the continued rise of sea levels caused the loss of small mangrove plants that grow so slow the development of mangroves in the Tapak coastal region. These things are also compounded by the fact that the land subsidence due to excessive groundwater in coastal areas of Semarang. Exploitation of ground water mainly by industry and the service sector makes soil degradation worsened. Utilization of groundwater for daily needs of society, in general, use shallow aquifer depth of 10-40 meters with discharge from 0.07 to 1.3 liters / sec. Especially for the needs of the industry in large numbers, they took of aquifers in which more than 40 meters deep. The combinations of sea level rise and land subsidence causing seawater intrusion which commonly referred as Rob or tidal flood.

As coastal areas, Tapak also faces the problem of coastal erosion. On the physical side, at first, mangrove destruction in Tapak occurred because of land clearing activities by the community to create fish ponds, but in the last 20 years more mangrove destruction caused by high waves. In addition, exploitation of sea sand carried by the industry in the border city of Semarang and Kendal, recognized by the community into factors that influence the ocean flows around Tapak Village. Mangrove located on the coastline in damaged condition and it is getting worse because of very low growth rate cultivation of about 30% (*a2/b20/c2*, 2015).

Increased temperatures continue to occur in Semarang affect the salinity of the sea water which causes damage to the mangrove plants that are not resistant to high water salinity. In addition, the continued rise in sea levels caused the loss of small mangrove plants that grow so slow the development of mangroves in the coastal Tapak Village. Utilization of groundwater for their daily needs people generally use the shallow aquifer depth of 10-40 meters with a discharge of 0.07 to 1.3 liters / sec. Especially for the needs of the industry in large numbers, they took from the deep aquifer that is more than 40 meters deep. A mix of sea level rise and the decline in ground water level obviously caused seawater intrusion commonly referred to as Rob or flooding. The existence of an increasingly rob impact the physical and economic conditions in Tapak Village.

In terms of the economy, the high tides also have an impact on fishpond farming production in Tapak Village. All fish farmers in Tapak cultivated fish and shrimp in the pond they were during the high tide, most of the cultivation they will be swept away by the sea water and cannot be harvested. Most farmers agree that higher sea levels that often occur due to climate change will affect their farms, especially for owners of farms, which are located directly adjacent to the sea.

The tide will erode their farms so that farmers have to regularly repair their ponds afterward. Due to climate change, formerly the high tide season is common occur in the month of April-

May every year, now occur not just once a year but sometimes even shifted in June or even cannot be predicted, so the economic losses would increase per year.

Decreasing sources of income from the sea and fish ponds, causing many residents who later switched professions to become a factory worker. With increasing activity in the field of industrial society and not directly proportional to the number of people who helped manage the coast, then the carrying capacity of coastal areas will decrease. The long-term impact of a decrease in the carrying capacity of coastal regions is no longer able to accommodate the activities of the people there so that eventually the condition will force people to move away from the Tapak region.

CBA in Tapak Village

At the beginning of the development community in Tapak, people tend to be more skeptical and are not aware of the condition of their coast. However, people in Tapak still use local knowledge in managing their coastal areas, especially with regard to the sustainability of their ponds. One of the main reasons why Tapak selected as an area for community participation in the conservation of the coast is because the value of local and community spirit in Tapak. The active involvement of the youth group that is in main reason why the initial activities by FoE-BINTARI and do in the region.

In the early stages, planning for conservation of mangrove by communities through Prenjak group invited to recognize their environment by mapping the potential and the problems encountered both in terms of environmental, economic and social. Facilitated by BINTARI, Prenjak group began to get involved in the community in the problems and basic needs required in their region. The mapping process is underway with the potential and problems of using focus group discussions. In addition to participate in mapping the potential and problems, people are also involved in making an action plan for conserving the environment in the Tapak Village. The action plan is based on a workshop held jointly with the community and based on the conditions and the expectations of society towards coastal management in Tapak Village (BINTARI, 2010).

In addition to map the potential, BINTARI and FoE initially provide an improved understanding of the conservation of mangrove communities such as the introduction of breeding techniques and planting mangrove. In the first stage of mangrove introduced in Tapak, people only know there are two different types of mangroves that grow in their area. They do not know the name of mangroves and also do not know the benefits of mangrove plant. Is KeSEMaT student group associated with the University of Diponegoro, in cooperation with joint projects and FoE BINTARI he later taught mangrove seedlings to the community through a Prenjak group. After identifying the species of mangrove in Tapak, KeSEMaT help people to make a mangrove nursery in their area. The initiation process of making the nursery starts from the thought that by having a mangrove nursery in Tapak can help people to easily get the mangrove seedlings to be planted and also, they can sell the mangrove seedlings to provide additional income for the community.

Mangrove nursery coordinated and implemented by a group of farmers that Sido Rukun pond. The breeding process is intended as an attempt to meet the needs of their own seeds or to be sold to provide additional income for the community. Seeding process taught by KeSEMaT to Tapak community is very different from the process of seeding in other coastal areas. Typically, the process of seeding done by KeSEMaT using seedlings house they built

near protected areas, but in Tapak, they are taught to nursing mangrove naturally. This is done because the community does not have a location in accordance with the criteria seedlings home taught / presented by KeSEMaT. The available land in the area is the land from which the tide, and for the average pond in Tapak with the pond deep enough (1 - 1.5 m) that it will affect the ideal conditions of mangrove. The team of BINTARI, FoE and KeSEMaT realize at the time that it will take no small cost to fabricate these areas is ideal for seedlings, then comes the nursery initiative is placed on land near the river affected by the tides.

As soon as they begin to learn how to plant and cultivate mangroves, they began selling their mangrove seedlings production in Tapak Village. At first, their customers are city institutions that want to plant mangroves on the coast of Semarang eg Environment Agency (BLH) of Semarang. They soon realized that the mangrove planting is not only beneficial for the environment, but also provide economic value to them. Society has learned that the value of the economy in coastal conservation will attract more people than Tapak Village itself to be more involved in coastal conservation.

Source: Primary survey, 2015

FIGURE 4.
MANGROVE PLANTATION SUROUNDING FISH POND IN TAPAK VILLAGE

Tapak Village community which in this case led by Prenjak group on its journey to realize that it is important to embrace various aspects of society that is in the Tapak Village. The initiative has sparked the emergence of new groups that are more specific to their respective roles in the management of the coastal zone. Until 2015, there were five types of groups formed by similarity profession or interest namely: fishpond farmer groups, fishermen groups, women groups, tourism awareness group and youth groups are newly formed with their focus on waste management. Each group has a vision and different views according to their expertise, but with the same goal of increasing their adaptation capacity to face the changes that occur in the region. The tourism awareness group namely Pokdarwis (Kelompok Sadar Wisata) was the newest group consist of representative from each community group with the main focus to managing eco-tourism in Tapak Village.

Some groups such as the fish farmers and fishermen groups actually been formed since the early 2000s. Fish farmers group was formed in 2006 with the main purpose to share experiences and knowledge about the progress of their ponds. In general, there are about 145 fish farmers in Tugurejo were divided into three groups: Sido Rukun, Mina Anak Laut, and

Anak Laut. However, not many fish farmers are actively involved in the group. Recorded until early 2014, there are 100 fish farmers who are members of groups of fish farmers. Group of fish farmers in the Tapak Village itself is Sido Rukun farmer groups formed since 2006. Some of the activities carried out by groups of fish farmers are:

- mangrove forest rehabilitation program through the seeding and planting of 20 hectares of mangroves since 2006, working with NGOs, academia and the private sector (via CSR)
- Cooperation with the University of Diponegoro fish farming to produce fish adaptive in 2010.

For fish farmers, climate change impacts productivity is bad for their ponds. Call it a definite problem of climate change is an increase in temperature occurs. Based on the results of a study conducted BINTARI in 2009, an increase in temperature will increase the salinity of sea water which causes the growth of the fish in the pond is getting slower so need extra feed to accelerate the growth of the fish. Additionally, sea level rise and flooding due to the frequent occurrence of extreme weather causing them to lose the ponds that lead to a high risk of losing fish which may be harvested soon. To overcome this problem, several attempts were made public in such conduct diversifying the types of fish in ponds, which is more resistant to high salinity and planting mangroves on the land around the pond to reduce the impact of erosion.

Another impact of coastal erosion resulted in a decrease in productivity of ponds. Much earlier, ponds can produce 4 tons per harvest, but after a rise in sea level, each pond only produce 1-2 tons of fish per harvest. Fish farmers realize that mangroves can be a natural source of food for fish in their pond as well as other organisms that live in their pool. Mangrove roots that can be used as a shelter for craps and shellfish to stay there and provide benefits to fish farmers as additional income from their ponds.

Another group formed in Tapak is a group of fishermen. Fishermen Group was formed in 2010 after the PNPM Mandiri (National Program for Community Empowerment) of DKP Semarang, the number of fishermen in Tapak about 20 people and is a member of the fishermen group is 13 people. Fishing groups is a relatively new formed group. The formation started in 2010, in the context of its relationship with DKP (Department of Marine and Fisheries) to develop fishing gear development program to support their activities. The group activities are not as many as fish farmers group, they only focusing on sharing wheatear information.

Source: Primary survey, 2015

FIGURE 5.
MANGROVE SEEDLING IN TAPAK VILLAGE

Tapak Village fishermen in fishing with a small motor boat and rely on their own nets to catch fish. They immediately sell the seafood they catch to the nearest market, namely the fish auction place (TPI-*Tempat Pelelangan Ikan*) Mangkang. The marine products into the catch varies depending on the season. One form of adaptation that they can face the changing of the seasons is to change the type of nets used. For the dry season, they use nets with different densities with nets that they use in the rainy season because of the type of fish obtained will be different in the dry season and the rainy season. In the rainy season, fishermen would catch crabs with average daily catches as much as 3-5 kg or Rp 120,000 - Rp 200,000 per day (assuming the price is Rp 40,000 per kilogram crab). It will of course be different in the dry season because the crabs will be more elusive in the dry season so that they change their nets to catch fish. Proceeds from sales of fish is not as much as the crab, the average daily income them if only to catch fish only reach a maximum of Rp 100,000 - Rp 150,000 a day. With the change of weather extremes, catch crabs also reduced, causing many fishermen are ultimately only use fish around the beach and mangroves as their last resort in the event of bad weather.

The formation of a group of fishermen is considered helpful for the fishermen to exchange ideas about the problems they face related to climate change. Meeting a group of fishermen is not performed routinely every month, but they will soon gather in case of problems related to their environment. With this meeting, they were able to exchange information and knowledge to deal with changes in their territory, thereby reducing the effects or possible health risks such as the risk of climate change.

The role of the group Prenjak really significant to other communities in Tapak Village. Prenjak now have the ability to engage others to get involved in the conservation of Tapak coastal area. The first project led to a turning point for Prenjak is Mangrove planting project undertaken by BINTARI in 2009. Several meetings conducted by the public at that time led to the conclusion that their learning process cannot be stopped in any mangrove planting. They should be able to take advantage of mangroves not only for the environment but also as their main livelihood.

The second activity after building understanding and the formation of the group, is to establish a dialogue through a plate form the city level by involving multiple stakeholders. To support the establishment of the platform, BINTARI, FoE and DKP initiated to KKMKS formation (Mangrove Working Group Semarang) in 2011, and Prenjak is one of the initial members belonging to this team. After learning about the importance of coastal conservation and involvement in KKMKS, Tapak people who started to build their networks in order to promote their activities. Through the forum in KKMKS, the community has the ability to communicate their ideas and think about coastal conservation in their area.

The success of community groups that encourage the formation of two new groups to improve community involvement in terms of adaptation to climate change. The new group formed the group of women and the youth group Women Tirang waste management. Women constitute one of the segments of the population vulnerable to climate change. Groups of women who formed is expected to increase the adaptive capacity of women in the face of changes and challenges arising from the effects of climate change both directly and indirectly.

Eco Tourism Development in Tapak Village

The activity of community in Tapak, lead the idea to develop the area as one tourist destinations in Semarang. The main concept for the tour is how to promote mangrove conservation as integrated education center in Semarang or commonly known as Mangrove Eco-Tourism (Eco-Edu Wisata Mangrove - EEWM). The term integrated here is how mangroves can be used not only to educate people who come as tourists, but also involve the surrounding community so that they can enhance their adaptation capacity.

Efforts to realize the idea of Eco-Tourism has been made by several parties. After the initiation by BINTARI, FoE and Prenjak, on 2010, former head of the Department of Marine and Fisheries (DKP) Semarang tried to initiate the development of Tapak to support tourism activities. The process begins by doing a focus group discussion (FGD) which produce recommendations on the scope, attractions and strategies that can be done to develop EEWM. In addition, infrastructure development that involves other government agencies are also made to support the Site. At the end of 2012, the highway department (Department Binamarga) in Semarang with the facilitation of the DKP, building a concrete road that connects the village to the mangrove conservation area. In addition to road construction, DKP also helps Tapak in building dock for boats to support tourism activities in Tapak. The concept, tourist can use a wooden boat to the Tirang Island and enjoy the river surrounded by mangrove forests. The effort also supported through another program which is from ACCCRN to support the development of tourism menu and developing coastal product by community group. In September 2015, Prejak group through ACCCRN has been succeed to conduct tour simulation to test the eco-tourism menu before it launched on the end of 2016.

Source: Primary survey, 2015

FIGURE 6.
ROAD TO THE ECO TOURISM SITE IN TAPAK

The eco-tourism development not only provide benefits for the community in Tapak but also all relevant actor that are concern in coastal conservation in Semarang. There are 14 industries located along the Tapak river engaged in fish processing, furniture, soap, food, and building materials. Marimas, also one of the companies that provide some training to women groups about how to produce snacks of mangrove and training how to recycle their solid waste. The company contribution to the community is part of their CSR (Corporate Social Responsibility). The private sector to develop CSR programs with mangrove planting as a concern for the environment and often performed in Tapak with direct connection to Prenjak. The main benefit of these companies do CSR in Tapak is a publication that they have to support the product. With the development activities of the Eco-Tourism, they expect a good impact on society and the private sector.

THE ROLE OF LOCAL CHAMPION IN PRENJAK

Community group can be seen as media in transferring knowledge to community member (Feola & Nunes, 2014; Nanlohy, Nur, & Hutabarat, 2015) hence Prenjak as the most stakeholder who has advantage in having connection to other stakeholder also become the most suitable place for community in Tapak to get information about climate change. However, seeing the understanding of climate change of people in Tapak, it can be seen that there is a gap between this. Even Tapak which already receive a lot of attention (information, funding, and assistance/advice), the understanding on climate change is still not clear.

Approximately 66% of respondent in Tapak said that they do not know what climate change is. Even there is also many community group in Tapak (youth group, women group, fishermen group and fishpond farmer group), and many intervention has been conducted in Tapak, community still confuse to distinguish what climate change is. This confusion in because the flow of information between group and community is limited in the implementation of program. However they do not understand why the program is conducted as long as it give benefit to them. From Table IV.24, although 29% respondent can divine climate change as the impact of increase temperature, in can be seen that most people see climate change as a changing weather and transition of season.

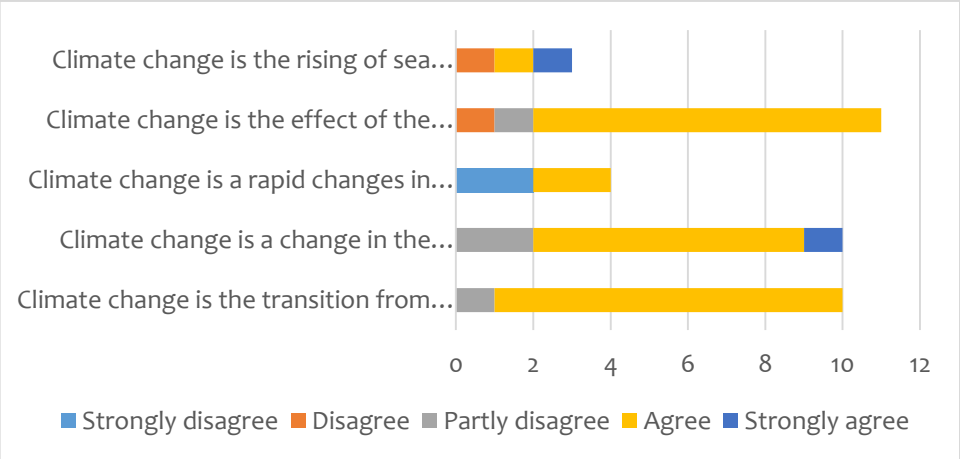
TABLE 1.
COMMUNITY IN TAPAK PERCEPTION ON WHAT CLIMATE CHANGE IS

	Tapak Village
Climate change is the transition from rainy season to dry season	26%
Climate change is a change in the weather	26%
Climate change is a rapid changes in weather from rain to dry	11%
Climate change is the effect of the increase in the Earth's temperature that causing global warming	29%
Climate change is the rising of sea level, causing rob	8%

Source: Researcher analysis, 2016

Even among people who are agree that they are actively involves in community group, the knowledge on what climate change is still vary (Figure 7). This might be because the flow of information among people in the community group itself is not equal. As previously explained that the main agenda of community group meeting is Arisan, community member come to the meeting is mostly because they want to join the Arisan and does not really pay attention to the other information.

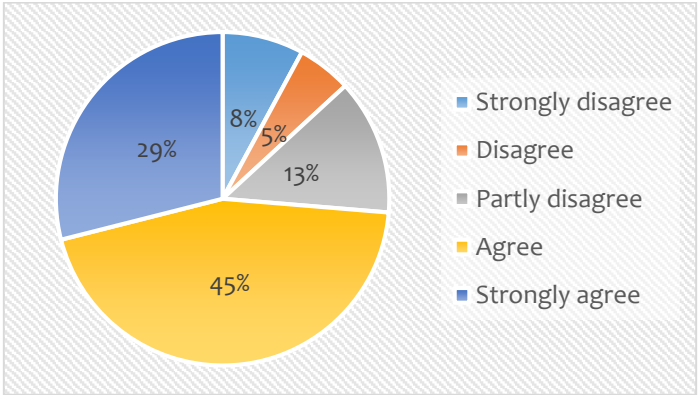
Seeing from Prenjak connection, in the fact people who actively connected with other stakeholder in the network is only the representative of Prenjak and one person can continually join activities with other stakeholder without reshuffling with another member. Hence value introjection as the source of social capital can be found in Tapak.



Source: Researcher analysis, 2016

FIGURE 7.
COMMUNITY IN TAPAK PERCEPTION ON WHAT CLIMATE CHANGE IS (AMONG COMMUNITY GROUP MEMBER)

Mostly people who become the representative of community group is their community leader. Inline with Nanlohy (2014) who highlighted that people who has climate change knowledge mostly are the community leader, the connection that only community leader has, is become the reason why the information and knowledge is not widely spread to community member. Although networking is essential in sustaining community based adaptation (Feola & Nunes, 2014; King, 2014), however the existence of local champion in the community group is really important to sustaining the process. In fact, the community member in Tapak also see that they mostly depend on the invitation from community leader to be involved in community activities. (Figure 8).



Source: Researcher analysis, 2016

FIGURE 8.
COMMUNITY IN TAPAK PERCEPTION ON THE REASON THEY JOIN COMMUNITY GROUP ACTIVITIES

Figure 8 implies that only approximately 45% of total respondent in Tapak who agree and 29% strongly agree that they involve in community group activity because of the invitation from community leader. This mean that among people in Tapak, there are still a tendency to trust community leader or someone who are respected and trusted in community to invite them

in join the activity or to disseminate knowledge and information. This also become a challenge to community to develop the system which not only increasing the capacity of community local champion but also increasing their capacity to spreading the knowledge they got in network to the community member. In Tapak case, the networking with stakeholder might be the reason why CBA still conducted in their area, however the existence of local champion is essential because they have the access to network and knowledge about climate change itself. Also the connection that build through the networking is still limited in the level of each local champion that involved in the activities.

CONCLUSION AND RECOMMENDATION

Some things that can be learned from the CBA in Tapak are, the community group in Tapak is importan t in maintain the sustainability of CBA, the presence of local champion who is trusted by community such as community leader also important to gain trust among community member to community group. However, the only local champion can become the challenge for community group to develop because they are become more depending on that one local champion. Also, because social capital can become the source of adaptive capacity, the local value of community is still important for social capital that can enact and gain awareness among community to preserve their area. Hence, the area with more rural characteristic and more values are become potential to inforce CBA approach in their area.

BIBLIOGRAPHY

Axt, Heinz-Jürgen, M., Antonio, S., & Oliver. (2006). Conflict – A Literature Review. Duisburg: Universität Duisburg Essen.

BINTARI Foundation. 2009. Upaya Adaptasi Dampak Perubahan Iklim Sektor Pesisir di Tapak Tugurejo Semarang. Semarang: BINTARI Foundation

Carter, J. G., Cavan, G., Connelly, A., Guy, S., Handley, J., & Kazmierczak, A. (2014). Climate change and the city: Building capacity for urban adaptation. Progress in Planning, 95, 1–66. doi:10.1016/j.progress.2013.08.001

Feola, G., & Nunes, R. (2014). Success and failure of grassroots innovations for addressing climate change: The case of the transition movement. Global Environmental Change, 24, 232–250.doi:10.1016/j.gloenvcha.2013.11.011

King, S. (2014). Community-based adaptation: A global overview of CARE International's practice of Community-Based Adaptation (CBA) to climate change, 62pp.

Krellenberg, K., Link, F., Welz, J., Harris, J., Barth, K., & Irarrazaval, F. (2014). Supporting local adaptation : The contribution of socio-environmental fragmentation to urban vulnerability. Applied Geography, 55, 61–70. doi:10.1016/j.apgeog.2014.08.013

Marshall, N. A., Park, S., Howden, S. M., Dowd, A. B., & Jakku, E. S. (2013). Climate change awareness is associated with enhanced adaptive capacity. Agricultural Systems, 117, 30–34. http://doi.org/10.1016/j.agsy.2013.01.003

Ministry of Maritime Affairs and Fisheries. 2009. Means Of Adaptation And Mitigation Of Climate Change and Disaster at Coastal Areas and Small Islands. Jakarta: Ministry of Maritime Affairs and Fisheries.

Miladan, Nur. (2009). Kajian Kerentanan Wilayah Pesisir Kota Semarang Terhadap Perubahan Iklim. Semarang: Master of Regional and Urban Development, Diponegoro University.

Nanlohy, H., Nur, A., & Hutabarat, S. (2015). Coastal Communities Knowledge Level on Climate Change As a Consideration in Mangrove Ecosystems Management in the Kotania Bay , West Seram Regency. Procedia Environmental Sciences, 23(Ictcred 2014), 157–163. http://doi.org/10.1016/j.proenv.2015.01.024

Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. Global Environmental Change, 16, 282–292. doi:10.1016/j.gloenvcha.2006.03.008

Semarang. 2010. Kajian Kerentanan Dan Adaptasi Terhadap Perubahan Iklim Di Kota Semarang – Semarang Vulnerability Assessment. Semarang: ACCCRN, ISET, CCROM, Mercy Corps Indonesia, URDI

Wilhelm, Mario. 2010. Chapter 5: The Role of Community Resilience in Adaptation to Climate Change: The Urban Poor in Jakarta, Indonesia. Jakarta: Indonesia