

RISK REDUCTION PROGRAM OF FLOOD-BASED COMMUNITY (COMMUNITY FLOOD RESILIENCE- (CFR)) AS AN EFFORT TO CREATE SUSTAINABLE DEVELOPMENT IN SURAKARTA CITY

Dani Bina M. S,Sos¹, Dr. Bagus Haryono, S.Sos.,M.Si², Dr. Ahmad Zuber, S.Sos.,D.E.A³

¹Postgraduate Student of Sociology Magister Program UNS

²Lecture of Sociology Magister Program UNS

³Lecture of Sociology Magister Program UNS

ABSTRACT

Disasters are events that threaten and disrupt human life, and cause great losses to both the maternal and non-material. Disaster management is aimed at efforts to reduce disaster risk and create communities that are resilient. The purpose of this study is to examine sociologically the form of resilience (resilience) of the community to floods, assess holistically through evaluation and find harmony with sustainable development. The theory used is Adger's vulnerability and Rogers's Innovation Diffusion. The research method is qualitatively. Data collection techniques are through observation and interviews, and documented. The research location is in Sangkrah Village, Semanggi Village and Sewu Village. The results of this study indicate that sustainable disaster risk reduction efforts are carried out with a mechanism to increase community capacity to form a resilient community system of disasters. Based on the CIPP evaluation framework, the CFR program fulfills most of the required aspects which include the context, input, process and product, so that the program can run well in the community. The formation of SIBAT (Community Based Disaster Alert) was studied using Rogers' theory (Innovation Diffusion) about communication channels, where SIBAT was in a heterophily and homophily position, meaning SIBAT represented the condition of the community as well as agents for the CFR. Vertiminaponic formation as an effort to create economic resilience. Making biopores as clean water reserves, installation of infiltration wells to reduce water logging during floods is a form of environmental resilience. The establishment of SIBAT (Community Based Disaster Preparedness) as the main agent for implementing the CFR program which has a role to coordinate the implementation of programs which are integrated with EWS technology (Early Warning System) and institutions in the community as social security. The pattern of community resilience reflects the ability of a system to reduce vulnerability and increase capacity, according to the Sendai Framework indicator. The whole program embodies sustainable development, namely where the conditions of balance and resilience of the ecosystem are met and (natural capital stock) do not diminish over time (non-declining)

KEYWORDS: flood disaster, CFR program, CIPP, disaster risk reduction, resilience, sustainable development.

1. INTRODUCTION

Indonesia is a country with a high level of disaster risk. Indonesia is located in one of the most active disaster centers in the world. Geologically, Indonesia is located between the plates of Asia, the

Pacific and Australia. Geographically in the form of islands and maritime countries, demographically has a large population and spreads unevenly, sociologically belonging to multiethnic and multicultural societies.

One of the rivers that often experiences flooding is the Bengawan Solo River. The Surakarta City Disaster Management Agency (BPBD) is wary of 21 urban villages in Surakarta City as a flood-prone area. 21 villages that were considered prone to flooding were scattered in five sub-districts, including in Pasar Kliwon Subdistrict consisting of Semanggi, Sangkrah, Kedung Lumbu, Joyosuran and Pasar Kliwon Villages, in Laweyan District there were Panularan, Bumi, Pajang Subdistricts, while in Serengan Subdistrict there were Kelurahan Joyontakan, Tipes and Serengan, for Banjarsari Subdistrict there are Sumber, Banyuanyar, Gilingan, Nusukan, Kadipiro and in Jebres Subdistrict there are Mojosongo, Gandekan, Sewu, Pucangsawit, Jebres (surakarta.go.id, accessed on July 27, 2016).

Rahardjo (Rahardjo, 2009: 1) mentions floods in Surakarta City can occur several times in each rainy season and even flooding can occur more than 3 days. As a result, considerable losses must be borne by all components, both the public, the private sector and the regional government. Flood disasters which are classified as disasters that occur in a long period of time, this results in many losses arising both socially, economically, damage to infrastructure, public facilities, and so on.

The causes of flooding are the silting of the river because of the accumulation of garbage in the riverbed, besides that due to the poor drainage system and lack of water absorption land. Flood disasters are increasingly at risk because of vulnerability in the community, including education, economics, conditions of dense and slum settlements and vulnerability due to natural factors. Another form of vulnerability is that there are still people living on the banks of the Bengawan Solo River where they are vulnerable to flood hazards, and cause narrowing and siltation of rivers. The weak capacity of BPBD / Satlak for disaster management is also an important factor causing flood vulnerability. Geological status, geographical demographic area, such as high rainfall, low land, can also add to the vulnerable condition of the community. In addition, the conditions of the Bengawan Solo River embankment and sluice that are getting older and less well maintained are very vulnerable to damage (Isa, 2013: 103).

In UU No. 24 of 2007 Article 6 (point a) concerning Government Responsibility in the implementation of disaster management, namely disaster risk reduction and integration of disaster risk reduction with development programs. This relates to institutions or bodies that are under the Surakarta City Government which are authorized to carry out disaster management, namely BPBD, PMI and SAR along with other institutions or agencies that are seconded.

The Indonesian Red Cross (PMI) has developed a Community Flood Resilience (CFR) Program to deal with the annual disaster. This activity was carried out in DKI Jakarta, West Java Province,

Central Java Province and East Java Province. The Chairperson of the PMI Center for Disaster Management, Soemarsono, revealed that this program was carried out to build the capacity of communities in the riverbank area.

2. RELATED WORKS/ LITERATURE REVIEW

In this study includes several concepts that are used as limits to data search and analysis of results. The concepts used among others are as follows:

- 2.1 Disaster risk reduction namely Disaster risk assessment is an approach to show potential negative impacts that may arise due to a potential disaster that strikes. The potential negative impacts that arise are calculated based on the level of vulnerability and capacity of the region.
- 2.2 Flood disaster, which is according to UU No.24 of 2007, a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused by natural or non-natural factors and human factors resulting in human casualties, environmental damage loss of property and psychological impact.
- 2.3 The Community Flood Resilience (CFR) program is a program implemented by PMI in collaboration with the international insurance agency Zurich. The CFR program is aimed at countries that have the characteristics of floods, one of which is in Indonesia.
- 2.4 Sustainable Development (SDGs) is a condition if a condition is said to be sustainable if the utility obtained by the community does not decrease over time and consumption does not decrease over time (non-declining consumption)
- 2.5 Evaluation of CIPP (Context, Input, Process, Product) was developed by Daniel Stufflebeam in 1966. Stufflebeam defines evaluation as a delineating process, obtaining and providing information that is useful for assessing alternative decision-making.
- 2.6 The Sendai Framework is a 2015 - 2030 Disaster Risk Reduction framework.

3. MATERIALS & METHODOLOGY

3.1 Data

This type of research is qualitative research using an evaluation model approach Context, Input, Process, Product (CIPP). The research sites were in three urban villages namely Sewu, Semanggi and Sangkrah. Primary data were obtained from PMI Surakarta, Village Government in Semanggi Village, Kampung Sewu and Sangkrah, Chair of RT and Chair of RW in Semanggi Village, Kampung Sewu and Sangkrah, parties who supported and were involved in Community Flood Resilience (CFR) programs such as SIBAT, KSR, SAR Team, BPBD. Secondary data in the form of supporting documents such as the monograph documents of the Semanggi village, Kampung Sewu and Sangkrah, profiles of the Semanggi, Sewu and Sangkrah villages, the Surakarta City Government Regulation on disaster management, PMI's documents about the Community Flood Resilience (CFR) program. This research uses purposive sampling to find the right informants or sources to be the source of research data. Data collection techniques are carried out using observation techniques, in-depth interviews and documentation. Data validity used is Triangulation technique.

The data analysis technique that will be used in this study is the data analysis model of Miles and Huberman. This method is the most appropriate and relevant method for examining processes or meanings.

3.2 Method

This study uses the CIPP evaluation approach. In general, the Context Input Process Product (CIPP) method is an evaluation model that is used to carry out a process of reflection, criticism, recommendations for the running of a program or activity that involves elements of context, input, process and product in a series of activities or activities. Programs and evaluations become one that requires each other, because a program without evaluation means that we cannot know the reflection of the program itself. On the contrary, if there is an evaluation that is not included in better program innovations, the evaluation will not be a learning for a condition.

4. RESULTS

4.1 Overview of Sewu Village

Sewu Village is in the area of Jebres Subdistrict, Surakarta City, Central Java Province. The area of Sewu village is 48.5 ha with an eastern boundary: Bengawan Solo River. South side: Sangkrah Village, Jebres District. West side: Gandekan Village, Jebres District. North side: Jagalan Village, Jebres District. Geographically, Sewu village is a sloping plain, adjacent to the Bengawan Solo river. The impact experienced by residents is during the rainy season, causing this area to be flood-prone due to overflowing volumes of river water. Demographically, Sewu village has 2,277 family heads. The livelihoods of the majority of the population are 2,973 industrial workers and 692 construction workers and 2,023 others. The majority of the education level of the high school graduates is 2,161, the second highest is graduating from elementary school with 1,364 people. The facilities and infrastructure in the Sewu village include two-wheeled motorized vehicles totaling 2,780 units, bicycles 945 units, television 2,567 units. The Sewu village community also has a high level of complexity because it is classified as a multicultural society because its people adhere to several religions including Islam, Christianity, Catholicism, Confucianism, Hinduism and Buddhism.

4.2 Overview of Sangkrah Village

The area of Sangkrah Village has an area of 45.20 Ha which is directly adjacent to the Village of Gandekan in the north, Kelurahan Kedunglumbu on the south side, in the west it is bordered by Kelurahan Kedunglumbu and on the east it borders on Sukoharjo Regency. Sangkrah Village is located between 4 major rivers in Surakarta, namely Jenes River, Pepe River, Tegal Konas River, and Bengawan Solo River. This position causes the Sangkrah area to be prone to flooding during the rainy season. Characteristics of flooding that occurs is flooding due to the high intensity of rain during the rainy season arrives. Sangkrah Village consists of 13 RWs and 58 RTs. Based on data, the number of heads of families in Sangkrah is 4,020 households (head of family). While the total population is 12,490 people consisting of 6,235 male residents and 6,255 female residents. The level

of education of the community in Sangkrah Village, the highest level of education is high school, then junior high school and DIII to S3.

4.3 General Overview of Semanggi Village

Semanggi village is bordered by several other villages, namely, the boundary of Semanggi Sebalah Timur Village: Sukoharjo Regency, South: Sukoharjo Regency, West: Joyosuran Village, North: Sangkrah Village. Semanggi Village has an area of 166.82

The most extensive land use in the Semanggi village is as a settlement, this is supported by a large population. Subsequent land uses are roads, bridges, schools, government offices and so on. Semanggi area which is a dense settlement is dominated by local people, immigrants with the most mobility work as industrial laborers. The large number of these settlements creates a slum environment. The slum environment in the Semanggi village is not only seen from the environmental side, namely the poor drainage system, besides that it is caused by a low level of welfare, said Semanggi Village Head that there are many RASTRA (Beras Sejahtera) recipients because they have the most Gakin (Keluarga Miskin) many in the Solo. Region Community livelihoods in the Semanggi sub-district other than traders are industrial workers and construction workers. Based on the dynamic monograph data shows that the education level of the educated category is the highest number, namely for graduates of senior high school level or equivalent, the next level is junior high school or equivalent.

4.4 Implementation of CFR (Community Flood Resilience)

Community Flood Resilience is an initiative that focuses on the development of flood-prone areas in several countries with characteristics of regions that have many large rivers such as Indonesia, Mexico, Canada and Nepal. The CFR moves under the authority of the Zurich insurance institution in Switzerland. In collaboration with IFRC (International Federation of Red Cross) which is an independent institution engaged in the international humanitarian field and PMI Indonesia. Zurich makes a CFR (Community Flood Resilience) program with country targets characterized by floods. SIBAT volunteers are implementing agents of CFR programs in each kelurahan, SIBAT is provided with training materials such as KBBM (Community Based Disaster Preparedness), disaster management technical guidelines, ranging from natural disasters, accidents, disaster management and post-disaster recovery processes, PHBS, baseline survey, risk mapping. All SIBAT members are conditioned to know KBBM concepts properly through scheduled training. CFR is carried out through several stages, namely, baseline, mapping, VCA PRA (Vulnerability and Capacity Assessment Participatory Rural Appraisal), RRA (Rapid Rural Appraisal) from the results of a series of assessments which are then prepared to be appropriate mitigation in each of these village

The implementation of CFR refers to the concept of resilience which is a mechanism to survive in an environment that has risk potential, this resilience concept is not only applied in the context of disaster, but can also be applied to environmental aspects, food security, national security and so on.

The capital approach or referred to as livelihoods assets is a conception of capital or a vital element of society. Capital consists of five components, namely human capital (human capital / HR), financial capital (financial capital), social capital (social capital), physical capital (physical capital), and natural capital (natural capital / SDA).

The implementation of the CFR in 2015 began with village selection, socialization, baseline survey, and the establishment of SIBAT in each village. In 2016, the implementation of the CFR began to hold various activities such as making infiltration wells, biopore holes, installing installations for vertiminaponics, installing evacuation routes and training using FEWEAS (flood detection application).

Biopore holes are designed so that organisms in the soil and other small animals that function maintain the balance of the elements in the soil. Pipes that are used as biopori media are surrounded by small holes and are given leaves of waste, it is intended that earthworms can change the leaves into fertilizers which will increase soil fertility and increase the quality of groundwater.

Infiltration wells help the process of absorption of stagnant water, considering that many lands in urban areas are covered with asphalt and concrete so that the water absorption process lasts long. This recharge well serves as a source of groundwater reserves. Vertiminaponik is a technique of planting vegetables using a medium of water that is channeled to a reservoir containing fish. The vertiminaponic placement is placed at a position higher than the ground so that when the flood occurs it is not washed away by the flow of water.

The next activity, which is PHBS (Clean and Healthy Lifestyle) is used to provide knowledge about clean and healthy living habits, form habits by providing proper hygiene facilities, in addition by opening public spaces to discuss hygiene and health.

The FEWEAS application (Flood Early Warning and Early Action System) is an application to monitor the water level in the Bengawan Solo River. Not only used in Bengawan Solo, the application of FEWEAS is also used for the Citarum and Ciliwung rivers. FEWEAS is an android based application, so it can be downloaded and used on smartphones to find out the status of river water rise, weather predictions, inundation points and so on.

The implementation of CFR in 2017 the manufacture of vertiminaponics in the Semanggi village began working on the installation in the fourth week, the Sangkrah village had already carried out 50 sets, the Sewu village had already implemented 50 sets. The process of making infiltration wells has entered the additional well stage, namely in the Semanggi village 1 infiltration well is completed from 10 additional infiltration wells and 2 Singkrah wells have been completed from 15 additional

infiltration wells. The presence of SIBAT is increasingly known to the public, from the beginning the community tended to be indifferent, and now the community actually has good trust in the SIBAT.

5. DISCUSSION

5.1 CIPP Evaluation

The researcher used the CIPP evaluation approach (Context, Input, Process, Output), Context (Background), Input (Input), Process (Implementation), Output (Results).

Matrix 1. Context component

No.	Component	Description
1	Human Capital	The community has a sufficient level of education, has experience about floods (feels accustomed to flooding), does not have good and correct knowledge of mitigation, is open to people from outside the region, has a fairly solid seasonal calendar
2	Financial Capital	the financial community is in the middle and low category. The majority work as laborers, land ownership is unclear (does not have certificates), some communities have home industries such as convection, producers of broiler chicken and other entrepreneurs.
3	Physical Capital	Transportation and information access is quite good, there are bridges, quite close to health facilities, schools and public buildings that are adequate and safe as evacuation sites
4	Social Capital	The population is densely populated, has a large number of elderly and toddlers (vulnerable groups), the potential for conflict due to economic problems, quite active community activities, there are several community actors who are cooperative and active in their community activities
5	Natural Capital	Lowland areas and easy to reach, slum neighborhoods, have the habit of throwing garbage into the river, having enough daily waste production because many have a home industry, poor sanitation and inadequate availability of MCK, access to clean water from a portion of PAM well

(Source: data processing, 2017)

Matrix 2. Input Components

No.	Component	Description
1	Human Capital	Available SDM: Governments, stakeholders, community leaders and participating communities, collaboration with parties from outside the region (Jasa Tirta, BPBD, LPPM UNS) as partners in CFR activities
2	Financial Capital	The community is interested in improving the economic level, provided vetiver seedlings whose results can be processed as essential oils and handicrafts, vertiminaponic designs that are easy to use and safe from flooding
3	Physical Capital	Having data on adequate, safe public places and can be used as evacuation and activity locations during the program

4	Social Capital	Form SIBAT as a forum to accommodate people who actively participate and develop skills as volunteers.
5	Natural Capital	There is extensive land on the banks of the river that can be planted, a dense and permanent environment so that it requires permission from the relevant parties to make biopori holes and infiltration wells

(Source: data processing, 2017)

Matrix 3. Process Components

No.	Component	Description
1	Human Capital	The village government responded well and supported the CFR program, the community was encouraged to actively participate in the implementation of the activities, the partners played a role in providing training, materials and tools needed for the implementation of the CFR
2	Financial Capital	processed products from vetiver are promising. Vertiminaponik has a positive impact on financial reduction for daily consumption, but has not been evenly distributed in all societies
3	Physical Capital	Making infiltration wells and biopore holes is quite even, even additional holes are made. Installation of evacuation routes and installation of flood detection devices (EWS).
4	Social Capital	The appearance of the SIBAT slowly shows its existence, there are issues of social jealousy, but this can still be overcome
5	Natural Capital	During the rainy season, puddles begin to recede quickly due to the presence of infiltration wells and biopore holes, but there is still a lot of waste in rivers and creeks

(Source: data processing, 2017)

Matrix 4. Product Component

No.	Component	Description
1	Human Capital	The knowledge of the community about disaster mitigation has increased and the emergence of SIBAT has had a positive impact on the surrounding community and residents of other kelurahan, so SIBAT has begun to be formed in other villages. Riverbank communities, are more manageable to mitigate independently.
2	Financial Capital	vertiminaponik began to be ordered individually by the community, thus starting to create a pattern of food security independently. Sales of processed vetiver products in the form of accessories and essential oils are sold online and offline and the results are used to fund the development of the SIBAT.
3	Physical Capital	The number of infiltration wells and biopore holes discharged in three urban villages has met the target of 100 holes per village, even in the process of making additional infiltration wells.
4	Social Capital	The community's trust in the SIBAT increases so that there are many problems in the community that involve the SIBAT to handle it. The existence of SIBAT in the community also provides a positive image for PMI Kota Solo, so that people are more familiar and helped by PMI.

5	Natural Capital	The community environment that was originally slum began to be organized and accelerated the ebb and flow of inundation water in the event of a flood. This indirectly makes people more concerned about their environment.
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(Source: data processing, 2017)

5.2 Analysis of Adger's Theory

According to (Adger et al., 2001) the more vulnerable a system is, the lower the institutional and community capacity to adapt and shape change. Thus the management of resilience is not only related to maintaining capacity and choices for development in the present and future, but also concerning environmental, social and economic resilience issues. The steps taken in the CFR program, which are forming SIBAT, are ways to bring about community social security and community solidarity. Efforts to improve economic resilience, carried out by vertiminaponic manufacturing, in order to reduce consumption costs, the presence of vertiminaponics is also an alternative for vulnerable people (toddlers and the elderly) to be able to meet their nutritional and health needs, and be easily accessible without going far to the market to buy vegetables . Social and economic resilience is also supported by strengthening capacity in the aspect of natural capital (environment), namely by making channels through infiltration wells and biopores so that when floods occur, flood water inundation becomes more retroactive, it can provide psychological and physical health effects on human aspect, besides that it also reduces the risk of damage to infrastructure and public facilities in the target area (Sewu, Sangkrah and Semanggi villages).

5.3 Analysis of the Rogers Theory (Diffusion of Innovations)

Based on Rogers' theory, there are four elements in the diffusion process that involve: 1) Innovation, 2) Individuals or other groups who have knowledge of these innovations, 3) Individuals or other groups that have not or do not have knowledge about these innovations and 4) communication channels which connects the two units. Based on the results of the study, it was found that there were four elements in society, namely as follows

5.3.1 An innovation: CFR program. This program is an innovation offered by the community with the characteristics of flood-prone areas to create resilient communities (resilience).

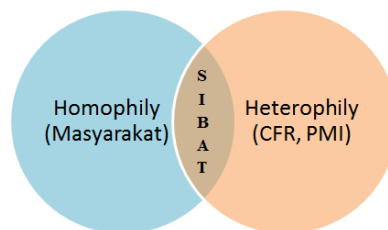
5.3.2 Individuals or parties who have knowledge of innovation: namely PMI Surakarta City, collaboration with IFRC and Zurich. Apart from partner access, PMI has knowledge capital related to the concept of resilient communities, analysis of disaster areas, implementation of mitigation and risk reduction, and flood detection technology. This knowledge is something that will be communicated to the target community in three villages (Sewu, Sangkrah, Semanggi).

5.3.3 Individuals or parties that do not yet have knowledge about innovation: the target community of the program is in the villages of Sewu, Sangkrah and Semanggi. The community is limited to knowing the signs of rising volumes of river water, appeals for evacuation to dikes (guardrails made

as separators between rivers and settlements) and assistance from PMI. Communities do not yet know the CFR program, the concept of resilient communities, effective mitigation management, recognize the types of risks and vulnerabilities as well as disaster risk reduction efforts. The things that are not yet known by the community are the conditions that will be pursued through communication.

5.3.4 Communication channels: SIBAT, which is an extension of PMI to implement the CFR program, as a way to communicate CFR programs to the community. SIBAT is easier to mingle with the community because it comes from the same region and has understood the ins and outs of the area. This mix creates multiple identities, namely the identity of the SIBAT as an extension of PMI, as well as SIBAT as a volunteer from each village.

SIBAT Communication Channel Diagram



(Source: data processing, 2017)

5.4 Sustainable Development in Surakarta City

The description of sustainable development in the field of disaster is contained in an international disaster framework, namely the Sendai Framework, priority actions include:

Priority 1. Understand disaster risk. Realized through the CFR program by providing socialization, baseline surveys and social mapping, so that people are invited to assess together about what vulnerabilities and capacities exist in their environment. Through mapping, it is then used as a guide in creating the right mitigation model.

Priority 2. Strengthening disaster risk governance to manage disaster risk. Realized in creating risk management, which was carried out in the CFR program in collaboration with ITB and Jasa Tirta in creating a flood detection application, namely FEWEAS, so that the community and SIBAT get access to information about flood disasters. In addition to technology development, KBBM training and installation of evacuation routes make the community more vigilant and ready to deal with disasters.

Priority 3. Investment in disaster risk reduction for resilience. Realized in seeking the availability of reserves of economic resources that can be used at the time of the flood disaster, including the manufacture of vertiminaponics and planting of vetiver. Vetiminaponik is used to grow vegetables, so that people can reduce daily consumption money and can be saved for other purposes.

Priority 4. Increase disaster preparedness for effective responses and for "Building Back Better" in recovery, rehabilitation and reconstruction. Realized by applying mitigation to flooded areas through the construction of infiltration wells and biopore holes, the existence of these two functions is a complementary attribute of the target area's infrastructure development (Sewu village, Sangkrah, Semanggi).

5.5 CFR Program Supporting and Inhibiting Factors

The CFR program is implemented from 2015 to 2017, and there are several supporting factors as well as inhibiting factors in the program's journey. The following is a matrix of inhibiting factors and supporting the implementation of the CFR program

Matrix 5. Supporting Factors and Inhibiting Factors of the CFR Program

Supporting Factors	Inhibiting Factors
Local governments and communities respond well to the implementation of the CFR program	The river bank (the former relocation area) became slum because many residents threw garbage into the area
The response from other kelurahan hopes that all villages can form SIBAT in their village	The urban population, which is the majority of workers, makes the team rather difficult to recruit prospective members of the SIBAT
KBBM SIBAT training runs smoothly	Different educational backgrounds
Residents feel the positive impact of the construction of infiltration wells in their environment, which is when rain falls quickly.	Technical constraints: such as weather, difficulties in using the FEWEAS application, a schedule of activities that are backwards due to community activities
SIBAT for the community, government and the media is increasingly supporting	In the implementation of the PRA / VCA participants tend to think without regard to the results of previous assessment activities.
Support for vertiminaponic planting increased, not only residents but also the BPBD office planning to install vertiminaponik	Approach to external parties of the kelurahan, such as schools, stations need extra time, because the policy holders of the agency are not native to the village
PMI is backing up funding needs	The FEWEAS application has not functioned optimally.

(Source: data processing, 2017)

6. CONCLUSION

The implementation of the CFR Program is an agenda that bridges the community with those who can reduce the risk of flood disasters. The researcher concluded that there was an effort to enter flood-prone communities in Sewu, Sangkrah and Semanggi villages through CFR programs with various activities such as making infiltration wells, biopore, vertiminaponic holes, making evacuation routes and of course increasing human resources through the establishment of CIBB and

intensive training about KBBM, mitigation, baseline surveys, risk mapping and contingency plans is one of the participatory steps to find out what are the problems, needs and solutions for them. Besides that, it becomes an applicable educational tool because people can share knowledge with each other. Through the CFR program, there is an effort to invite target communities to recognize what is their vulnerability and capacity so that they can understand how they take attitudes and determine the steps to continue their lives.

The existence of SIBAT as a volunteer group in the target community has become an important position that has a role in disaster management. Without prejudice to the existing risks, it is no less important to strive for a form of community-based disaster risk reduction that is and continues to uphold the local wisdom that the community has, so that the journey of people's living systems has a correlation with how to create their ideal form of risk reduction. In the case of SIBAT it is a driving force for the community to be aware of disaster risk reduction efforts and develop capacity for a better quality of life and strive for sustainable development in even disaster-prone sectors.

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