

Community-Driven Flood Control Dike Project: An Evaluation Based on ABCD Discrepancy Model

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Abstract –Climate change may have intensified natural phenomena. For example, the onslaught of torrential rain posed potential disaster to the nearby community when the Ayungon River in Negros Oriental, Philippines overflows its embankment. Mitigation of this flooding secures the communities along the river's path. With the help of KALAHY-CIDSS, funded through a World Bank loan and DSWD, a dike to control flooding was built on the site. This program is community driven since from conception to implementation the workforce was contributed and managed by the residents of the area. The discrepancy evaluation model ABCD of Ochave is used to evaluate this project in four areas – beneficiaries, program, effect and social impact. The flood control dike was effective in preventing loss of life during heavy torrential rain and typhoons. There was very minimal destruction of properties and the agricultural field beside the dike was protected. The implementation including the financial transparency of the project was accomplished. However, some improvements were suggested to maximize the impact and extend the lifetime of the project. Even though the program was completed it was not anticipated that the second cycle of the project that will extend the dike will not push through. In hindsight, the dike should have been constructed right on the optimum location which is the curve of the river to mitigate the onslaught of strong river current.

Keywords –KALAHY-CIDSS, flood control, dike, community-driven project

INTRODUCTION

Poblacion is one of the barangays of Ayungon in Negros Oriental and is about 108 hectares in size. It is bordered by Barangay Awa-an on the north, Tampocon II on the south, Atabay on the west and the Tañon Strait on the east (<http://ayungon.gov.ph>). Brgy. Poblacion has five hundred sixteen households with population of 1,940; 949 males and 991 females. Poblacion has six puroks. The main livelihoods of the Barangay are fishing, farming, small businesses and employment in different offices in private and Local Government Unit. The crops in the Barangay are rice, banana, coconut and root crops and there are also fishponds in the Barangay.

The border shared between Brgy. Poblacion and Tampocon II is the Ayungon River (Figure 1) which runs through Sitio Ilaya of Poblacion before making a curve to the adjacent Barangay Tampocon II. During continuous heavy rain down pour and typhoons, there is a tendency for the river to overflow the riverbank which will spill over right through to the Poblacion area. This river poses danger to human lives, livestock and farms during torrential rain. In fact, the Barangay had already seen several experiences of flooding from

this river which even caused destruction of properties and loss of human lives. It is imperative that structural mitigation to flooding like building a dike on this area to control or prevent the overflow of water even as the river is getting shallower due to deposits from tailings, sand and pebbles from silica mining some kilometers up on the mountain.

Sometimes because of asymmetric information [1] local government units are not aware or even dormant and unresponsive to the needs of their constituents thus government interventions do not directly address community problems. With the Department of Social Welfare and Development Kapit-bisig Laban sa Kahirapan – Comprehensive Integrated Delivery of Social Service (DSWD KALAHY-CIDSS) the national government has a way of directly involving the community to participate in its programs.

The KALAHY-CIDSS is one of the government's anti-poverty programs. It is funded by the World Bank through loans and government counterparts implemented by the DSWD which targeted the poorest communities in the country. The objectives of KALAHY are to improve the responsiveness of local

government to community needs, encourage the communities to engage in the development activities, and deliver benefits to the Barangay residents through individual projects [2].

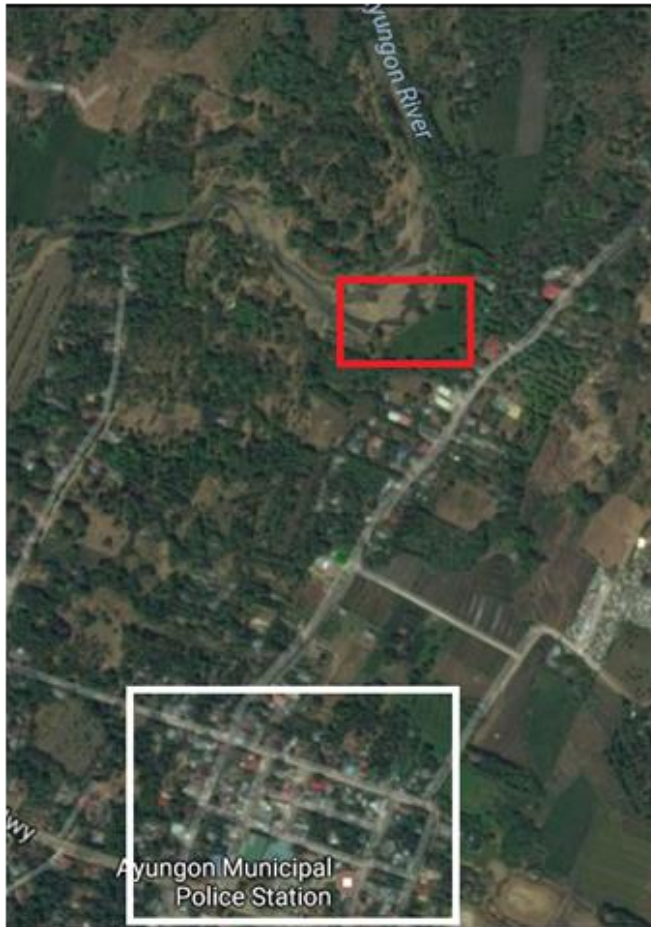


Fig. 1. Location map of the flood control dike (in red square) with respect to Brgy. Poblacion (white square). Courtesy: Google Maps[3]

These objectives are achieved through social preparation and capacity building which involve training the communities in identifying problems and propose solutions. This is done by consultation process headed by the chosen volunteers or community core group for the collective assessment of conditions and identifying the proposed project. This empowers the community to make decisions and develop resource and allocation management [4]. Another dimension to help achieve the objectives is implementation support. The residents will find ways, as this is community driven, in monitoring, evaluating the operation and maintenance by engaging the local government units for technical support among others [5].

The ABCD discrepancy model developed by J.A. Ochave used in this study is simple, comprehensive,

efficient, and flexible. It is similar to other discrepancy models (Stufflebeam, Provus, Scrivens, etc.) but the distinguishing and advantageous factor in Ochave's model is the social impact component. This includes socio-cultural implications traceable to the project which is the most important.

OBJECTIVES OF THE STUDY

The objectives of this evaluation are to determine the effectiveness of the flood control dike in terms of 1) prevention of loss of lives and destruction of property 2) implementation of the project. Specifically, to identify the challenges in the implementation with regards to community involvement and technicality of the program; and to formulate recommendations that will help further the development of policies for the implementation of similar projects.

MATERIALS AND METHODS

Several models can be used to evaluate this program [6]. One particular model is the Discrepancy Evaluation Model (DEM) developed by Malcom Provus in 1969 which is used to assess programs and provide program improvement. Evaluation is done by comparing actual performance against the standard as envisioned by the program planners [7].

Another model which is similar to DEM is the ABCD model developed by Jesus A. Ochave [8]. The main difference in this model is that it also considers the evaluation of the program in relation to its social impact. Although ABCD was originally used to evaluate the effectiveness of teacher education program, in this paper this model is used to evaluate the implementation of a program which is the construction of a flood control dike as social impact is given more relevance in this model.

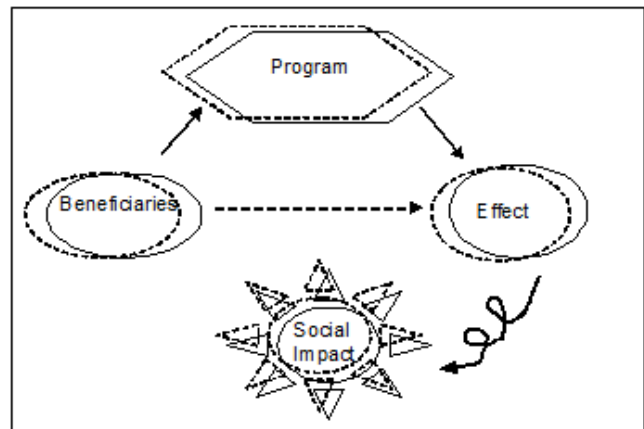


Figure 2. Schematic Diagram of ABCD Model with broken line ----- actualities; solid lines _____ extent

There are four major components in the evaluation which are the beneficiaries, programs, effect and social impact. Each of these components has two dimensions which are intents (standard or specifications of the program) and actualities (observations or what was really done to attain the standard). The gap between the two dimensions is the discrepancy and the magnitude determines the effectiveness of the evaluation. If the gap is small, there is more congruency in the intent and actuality in the implementation of the standard. This gap is helpful in making decisions and recommendations [9]. According to Ochave, the model is anchored on the principle of stakeholders' participation as the right subjects for the evaluation of the program.

This study is descriptive qualitative evaluation. It described the actualities or extent of completion of the program through personal narrative interviews. The respondents of the evaluation were purposively sought. These were the residents of Barangay Poblacion (Barangay captain, foreman, core member and community members) who participated in the implementation of the dike project. As the project was community-driven, the opinions of each respondent were equally important. One-on-one interviews with the respondents which lasted for about ten minutes each were conducted. Documentary inspections on the financial and structural plans were also done to corroborate on the information given during the personal interviews. The respondents were informed that their names will not appear in the study and their comments can't be traced back to them.

RESULTS AND DISCUSSION

The data from the interview were collated and tabulated into the four components (beneficiaries, program, effect and social impact) and analyzed for their intents, actualities and gaps or discrepancies/congruencies. The following data are presented below:

Beneficiaries

1. Intents

Households – These are the families residing mainly in the Poblacion Area who living directly on the path that could be affected of possible overflow of the Ayungon River.

Male – The implementation of the program is community driven thus the work force is sourced out from Brgy. Poblacion; the male population plays major role as there are heavy lifting and loading in the project.

Female – The female population also participate in the construction

Indirect beneficiaries – These are the non-Barangay

Poblacion residents or passersby that will benefit if there is no flooding that will hamper their work or activities

2. Actualities

Households – There are four hundred nineteen households on the path of the possible overflow of the river. Members of these households are given the priority to work on the construction of the dike.

Male – Eight hundred twenty males are given the potential to participate as workers in the construction of the dike. There is rotation of workers every fifteen days so as to accommodate all individuals wanting to participate in the construction of the dike. The workers are either skilled like the masons and those who do the riprapping or unskilled who provide the labor for filling of sacks with sand and stone, hauling of materials and similar work that do not require special skills.

Female – When in a household men are not able or available women were opted to work in the construction. Their work is to provide unskilled labor similar to those with men.

Indirect beneficiaries – The number of passersby or those that just use the road or conduct business in the Poblacion area may vary at anytime.

3. Discrepancies

Households – Some households opted not to participate on the construction as their members have regular jobs that call their time away from the site. They however participated and attended meetings during the proposal of the project. By the time of the completion of the dike, there are more households as population of the Barangay increased thus there is positive discrepancy on the anticipated number of household beneficiaries.

Male – The men were given priorities to work in the construction of the dike for each household. Some of these men have regular jobs thus opted not to work there. In the implementation of the program, there are rules that were followed and three individuals were let go for failure to observe their agreed upon rules. Others left the construction when they found other source of earning a living. As observed, most of those who participated in the construction had no regular jobs.

Female – Some women did not finish their work in the construction as other source of income were made available like as household help or made to tend their homes or care for their children. However, it was made clear that they can come back to work anytime but will depend on the rotation of workers.

Indirect beneficiaries – The passersby are more of end users and have no contribution to the construction of the dike.

There was a great enthusiasm and participation of the community from the proposal to the construction of the project. Although everyone was benefited, it was noted the most of the construction workers were those that do not have regular jobs. In such a way, the construction of the dike had provided not only security but also a means of livelihood for the duration of the construction.

Program

1. Intents

Structural/functional integrity of the dike – construct the dike according to the specifications provided by the KALAHÍ-CIDSS approved blue print so that the dike can withstand the onslaught of the rushing river during floods.

Community participation – as the project is community initiated and community driven, it is expected that from the genesis to implementation it should be participated by the members of the community

Financial transparency – the project is implemented with financial counterparts from the Barangay LGU and Municipal LGU. People that will work on the construction should also come from the beneficiary community, especially Barangay Poblacion.

2. Actualities

Structural/functional integrity of the dike – The construction of the flood control dike was completed and officially turned over to the Municipal LGU. The design has minor revision especially on the curve part of the dike; this revision was approved by the engineers of the KALAHÍ.

Community participation – All the legwork and workforce were provided by the members of the community and they were justly compensated for their efforts.

Financial transparency – The financial counterparts were provide by the Barangay LGU (P230,889.97) and Municipal LGU in aid valued at P367,671.88 in the use of heavy equipment and gasoline for the duration of the construction.

3. Discrepancies

Structural/functional integrity of the dike – The minor revision was done so as to eliminate sharp corners that might cause eddying of the river causing localized whirlpools that will destabilize the bank of the dike.

Community participation – The unity and the Filipino bayanihan spirit were shown in the implementation of the project as some members even when not in their duty provided menial aid.

Financial transparency – The downloading and disbursement of funds were monitored by the KALAHÍ-CIDSS to main financial transparency. The core group of the community handles the distribution of the salary and there were no reported misappropriation of funds. In fact, it was expected the there will be transparency as the community trusted the KALAHÍ personnel monitoring the program.

Effect

1. Intent

The main objective of the dike is the control of flooding in time of heavy rain down pour especially during typhoons.

2. Actualities

The 100 meter dike was completed and turned over to the Municipality of Ayungon on 2013. Upon completion it prevented overflows of the river. In one of the heavy rains, a cluster of bamboo from upstream had been uprooted and lodged on the northern edge of the dike. During the Typhoon Queenie on November 2014, the dike suffered a major damage especially on the northern edge where the bamboo was stuck. The riprap of portion was destroyed making a gaping hole where water can overflow right towards into the Poblacion area.

3. Discrepancy

Technically wise, the dike was built according to its specification provided by the KALAHÍ Engineers. Having in mind that after the completion of the 100 meter dike as the first cycle of the project, it will be continued with extension of the dike in the second cycle. Thus, the dike was built starting from the border between Barangay Tampocon II and Poblacion towards north. This length of 100 meters is not enough to fully cover the area of the curve of the river where it changed direction coming from west to south. This area is the most vulnerable because this is where the overflow of the river goes directly to the Poblacion area. In most KALAHÍ-CIDSS projects, implementation of the second cycle of the project easily pushed through. In this instance however, there was a misunderstanding between Municipal LGU and the DSWD-KALAHÍ-CIDSS in the implementation of the second cycle. Thus only the 100 meter dike was constructed.

Although lacking the foresight that the second cycle of the project will not be implemented and that technically the dike was built according to its specifications, the position of the dike was slight off. It should have been built directly on the curve of the river and from there extensions can be constructed from both edges.

Social Impact

1. Intents

Protection from the loss of human lives is the main purpose of the flood control. It provides peace of mind from the possible flood. In the event that there should be overflow from the dike however, people can have ample time to properly react.

The protection of properties from destruction comes in handy. These properties are from the household and from the livelihood in livestock, agriculture, fishery, business and offices.

2. Actualities

The construction of the dike gave extra sense of safety for the residents of Brgy. Poblacion from the floods. There was no reported loss of life after the construction of the dike.

Very minimal losses of properties had been observed after the flood control dike was built. The money that should have been spent for the rehabilitation of personal properties can be used by the residents for better purposes.

3. Discrepancies

The affected residents felt safer with the presence of the dike. Although the dike offered some protection, they are still vigilant during typhoons and heavy rain down pour especially during nighttime. When nature like a river shows its potential, structures built on its way usually has to give way.

The presence of the flood control dike definitely is a gain to maintain the integrity of personal properties. But then again, residents do not fully trust and are still vigilant during situations of possible flooding.

CONCLUSION AND RECOMMENDATION

Assessed against the objectives of the evaluation, the flood control dike was effective in preventing loss of life during heavy torrential rain and typhoons. There was very minimal destruction of properties and the rice field adjacent to the dike was protected. Because the program was controlled and managed by DSWD-KALAHICIDSS in partnership with the community with the core group of members, the implementation including the financial transparency of the project was accomplished.

With regards to the challenges of the project in community involvement, the residents were very participative and generally they follow their establish rules especially in the rotation of the workforce. On the technicality of the program, the construction of the dike was followed based on the blueprints provided by the KALAHICIDSS technical group. However, even though the program was completed it was not anticipated that the

second cycle will not push through because of some constraints with the Municipal LGU. And this contributed to the early damage of the northern edge of the dike after an onslaught of strong river current. In hindsight, the dike should have been constructed right on the curve of the river and not on the flank starting from the southern border of the Barangay.

In community based driven programs the implementers should take notice of the changes the community might propose during the implementation, like the smoothening of the curve eliminating the corners that may cause eddying of the river thereby hastens the destabilization of the embankment of the dike. For projects that are multi-stage, it must be anticipated and factored into the program the location where the construction will be most effective. Like the mutli-cycle implementation of the dike it should have been at the curve of the river before extending on both sides so that in the event of discontinuation of the next cycle, the dike would have best served its purpose and maximize its life span.

The ABCD Model of Ochave is mostly used in the evaluation of educational programs but here in this study it used to evaluate structural project and thereby showing flexibility in its application. Unlike the other the discrepancy models and because of its fourth component which is the social impact, this project is best evaluated using this model. The impact to the recipient or the community is the most important considering all other factors as the community has the final say of the effectiveness of the social endeavour. It is recommended to use the ABCD of Ochave to evaluate programs and projects especially if social impact is to be considered.

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