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Agencies and Communities Participation in the Climate Change Programs

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ABSTRACT

Metro Naga is primarily composed of Naga City and its surrounding municipalities in the province of Camarines Sur. It is located within the heart of Bicol's largest river basin area and is considered as a flood-prone region. This provides challenges to the government agencies responsible for implementing climate change programs. The study utilized the descriptive-evaluative design of mixed method of research to evaluate the community participation in the current programs and campaigns for Disaster Risk Reduction Management (DRRM) and Climate Change Adaptation (CCA). Information was gathered through Structured questionnaires, guided interviews, and focus group discussions (FGDs) from the randomly selected respondents of the four (4) Municipalities of Metro Naga. Based on the findings of the study, community residents only participated "often" on the DRRM and CCA programs (= 2.94) and the problems encountered in its implementation were no access to effective and applicable disaster risk financing and insurance (90%) and lack of initiative from the community to rebuild and repair the houses/buildings destroyed by the disaster (28%). As a result, continuous campaigns on community involvement in disaster risk reduction and climate change adaptation should be established. The adoption of community-based disaster risk reduction management will give opportunities to the community residents to be equipped with the skills and knowledge needed to be adaptive and disaster resilient.

Keywords — Agencies Culture, Communities participation, Climate Change Programs, Philippines

INTRODUCTION

Shreds of evidence of climate change was already seen throughout the globe. Forest fires, melting of glaciers, drying of lands and increasing number of endangered species were just a few pieces of evidences of climate change observed (Levitus et al. 2017). Scientific evidence revealed that the warming of the Earth's surface and change of climate is unequivocal (Robinson & Monte, 2014). Intergovernmental Panel On Climate Change (IPCC) is the United Nation's body for assessing the science related to climate change. It has been the body that provides regular scientific assessments on climate change to guide policymakers in addressing climate change issues and problems. IPCC further discussed that the extent of climate change effects on individual regions vary depending on how would the community will mitigate or adapt to change. (Parry et al. & Ciais et al.)

Indeed, fighting climate change provide a challenge not only with policymakers but also with the government. Responding and adapting to climate change should be acted upon by all the stakeholders involved (Bulkeley, 2013). Climate change adaptation is key to the creation of climate policy. In the study of the status of climate change adaptation in Africa and Asia, revealed that evidence of adaptation initiatives is limited to country's receiving fund in adapting to climate change. (Ford, Berrang-Ford, Bunce, McKay, Irwin & Pearce, 2015).

Cities play an active role in climate change. High-end industrial machinery and other contributors in polluting the environment were commonly present in the urban areas or cities. With these city government should formulate and implement policy on climate change adaptation. But according to the study of Araos et. Al,(2016) cities that were identified as extremely adaptors to climate change belong to low-income countries.

In the Philippines, climate change is an evident and an alarming subject because the issue is viewed not only as of the cause of property loss and casualties but also as a critical factor that would appraise the survival of the country (De Leon, E. G., & Pittock, J. 2017). The effects of climate change on agriculture, forestry, marine life, etc. will further encumber a country already reeling from a host of socio-economic problems (Mercer, 2010). To address this issue Department of Interior and Local Government (DILG) and all allied national government agencies are working together to ensure the Philippines is ready for the future. The DILG, in particular, sees to it that relevant policies and programs are propagated, instilled and implemented among all local government units in the country. RA 9729, otherwise known as Climate Change Act of 2009 and RA 10121, or the Philippine Disaster Risk Reduction Management Act both aim to instill in the public consciousness that meeting the challenges ahead demands organization, coordination and systematic responses at all levels of governance and community management. Various DRRM and CCA programs and projects were institutionalized. One of these is the project NOAH or the Nationwide Operational Assessment of Hazards of DOST. The program is the country's flagship disaster prevention and mitigation program. Project Noah was launched after the destructive tropical storm Sendong in December 2012 (Mateo, 2017).

On the local front, Metro Naga is composed of Naga City and its surrounding municipalities (Bombon, Calabanga, Camaligan, Canaman, Gainza, Magarao, Milaor, Minalabac, Pamplona, Pasacao, Pili and San Fernando) are visited constantly by about 20-22 destructive typhoons annually (MNDC, 2019). When these disasters strike, Metro Nagueños are highly affected because they heavily rely

on the government agencies' courses of action concerning its active involvement in climate change awareness efforts in Metro Naga and Camarines Sur.

Recently, the National Resilience Council was made to address the issues and concerns regarding the disaster resiliency of the country where Naga City is a part of. It is the role of the local government to implement the provisions of DRRM and CCA. In this study, the involvement and compliance of the local government units and government agencies were being evaluated.

Establishing resiliency is one way of mitigating the impacts of disasters with the help of Inter-local government units and agencies' commitment in the implementation of DRRM and CCA with the active participation of the local community, adverse impacts of natural hazards will be reduced. In general, the effectiveness of the implementation of DRRM and CCA will depend on the compliance and participation of the LGUs, GAs, and local communities.

This provides challenges to the heads of the communities. Furthermore, this collaboration will lead to the improvement of people's adaptation to climate risk. Through the help of barangay officials, government agencies, employees, and household communities, this study evaluated the level of compliance and participation of the stakeholders in DRRM and CCA in Metro Naga and the problems and issues in its implementation.

OBJECTIVES OF THE STUDY

This study evaluated the level of compliance in the implementation of DRRM and CCA programs, campaigns, and activities by the Local Government Units (LGUs) and Government Agencies in the current programs and campaigns in Metro Naga in 2018. Specifically, the study determined the level of participation of community residents in Climate Change Programs, and the problems encountered regarding its implementation by Government Agencies (GAs) and communities.

METHODOLOGY

Research Design

The study utilized a descriptive-evaluative design of mixed method of research (Creswell & Creswell, 2013). Two different methods were utilized to confirm, cross-validated, or corroborate findings in determining the level of compliance and participation of the local government units and government agencies in DRRM and CCA programs. The data and information of this study were collected from

the responses of randomly selected community residents, government agencies, and local government units of the selected towns in Metro Naga. Focus Group Discussion (FGDs) were also administered and selected individuals were chosen to provide inputs during this focus group discussion. The discussions were guided by the survey instrument to confine deliberations to necessary issues.

Research Site

The study was undertaken in four municipalities of Camarines Sur, Philippines namely: Canaman, Camaligan, Milaor and Pili. These four municipalities were chosen because these were identified as flood-prone areas in Camarines Sur and had high risk in environmental disasters.

Participants

The respondents of the study were from Canaman, Camaligan, Milaor and Pili. It is composed of household heads, community chairman and personnel of government agencies from the different barangays in Canaman, Camaligan, Milaor and Pili.

Instrumentation

The research instrument was crafted to answer the problems stated in this study. A set of the research instrument was prepared for the community residents and the government agencies (GAs). One hundred and twenty(120) respondents participated in the validation of the questionnaire. The trial respondents' responses were analyzed and its measure of reliability was determined. The validated questionnaire was then used to gather information and data. The questionnaire

was composed of four parts. It includes the profile of the respondents, level of compliance/participation in the implementation of DRRM and CCA programs, and the problems encountered in the implementation of the program.

The questionnaires were administered and retrieved personally by the researchers. All targeted respondents were informed about the purpose and importance of the study and that honest answers would serve well for the study. The validity of the instrument was achieved through pilot testing, institutional peer review and literature review. On each research questionnaire, respondents were informed of the purpose of the study and were also asked for their consent in answering the questionnaire and using the data gathered. They were also assured of their anonymity and privacy. The statistical treatment included tallying, tabular presentation and statistical computations using a five-point Likert scale and average weighted mean. Weighted mean was used in determining the average of the responses in each of the given questions. This was used to find a single value out of the different results and in interpreting the data about a given condition (Bluman, 2013).

Table 1. Likert Scale For Community Participation and Gas Compliance

Scale	Verbal Description
3.01-4.00	always
2.01-3.00	often
1.01-2.00	sometimes
0.50-1.00	never

Table 1 shows the scale to rate the community participation to the DRRM and CCA programs. The verbal description "always" is rated in between 3.01 and 4.00, "often" is 2.01-3.00, "sometimes" is 1.01 – 2.00 and "never" is 0.50 – 1.00.

RESULTS AND DISCUSSION

Metro Naga is constantly hit by about 20-22 tropical storms/typhoons annually that trigger landslides and widespread flooding in various towns of Metro Naga namely: Camaligan, Canaman, Milaor, and Pili were high-risk areas for flooding. Typhoons would usually hit the Bicol Region during the latter part of the year, starting in September.

Local Government and Agency Disaster Response

Recognizing the huge task of stakeholders of vulnerable the provisions of R.A. 7160 or the "Local Government Code" sections 16 and 24, in which the responsibility of the national government and local governments for disaster planning, must be strengthened. Hence, the DILG is tasked to "formulate plans, policies and programs which will meet local emergencies arising from natural disasters…," has embarked different programs to be implemented that aims to create disaster-resilient communities. (LCCAP, 2014).

In Camarines Sur, disaster risk reduction and climate change adaptation start with its governor, which is Governor Miguel Villafuerte. He is the one who directs the Provincial Disaster Risk Reduction Management Council (PDRRMC) to immediately convene all the Municipal Disaster Risk Reduction Management Officers (MDRRMOs) and activate their respective incident management teams.

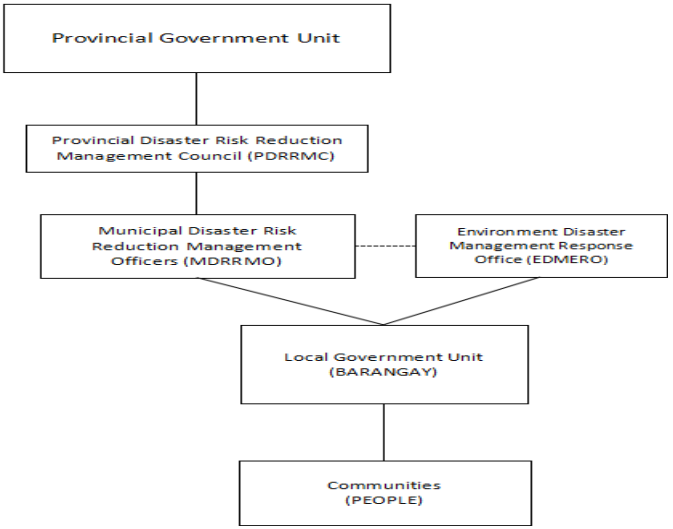

Figure 1. Local Disaster Response Framework

Every MDRRMO should have a well-prepared safety and emergency plan should a typhoon or any disaster strikes the province of Camarines Sur. Low-lying and flood-prone areas of the province were given special attention. The communication protocol was activated in all municipalities, alerting the chief executives and MDRRMOs to plan out the mobilization of its personnel to ensure that disaster protocols are in place. As part of the disaster protocols, emergency

ambulances are on a stand by mode as Camarines Sur PDRRMC preps up for typhoons. While Environment Disaster Management Response Office (EDMERO) help facilitate contingency activities and check on their barangay's vulnerabilities and risks so that preventive actions can be implemented.

Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) bear the news about the weather conditions they also provide a warning to municipalities near rivers and streams tributary of the low lying area of municipalities of Camarines Sur which always includes Camaligan, Canaman, Milaor, and Pili. People living near the mountain slopes and low-lying areas are also advised to be alert for possible flash floods and landslides, and the local disaster risk reduction and management councils concerned are advised to be alert and take appropriate actions.

Compliance of Government Agencies (GAs)

Natural disasters strike unexpectedly and the only thing one could do is to alleviate the impact it will bring. Thus, the government puts an effort in developing a strategic plan to prevent and mitigate the adverse impacts of disasters (Ishiwatari, 2012). At the national level, the government aims to institutionalize and standardize DRRM measures and processes at the local and community levels; it seeks to empower the most vulnerable municipalities and cities in the country and to enable them to prepare disaster risk reduction and management and climate change adaptation programs, campaigns, and activities.

Table 2. Level of Compliance of GAs in the implementation of DRRM and CCA programs

Programs, Campaigns, and Activities	Mean	Description
Green technology for houses and buildings	1.85	Sometimes
Enhance communities' participation	2.31	Often
Collaborate with other community stakeholders	1.75	Sometimes
Well-established disaster response operations	3.01	Always
Safe and timely evacuation centers	3.52	Always
Basic services to affected communities	3	Often
Temporary shelters for affected communities	2.9	Often
Restore and strengthen economic activities	2.01	Often
Construct/reconstruct disaster and CC resilient infrastructure	2.3	Often
Programs on safety and rescue after each disaster.	3.7	Always
AVERAGE	2.63	Often

Table 2 presents the level of compliance of GAs in the implementation of DRRM and CCA programs. This gives a picture of how the GAs is implementing the programs on DRRM and CCA. It could be seen from the table that among the identified programs the following were rated as "always implemented": programs on safety and rescue after each disaster (3.7); safe and timely evacuation(3.52) ; and well-established disaster response operations (3.01), while the program on green technology for houses and buildings with a mean of 1.85; and collaboration with other community stakeholders (1.75) or "sometimes implemented". From the data, it clearly shows that collaboration with the different stakeholders is not yet established and only a few of the community members do. Overall the GAs compliance in the implementation of DRRM and CCA programs were rated "often" (2.63).

Communities Participation

Municipalities of Metro Naga, being one of the vulnerable municipalities in the country, have their own Municipal Disaster Risk Reduction and Management Council. These units strategize and integrate the Disaster Risk Reduction and Management and Climate Change Adaptation Plans for the community. Table 3 presents how often these programs are implemented at the community level.

Table 3. Communities Participation in DRRM and CCA Programs

Programs, Campaigns, and Activities	Mean	Description
Awareness on DRRM and CCA	2.31	Often
Well-established disaster response operations	3.01	Always
Integrated and coordinated Search, Rescue and Retrieval (SRR) capacity	3.25	Always
Evacuation of affected communities	3.52	Always
Basic social services	3	Often
Economic activities restored and strengthened	2.01	Often
Safer sites for housing	2.2	Often
Monitor for weather announcements/forecast	3.71	Always
Survival kits before the disaster strike.	3.5	Always
Adequate shelter needs	2.9	Often
AVERAGE	2.94	Often

From the data, it reveals that of the ten (10) identified programs participated by the communities, five (5) are rated as "always implemented." Programs on monitoring of weather announcements or forecast (3.71); evacuation of affected communities (3.52); survival kits before the disaster strikes (3.5); integrated and coordinated search, rescue and retrieval capacity (3.25) and program on well-established disaster response operations (3.01). While the other programs such as awareness on DRRM and CCA, basic social services provided, safer sites for housing and economic activities restored and strengthened, and adequate shelter needs are rated as "often participated." Overall the community participated in CCA and DRRM programs "often" (.

Problems Encountered

In the implementation of the program, government agencies encounter some hardship. Shown in table 4 is the five major problems encountered in implementing projects and programs on disaster risk reduction and climate change adaptation.

Table 4. Problems encountered by the Government Agencies (GAs)

Problems	Percentage
Lack of adequate shelter	50%
No comprehensive plans coming from LGUs	30%
No collaboration with other community stakeholders	80%
Basic social services are not provided	60%
No access to effective and applicable disaster risk financing and Insurance	90%

From the data, it could be seen that the highest problem encountered by the GAs during the implementation of the programs was: no collaboration with other community stakeholders (90%), no access to effective and applicable disaster risk insurance (80%), this is because the government does not provide micro-insurance or household earthquake or flood insurance for financial protection. Sixty-percent (60%) encountered the problems on basic social services; lack of adequate shelter (50%); and no comprehensive plans coming from LGUs (30%).

No collaboration with other community stakeholders may lead to the unsuccessful implementation of the program. Social services were also provided but not enough to answer the need of the community; thus, it is perceived as a problem by the government agencies implementing the program. Bicol is a natural disaster-

prone area must have access to effective and applicable disaster risk financing and insurance; however, it is limited to the individual who can afford it.

Table 5. Problems Encountered by the Communities

Problems	Percentage
Failure to follow policies and procedures	16%
Lack of participation in preparedness and response plan	18%
Lack of support from the LGUs	21%
Lack of initiative to rebuild and repair	28%
Lesser level of awareness	17%

From the data, it is shown that 28% of the respondents encountered the problem with lack of initiative of the GAs to help and repair the houses, 21% of the respondents identified that there is no support from the LGU, while 18% and 17% encountered the problems on lack of participation on preparedness and response plan and a lesser level of awareness, respectively. Only 16% encountered the problem of failure to follow policies and procedures.

The community seeks for support from different government agencies; thus they have perceived that one of the problems they have encountered is the lack of initiative from the GAs to help them rebuild the houses that had been destroyed by the typhoon, flooding or earthquakes. As to the lesser level of awareness, some part of the community was not invited to seminars, trainings, or workshops conducted by the government and other agencies.

CONCLUSIONS

Based from findings of the study, the following conclusions/implications are deduced: The community residents are "often" (2.94) participates in the Disaster Risk Reduction and Management and Climate Change Adaptation; with the local government efforts on implementing programs, campaigns, and activities. Twenty-eight percent (28%) identified that the community encountered problem in terms of lack of initiative to rebuild and repair properties destroyed by the disasters and 90% have no access to effective and applicable disaster risk financing and insurance.

Thus, it may be implied that: (1) implementation strategies of the Local Government should be revisited to strengthen the community involvement in the programs, campaigns, and activities of DRRM and CCA. (2) Disaster Risk

Reduction and Management (DRRM) and Climate Change Adaptation (CCA) plans should be anchored from the needs of the community and recognizing the existing coping mechanisms and capacities of the community/people as well as local know-how and resources is important to disaster risk reduction plans and strategies; (3) the adoption of community-based program for enhancing resilience to disaster and climate change.

TRANSLATIONAL RESEARCH

The findings of this study may be best translated to a pamphlet for information dissemination, if not, a further awareness campaign on climate change adaptation and disaster risk reduction. The pamphlet will have the information about climate change adaptation and disaster risk reduction management programs being implemented in Camarines Sur. These would be disseminated to different communities in the Philippines to give them an initial idea on what the programs are implemented is all about. The pamphlets can also serve as their initial guide if they want to venture in implementing programs in climate change adaptation and disaster risk reduction and management programs.

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